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Official Conference Proceedings  
ISSN: 2186-5892

# The Asian Conference on Education

Osaka Japan 2012

## The Asian Conference on Education

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The International Academic Forum (IAFOR)  
Sakae 1-16-26-201  
Naka Ward, Nagoya, Aichi  
Japan 460-0008  
ISSN: 2186-5892  
[http://iafor.org/ace\\_proceedings.html](http://iafor.org/ace_proceedings.html)

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

This paper draws conclusions from a case study based on an introductory research course in a college of education: a course taught first in a blended format, and then taught fully online. Using the self-reflections and self-assessments of ethnically diverse students in each version of the course, quantifying their levels of achievement in comparison with learning objectives, the author systematically compared the two versions. Students' anonymous self-assessments addressed the degrees to which they had attained each of ten course learning objectives. Students from the blended version of the course tended to assign relatively higher ratings to their levels of achievement, in comparison with students in the fully online course. The results also highlight the advantages of flexible assessment practices, and of involving students in the course evaluation process. It is clear that when students monitor and manage their own progress in courses with online components, valuable learning experiences take place. This paper discusses possible reasons for the differences in the experiences of students in blended versus fully online courses. Realizing the full potential of both course formats will require identifying ways in which the core values of higher education may best be expressed in online courses.

**Keywords:** online course, blended course, course management system, student self-assessment, online learning environment, higher education

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Over the past few years, the assessment field has changed so that much more emphasis is now placed on how student assessment is an integral part of teaching, not just something that is done after instruction to measure what students have learned (McMillan, 2011, p. xi). Involving students in the assessment and evaluation process is also becoming an essential part of assessment programs in higher education. Through such involvement, students can reflect on what they have learned and on how they learn. In doing so, they develop the skills to become more effective learners.

Higher education now attracts a wider variety of students than ever before (Dunn, Morgan, O'Reilly, & Parry, 2004, p. 5); specifically, students are more diverse in terms of culture, ethnicity, age, socioeconomic status, and even expectation. Addressing reasons to move to more flexible assessments with diverse students, Dunn et al. (2004) state the following:

*Underlying the move to flexible learning and assessment is a concern that student profiles have changed and those committed to higher education nowadays have to work to support their studies. There are also far more mature-age students entering higher education than ever before. In addition, there is the realization that traditional teacher-centered methods of delivery are outmoded because they focus on coverage of content and do not engage learners in authentic learning experiences that can be effectively measured. (pp. 39-40)*

### **Purpose of the Study**

This study discusses the case of an introductory graduate research course implemented with blended learning, and then taught fully online, in the School of Education at the University of Guam. Requirements for the course included a self-assessment at the end of the semester. In both blended and fully online versions of the course, students' self-ratings of their performance relative to the objectives for the course were analyzed and then compared. Implications of the results for teaching and learning with technology are presented. The paper includes recommendations for future research as well as for optimal practices in teaching.

### **Background**

Chute, Thompson, and Hancock (1999) provide a comparison of 20th century and 21st century learning environments, as follows: 20th century learning was characterized by homogeneity, by lectures, students as listeners, instructors as sources of information, and by evaluation and testing; and 21st century learning is characterized by diversity, dynamic content, students as collaborators, instructors as guides, and by performance as the metric of success.

Although technologies cannot transform poorly informed or unmotivated teaching into good teaching, there are great new opportunities to move from instructor-centered to student-centered learning: which shifts the instructor's role from the source of all knowledge to a guide in the process of learning (Wong, Habibah, Ahmad, Kamariah, & Tang, 2003).

### ***Computers have infiltrated human life***

"Computers are everywhere," as Beekman (2005) has pointed out, "and our lives are affected in all kinds of ways by their operation—and non-operation. It is amazing that computers have infiltrated our lives so thoroughly in such a short time" (p. 33). As the future looks increasingly

digital, wireless, and net-worked, the notion that a traditional classroom instruction, by itself, is no longer adequate for higher education teaching and learning, has considerable merit. Institutions of higher education now must address “changing expectations associated with the quality of the learning experience and the wave of technological innovation. Those who have grown up with interactive technology are not always comfortable with large lectures as an approach to transmitting information. Students expect a relevant and engaging learning experience” (Garrison & Vaughan, 2008, p. ix).

Technological innovations have provided students with new options, and it is imperative that course designs reflect both students’ and instructors’ expectations of higher education (Bedi, 2006). Bedi argues that to maintain the quality of online courses, the instructor has to perform a multi-faceted role, providing “human” elements in the process of online learning. To the extent that face-to-face interactions produce quality instruction, many academics believe that online learning places the instructor at an inherent disadvantage. Bedi maintains, however, that in partially or fully online courses, instruction requires a somewhat different set of skills than face-to-face instruction, and that, given those skills, instruction can meet all of the instructor’s and students’ goals. Online instruction becomes a *production* in which the instructor plays the roles of producer, director, and leading actor. Students’ levels of satisfaction with online learning environments, and their reflections, may be important contributors to the success of blended or fully online courses.

### ***Online learning with a course management system***

The University of Guam has over 150 courses delivered either in blended (hybrid) or in fully online format. More than 75 faculty and 2000 students are now actively involved in these courses. Given that the University maintains enrollments of 3500 students, the majority of its students now have experience with online learning environments. As faculty and students in blended courses realize, online approaches to learning can supplement and enrich classroom-based instruction. It is no longer necessary to use lectures simply to transmit information. The University’s blended and online courses use an open source Course Management System (CMS) called the Modular Object-Oriented Dynamic Learning Environment (Moodle), which is a server-based software package designed to allow the instructor to provide online students with collaborative activities, critical reflections, and learning resources. Moodle was selected because of its flexibility, efficiency, and cost-effectiveness, in addition to its user-friendliness. Moodle, in fact, “has evolved into one of the most widely-used Learning Management Systems in the world, with over 35,000 installed sites and 25 million users” (Moore & Churchward, 2010, p. 1).

## **Self-Assessments from Blended and Fully Online Courses**

### **Description of the Course**

The introductory graduate research course reported in this study provides an overview of the concepts and applications used in educational research, with a focus on knowledge of research methods necessary to obtain valid and reliable results or outcomes as solutions to educational problems. Students in the course are exposed to techniques that will enable them to understand and enhance the procedures of scientific investigations as they apply in educational settings.

The course syllabus provided details of (a) the instructor's learning objectives; (b) the assignments; and (c) how mastery would be assessed. For two years (from Fall 2008 to Spring 2010), the course was offered using a Moodle-based blended format, incorporating classroom instruction (35%) and online instruction (65%), and thus, reducing face-to-face classroom lectures and tutorial time.

The three main tasks of *online* instruction in blended (and fully online) versions of the course are: (1) to provide students with guidance for their weekly online exercises, readings, discussions, and submissions of assignments; (2) to provide feedback on online assignments; and (3) to provide answers to students' daily online questions. The fully online course was initiated in the fall semester of 2010. The fully online version was also a Moodle-based course with integrated communications provided through Moodle, along with tutoring via telephone and e-mail. Although the course changed from a blended to a fully online format, the instructor, the textbook, and the learning objectives, the coursework, and the systems for evaluating student performance were the same in both blended and online courses.

By employing an active learner model and a constructivist approach—demonstrating new knowledge to the learner and revisiting prior knowledge and experience as a foundation for new knowledge—the course emphasized three instructional methods: (1) active demonstrations of skills; (2) student-centered learning based on active learning and cooperative interaction; and (3) encouraging students' progressive mastery of skills by providing them with many opportunities to practice and to apply what they learn. To optimize practice and students' abilities to learn from each exercise, the instructor provides timely feedback. Moodle-supported components of the course in blended and fully online versions are categorized in Table 1.

**Table 1. Moodle Features and Learning Activities (Source: Adapted from Ko & Rossen, 2004)**

Categories	Learning Activities	Moodle 'Building Blocks'
Instructor presentation	This includes lectures, simulations, charts, and graphs, as well as computer assisted presentations using tools like PowerPoint slides.	<i>News Forum</i> -- Instructor's welcome message <i>Resources</i> -- PowerPoint slides for each week's lecture
Discussion	Guided discussion is common format for discussion. In seminars, instructor presentation and discussion are often combined.	<i>Forum</i> -- Students participate in a weekly online discussion as well as a weekly online exercise
Group-oriented and individual projects	Collaborative activities are included here, in addition to group and individual projects presented to the entire class.	<i>Assignment</i> -- Students work on weekly assignments and submit online
Research	Research may be conducted either by individuals or in groups (e.g., practical applications, fieldwork, and interviews).	Students develop and submit their research proposal online
Assessment	This involves exams, essays, and projects; portfolios that combine different types of work; and evaluation for participation.	Scoring guidelines and rubrics are used; all assignments are submitted online and are graded via Moodle

### **Blended Learning**

This assessment, addressing ten areas derived from the learning objectives, was conducted as a summative evaluation. Although 31 students registered for the course, two students dropped in the middle of the semester. The remaining students (N = 29) anonymously rated the degree to which they agreed with each statement (5 = very much, 4 = much, 3 = some, 2 = little, and 1 = very little). Table 2 indicates the mean (M) and standard deviation (SD) for each area.

According to their mean ratings, students felt that they had achieved the most in the areas of:

- (1) “knowing how to get research materials through the Internet” (M = 4.72; SD = .45);
- (2) “knowing the purpose and process of reviewing literatures” (M = 4.59; SD = .68); and
- (3) “knowledge of APA style writing” (M = 4.28; SD = .77).

Throughout the course, students submitted all assignments to the Moodle Web site, creating files and participating in weekly online discussions. At the end of the course, students also submitted a one-page narrative evaluation of their experiences, including their opinions regarding future trends in online learning. Representative student reflections are quoted below.

- I was reluctant to take this course, but this blended course gave me the opportunity to experience online learning and eventually to become familiar with fully online courses.
- All the assignments were communicated and administered through the Internet using Moodle, which helped us to create effective online learning communities.
- Blended learning worked well for me. I studied at my own pace and submitted online assignments. Feedback from the professor was always prompt for each assignment.
- The only thing that I had trouble with was Internet connectivity and occasionally the submission files did not go through. Sometimes the e-mail system was still not reliable.
- If I had questions, I could e-mail the professor. But I need the structure and strict demands that regular courses usually entail. It is difficult to find the motivation for studying.
- Blended learning provides an opportunity. It gives us a chance to experience both a classroom way of learning and online learning. It gives us the best of both worlds.

### **Fully Online Learning**

Thirty students registered for the course but four students dropped in the middle of the semester. At the beginning of the semester, 21 students indicated that they had never taken an online course before; the remaining nine students had. When asked about the advantages of taking this fully online course, their answers were as follows (note that they selected all that apply): it fit their time schedule better than a face to face class (28 students); it fit their learning style better than a face to face class (7 students); it fit their communication style better than a face to face class (3 students); spending more time with their family (3 students); keeping their job while taking this course (14 students); and transportation issues or distance from campus (10 students). Regarding their expectations for this course, 23 students said that they would like to develop skills they can apply to daily life situations such as their jobs and to their other classes.

This assessment, which addressed ten areas derived from the learning objectives, was conducted as a summative evaluation. The 26 students completing the course anonymously rated the degree to which they agreed with each statement (5 = very much, 4 = much, 3 = some, 2 = little, and 1 = very little). As seen in Table 2, the three areas of achievement receiving students' highest ratings were:

- (1) “knowing how to get research materials through the Internet” ( $M = 4.44$ ;  $SD = .71$ );
- (2) “knowing the purpose and process of reviewing literatures” ( $M = 4.28$ ;  $SD = .73$ ); and
- (3) “knowing the differences between primary and secondary resources” ( $M = 4.24$ ;  $SD = .60$ ).

**Table 2. Comparison of Student Self-Ratings for Achievement in Blended and Online Courses**

		Blended Learning N = 29 (Spring 2010)		Online Learning N = 26 (Fall 2010)	
Assessment categories		M	SD	M	SD
1	I understand what makes an effective researcher in education	3.5862	.68229	<b>4.1600</b>	.62450
2	I feel I have established a sense of self-efficacy in writing a research proposal	4.0000	.59761	3.8000	.76376
3	I know the differences between primary and secondary resources	<b>4.2069</b>	.77364	<b>4.2400</b>	.59722
4	I know the characteristics of both qualitative and quantitative studies	4.0345	.65841	3.8000	.60000
5	I know how to identify the research problem and to establish research questions and/or hypotheses	3.4828	.57450	<b>4.1200</b>	.72572
6	I know the purpose and process of reviewing literatures	<b>4.5862</b>	.68229	<b>4.2800</b>	.73711
7	I know how to get research materials and references through the Internet.	<b>4.7241</b>	.45486	<b>4.4400</b>	.71181
8	I know all the necessary steps in conducting research studies	3.3448	.48373	<b>3.8800</b>	.72572
9	I am prepared to use a variety of research designs and methods	<b>4.2069</b>	.77364	3.9600	.78951
10	I know the APA style writing and how to cite in-text and references	<b>4.2759</b>	.64899	3.6800	.69041

### Implications of the Results

The areas in which students in each version of the course felt they had achieved the most, ranked by mean ratings, appear below. (Note that the five top areas are listed below, yet the mean scores of two areas for blended students tied at the fourth rank.)

<i><b>Blended Learning</b></i>	<i><b>Fully Online Learning</b></i>
1. getting materials through the Internet	1. getting materials through the Internet
2. knowing the literature review process	2. knowing the literature review process
3. knowing the APA style writing	3. knowing primary and secondary resources
4. knowing primary and secondary resources	4. knowing what makes an effective researcher
5. using a variety of research designs	5. identifying research problems and questions

### ***What I do, I understand...***

Three areas—“getting research materials through the Internet”; “knowing the purpose and process of reviewing literature”; and “understanding the differences between primary and secondary resources”—received high ratings in both versions of the course. The University library tour helped students in the blended course to increase their skills in using library resources, both print and electronic: including primary and secondary resources. In the fully online course, in lieu of the library tour, the University provided distance education library support, including access to the library’s databases from off-campus, and this support may have enhanced their skills in using the Internet. These results provide additional evidence for Frank, Lavy, and Elata’s (2003) proposals that human beings are active learners who construct knowledge based on their experience and on their efforts to give meaning to that experience, and that *doing* (e.g., hands-on practice, and interactive workshops) is important to learning. The results are consistent with theory and with the well known Chinese proverb: *What I hear, I forget; what I see, I remember; but what I do, I understand*” (Learning Quotes, 2007). Even in fully online courses, it may be that the instructor’s approach, incorporating *active* teaching, for *active* learning that enhances *active* reading (with students fully attending to the message), supports students in engaging the course.

### ***Approaches used to achieve the learning objectives***

If data from this sample are representative, students in blended courses may tend to assign higher ratings overall to their levels of achievement than do students in fully online courses. However, certain specific areas such as “understanding what makes an effective researcher in education,” “knowing how to identify the research problem and to establish research questions and/or hypotheses,” and “knowing all the necessary steps in conducting research studies,” were rated much higher by students in fully online courses than by students in blended courses. Enhancing these areas requires “careful” reading: reading the textbook and other supplemental materials thoroughly.

Students in the online course were asked to list at least two approaches they used to achieve the course learning objectives. Approaches typically listed include: reading carefully not only the textbook but also online materials provided by the instructor; reading empirical research and evaluation research studies published in journals; attending conferences to listen to research presentations; accessing the University library’s database and references; reading articles posted online that were written in APA style; discussing the material with classmates through Moodle or e-mail; e-mailing the instructor for clarification and better understanding; and practicing each part of the research process by working on each assignment thoroughly.

### ***Online students read and write more...***

It appears that students in online classes are more willing actively to engage both their peers and the instructor than are students in blended classes. It also appears that online students read and write more than blended students do. Challenges for online instructors include tailoring teaching strategies to the needs of individual students, and finding ways for technology to enhance the student’s ability to read, write, reflect, and synthesize course materials. Instructors who are successful in mentoring student-teacher communications utilize a variety of techniques or materials to create a more positive online learning environment (Lawhon & Ennis-Cole, 2005).

The most daunting challenge for online faculty may be the substantial increase in time that faculty must commit to course preparation, to grading and feedback, and to interaction and support (Travis & Price, 2005).

### ***Moodle as an instructional tool***

If instructors can enhance first-time online students' levels of satisfaction with their first experiences in an online course, then the instructors will have a good chance of keeping them for subsequent online courses (Kelly, 2007). With this insight in mind, the online course reported in this study was implemented based on the three factors described by Kelly (2007): (1) *clear communication policies*, given that the syllabus clearly stated how frequently the instructor would communicate; (2) *a regular schedule*, in that weekly exercise materials were provided, given that many students dislike self-paced courses; and (3) *updated grades*, given that students who cannot see their grades throughout the course are less likely to be satisfied with the final grade (Moodle shows each student's updated grade at any time). It should be noted that students in both versions of the course felt that Moodle was easy to use, and appreciated the way that Moodle presented materials week by week, and how they could upload their assignments to the server, which were then date-stamped. It should be also noted that students in both versions of the course felt that finishing assignments in a timely manner was a real challenge. The course organization, including weekly activities and readings, was very important, as voiced by this student: "This course is my first ever online class. The outline of the course helped me a lot. I am also grateful for the resources that the instructor provided. Such resources made it easy for me to follow along and were very helpful supplements of the textbook."

### **Summary and Conclusions**

Benefits from courses similar to those described in this study will attract increasing numbers of institutions, not just those that happen to have large proportions of tech-savvy faculty and students. Yet, those institutions may expect some resistance from otherwise well-educated faculty members who pride themselves on their other skills in communication, and from students. Given that using technology as a teaching tool requires fundamental changes in how one approaches and facilitates a course, many faculty members more comfortable with traditional classroom-based teaching are reluctant to take the plunge. Many students who are unsure of their computer skills feel the same way about technology-based learning. There is no denying that teaching and learning in a course like those described here require familiarity with the technology involved.

However, there is also nothing unique about this requirement: increasingly, good computer skills are a necessity of professional survival, just as reading and writing are. To take one example, the U.K. Government's White Paper, titled *21<sup>st</sup> Century Skills, Realizing Our Potential*, identifies skills with information and communication technology as acknowledged as essential "skills for life," on a par with good reading and math skills (NIACE, n. d.). There is another important parallel between technology-based skills and reading and writing. Just as reading and writing can be improved with practice, technology-based skills improve with practice.

Given that increasing percentages of college courses will be taught partially or completely online, how can the transition be optimized? One way is to compare the core values of blended and

online higher education courses with their outcomes, in order to improve the design of these courses. To enhance and maintain high quality online instructional practices, it is essential for instructors to develop and implement assessments that evaluate the effectiveness of the online teaching-learning process.

A second way involves instructors learning from what students find involving and satisfying. It does appear that factors contributing to student satisfaction in online courses are associated with the quality of online instruction, the instructor's feedback to students, and especially quality of relationships with the instructor. This study supports the principle of an online instructor who not only becomes a facilitator of learning but also a motivator for students.

Learning is most effective when embedded in the pursuit of intrinsically rewarding activities. Self-directed learning and self-monitoring promote learning and achievement, and are essential for online learners. For this reason, though student self-assessments as reported in this study cannot be the only measure of success, they are among the most useful indices of success.

### **Recommendations for Future Research**

This study has described some ways in which technology allows instructors to promote student-centered learning, rather than curriculum-centered learning. Though feedback on students' performance generally originates from the instructor, students can also play an important role in the learning and assessment process through self-evaluation, and they learn most when they accept responsibility for their own learning. To promote these goals, the author offers the following three recommendations.

#### **Including both formative and summative self assessments**

Only summative student self assessments were conducted in the course reported in this study. Formative assessment is tightly linked with instructional practices. Instructors need to consider how their activities, assignments, and tests support learning goals and allow students to communicate what they know, then use this information to improve teaching and learning (Boston, 2002). Formative student self assessments should be conducted to modify the content of the course so that students can get maximum benefits from their learning experiences.

#### **Including criteria-referenced self-assessment**

Criteria-referenced self-assessment is viewed as a process in which students collect information about their own progress. Andrade and Valcheva (2008) argue that criteria-referenced self-assessment must be a formative type of assessment, done on drafts of works in progress. It should not be a matter of determining one's own grade; instead, the purposes of such self-assessments are to identify areas of strength and weakness in one's work, in order to make improvements. The corresponding rubric is a document that lists criteria and describes varying levels of quality, from excellent to poor, for a specific assignment. As Andrade and Valcheva note, a good rubric describes the kinds of mistakes students tend to make, as well as the ways in which good work shines: giving students valuable information about the task they are about to undertake, and taking the guess-work out of understanding what counts as high quality work.

### Design research supplying empirical evidence

Any future research should focus on developing online learning environments that include content and styles of delivery that promote learning, while also engaging a diverse student population. One major concern in online learning is the lack of empirical evidence for learning enhancement (Macdonald, 2008). To effectively utilize open-source CMSs (such as Moodle), design research is important (Reeves, Herington, & Oliver, 2005). The instructor has to keep in mind two design principles: (1) to make sure that course objectives are defined in terms of the desired learning outcomes; and (2) to make sure that all activities, assignments, and assessments are aligned with those learning outcomes (Ko & Rossen, 2004). As emphasized by Reeves et al. (2005), design research requires that instructors should define pedagogical outcomes and create learning environments that address them, emphasize *content* and *pedagogy* rather than *technology*, and modify the learning environments until the pedagogical outcomes are reached.

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*Does a Transnational Campus Fulfil Its Academic Purpose?*

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0019

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

Much has been written about various forms of transnational education, some of them greatly concerned about the problems but few making any real analysis of how the students and staff concerned feel about such enterprises. This paper investigates the degree to which key stakeholders are satisfied with the academic achievements of students in a transnational education campus. Questionnaires were completed by past and present students, local staff members, and the course coordinators at the home university. The questionnaires attempted to gauge the satisfaction of the stakeholders with particular regard to the relevance of the courses, the implication of a multicultural campus, the communication between the international campus and the home university, and the academic quality insofar as it met the demands of the course coordinators. This research revealed that, although there were some problems which require addressing, in general, most stakeholders were happy with the way the international campus functioned and the achievements it made. Among the issues raised, a major concern was the lack of sufficient reference to local conditions. There was a perennial problem of language, a problem which occurs with any form of multicultural education. However, the level of the students' performance satisfied most of the academics concerned. This investigation affirms the belief that transnational education is of great practical value, especially to students in developing countries. Hopefully financial restraints will not hinder the further development of such projects.

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## Introduction

Even in ancient times, ambitious students travelled to Athens or Rome hoping to improve their learning, just as today students worldwide journey to the most prestigious universities provided they have the necessary qualifications and financial backing. However, students no longer need to travel to receive an overseas education. Now the overseas education can come to them, in the form of transnational education. Within the current literature on the topic, writers (Huang, 2007; Ziguras, 2003; Yang, 2008) use the definition given by UNESCO/Council of Europe (2000) stating that “transnational education” is generally defined as “education in which the learners are located in a country different from the one where the awarding institution is based”.

Contemporarily, this process is usually at a tertiary level and thus called transnational higher education. According to the Australian Universities Quality Agency (AUQA), it refers broadly to higher education provided by a tertiary institution in a source country to students studying in another, or host, country (Baird, 2006). Other similar definitions are found in Eldridge and Cranston (2009) and Australian Education International (2009a).

Over the past decade, transnational higher education has been a rapidly growing phenomenon (Yang, 2008). Hyam (2003) claimed that the number of students enrolled in universities outside their own country numbered 1.8 million in 2000 and that it was anticipated this number could reach 7.2 million by 2025. Other projections give different figures but they all indicate a massive increase (McBurnie & Ziguras, 2001). In Europe, the Sorbonne Declaration 1998 signed by France, Germany, Italy and the United Kingdom, set out objectives to increase the interchange of students among European countries. In recent years, Australia has become a major provider of transnational higher education (Chapman, 2007; AVCC, 2003; Naidoo, 2009). According to Australian Education International (2009a), in 2007 there were 273,099 international students studying in Australian institutions. Of these, 72,282 were either entirely offshore or spent some time during their qualification offshore. This represented 26.5 per cent of all higher education international students. Maslen (2009) reported that Australian universities now operate almost 900 programs in other countries. Thirteen universities have established offshore campuses and another 24 have arrangements with institutions in host countries preparing students for study in Australia or running degree courses under the Australian university's academic control. Apart from the publicised revenue in 2009 gained from overseas students studying in Australia, estimated at \$15 billion, a further \$505 million was earned from offshore education (Australian Education International, 2009b). However, “it is clear that transnational education is past its rapid growth stage, and to be successful from this point forward, Australian universities are going to have to pay closer attention to the needs of both their partners and the student cohorts” (Heffernan et al. 2010, 34).

Although much has been written about this educational phenomenon, there does not seem to be a corresponding amount written on how stakeholders feel about its educational effectiveness. What are its benefits? Have the programs been successfully delivered? If what Heffernan has written is true, then this investigation may give some idea of how some international students feel and what they are expecting of a transnational education.

The question of quality control of transnational education is important both for public tertiary institutions and private providers. There is now a wealth of information on trends and advice on quality assurance for transnational education (McBurnie & Ziguras, 2006; UNESCO IIEP, 2006; Yang, 2008; Pyvis & Chapman, 2008; Saarinen, 2008; Mok 2008; Sérgio, 2002). This

matter is one of universal concern. Even in 1999, the Bologna Declaration which was signed by 29 European countries stated that one of the set of specified objectives is a European dimension in quality assurance, with comparable criteria and methods (European Commission, 1999).

There are many different forms of transnational education (Mok & Xu, 2008; Huang, 2003; Naidoo, 2009; Heffernan et al., 2010). This article investigates a transnational higher education campus established by an Australian university in a second country attended by local students and students from other countries. The country in which the campus was set had two local ethnic groups who lived according to quite different cultural mores: one being the indigenous inhabitants and the other descendants of people who settled there more recently. Students from these two groups, together with international students especially from China, attended the campus. The campus offered both Bachelor and Master degrees in business and information technology/information systems. Most management positions on the staff were held by Australians. Most of the academic and administrative staff were locally recruited. There was a core of full-time academic staff but much of the teaching was done by local sessional staff.

## Method

To gain a comprehensive picture of students' degree of satisfaction with the courses offered and their academic progress, an ethics clearance was obtained from the appropriate university and three different questionnaires were given to: a) students; b) campus teachers; and c) course coordinators located in Australia. It was anticipated that each of these groups would view the campus from a different perspective. The students would be naturally concerned with their own progress. The local teaching staff were in a different situation from most higher education academics as they were aware of the students' reaction to the courses and were also aware of the reaction from the course coordinators in Australia. The course coordinators were not only concerned about the students but about the way the courses were delivered and the maintenance of academic standards.

On the surface, all the stakeholders appeared to be reasonably happy, but in order to gauge the level of satisfaction amongst the stakeholders, this investigation was carried out. The questionnaires used enabled the respondents to express their satisfaction or dissatisfaction by circling one of five reactions: 1) very strongly agree, 2) strongly agree, 3) agree, 4) disagree, 5) uncertain. To allow all the stakeholders to further express their opinions, each question was followed by a space where they could make further comments.

The survey for the students was carried out in several randomly-chosen classes on a voluntary basis and administered by a member of staff. It involved 10 per cent of the entire local campus population, equally shared across the disciplines. The questionnaire for the local teachers was given to those members of staff who voluntarily agreed to take part and was later collected by a member of staff. The questionnaire for the course coordinators was presented by email again on a voluntary basis. The response rates were shown on Table 1.

**Table 1: Response rate to questionnaire**

Respondent	Distributed	Received	Response Rate
Students	100	65	65%
Local teaching staff	30	15	50%
Course coordinators in Australia	25	15	50%

## **Results and Discussion**

### ***Evaluation of courses***

There was unanimous agreement amongst the campus teachers that the courses were relevant to local needs. Students were more divided, some being very enthusiastic and a small number expressing doubts. Most of the student criticism was regarding information technology (IT) courses which some students thought were too theoretical.

Some students supported the idea that there should be more local content, whereas other students were pleased with a more global perspective. This was particularly relevant in giving examples of topics discussed in the textbook. Some students would have liked examples from the host country or from Asian countries. The campus teachers also suggested that the studies were based exclusively on Australian or American scenarios, especially in the case studies. Some of them felt that the lack of relevance to the local scene tended to make the students less interested. The idea of the inclusion of local content was also supported by some course coordinators but they realized the difficulties of maintaining equitable standards with students at the home university. It was pointed out that campus teachers were quite free to relate the studies to local content in terms of examples if they so wished.

### ***Evaluation of assessment methods***

Students were generally happy with the way in which the assessment process worked. Language problems and the lack of feedback were the major criticisms. Students felt that discussion of marked assignments could have been helpful. IT students complained that there was not enough relationship between the textbook material and the assessment questions. Some students found it difficult to understand what was required in the assignment questions. International students appeared to be slower in doing research because of their lack of reading skills in English. The students found that too much research was often required for the time given.

On the other hand, 25 per cent of the course coordinators were not happy with the assessment methods because they felt the marking by the campus teachers was too lax and that the deadlines were not always met. In contrast, the campus teachers were generally satisfied with the quick feedback from the university and felt that the moderation appeared to be reasonable and fair.

### ***Evaluation of students' capability***

In this case "capability" means that the students felt that they could handle the courses. The students were the most confident group, most of them agreeing, but only a small number enthusiastically. About 10 per cent doubted their ability. Most of the campus teachers deemed the students capable of handling the courses but about one third disagreed. The course coordinators registered the same degree of agreement. Some students found that the courses were too technical and others struggled to come to terms with the Australian scenario on which most of the courses were based. Lack of analytical skills and expensive textbooks also contributed to the problem.

Twenty (20) per cent of the campus teachers thought that the students' English language skills were inadequate. Questions in assessments were sometimes couched in colloquial terms which would make them more attractive to native speakers but very confusing to second language speakers. However, most of them agreed that written assignments were reasonably well done. There was a general lack of research skills and analytical skills. The campus

teachers agreed with the students that the textbooks and the courses were both focused on an industrial scene with which they were not familiar. Course coordinators generally agreed that the work presented by the students was of a standard equal to the work done by international students at the home university. They mentioned that cultural differences were an important factor affecting the work done by the students. This worked both ways. Course coordinators lacked a deep knowledge of the students for whom they were responsible and there were many issues in the course which the students often did not understand because of their lack of understanding of Western culture.

### ***Evaluation of students' attitude***

Campus teachers were divided in their opinion of how interested the students were in their studies. There was not a great deal of enthusiasm apparent in supporting this question and almost half felt that the students were not genuinely interested. It appeared generally that students were more motivated by the desire to gain a pass in the subject than they were in actually learning about the subject. Students were more likely to attend classes when assignments and tests were coming up.

### ***Evaluation of campus teachers***

The campus had a variety of teachers, some from Australia either appointed by the university or recruited from Australian, New Zealand and USA residents within the country, but the majority from the main ethnic group and the immigrant ethnic group. English was spoken with a variety of accents. Consequently, some students found this quite a challenge. Yet the students appeared to be very happy with their teachers, the majority of them (57%), expressing their approval strongly or very strongly. A handful of students were critical of the commitment and the depth of knowledge of some teachers.

A majority of course coordinators were happy with the campus teachers. They felt that most of them maintained good communication and that a few were not consistently operating at an appropriate academic or professional standard.

### ***Evaluation of course coordinators***

Campus teachers were strong in their praise of the course coordinators. They were appreciative of the support that the course coordinators gave. However, there was a feeling that some course coordinators had little idea of how the campus operated. The course coordinators themselves admitted they were generally not well informed about the campus conditions, nor about the culture of the country. A large group was happy with and interested in the campus but there was a small group who were sceptical about the whole concept of transnational higher education.

### ***Evaluation of student support services***

There were formal English language programs which provided instruction to those students who sought it. Teachers were prepared to discuss individual problems and difficulties, usually related to study. Staff members, especially senior staff members, could be consulted on more personal problems. Generally speaking, the campus had an open approach. Consequently, students were generally happy with the student support services. Unfortunately, many students, especially the international ones, preferred not to take advantage of these services.

### ***Evaluation of resources***

Students were less happy with the resources available with 41 per cent saying that they were inadequate. Students considered there were too few books in the library. They found the Internet services were unreliable and slow. There were not enough computers and the maintenance of these was not satisfactory. Campus teachers admitted that the library was small and complained that many students had difficulty accessing information electronically. This was in part a problem of the country itself. There were other technical problems. Similarly because of the inadequate local infrastructure, the staff often complained of problems of connection with the university. Email service was not reliable. The inadequacy of the IT system also caused problems for the course coordinators since it interfered regularly with communication. These resources were obviously not the equivalent that would be offered in the home university.

### ***Evaluation of cultural diversity***

As explained before, the campus was attended by local students, a large group of Chinese students and students from other countries such as Vietnam and Korea. The staff also were a multicultural group with local teachers as well as teachers from Australia, New Zealand and the USA. Hence the students were involved in a campus where cultural diversity was very evident. Cultural diversity is a factor of modern life and the extent to which it affects both education and the workplace is a subject of much modern research (Ely & Thomas, 2001; Ogbu, 1992). A large majority of the respondents were obviously very happy about the cultural diversity of the campus and felt that it presented no major problems. In fact, they felt that it made for a more interesting environment. Campus teachers found the cultural diversity challenging but not problematic. The major difficulty was one of language.

### ***Evaluation of other issues***

Over 80 per cent of the students agreed that study at the campus fulfilled their expectations and 74 per cent of the campus teachers felt that there were no serious problems in the delivery of the courses. There were, however, other issues raised. Most students saw the campus as a stepping stone to furthering their education in Australia. There were political issues that affected the campus. These were mostly dealt with by the local administrative staff. Another issue raised was the question of autonomy. It was felt that many of the decisions affecting the campus could have been made locally. Too many issues were resolved by the university in Australia, making the decision-making process slow. It would seem that a major problem for course coordinators was their lack of knowledge about the host country and of the culture of the various groups of students with whom they were dealing. Communication between the campus and the university had its difficulties such as the different time zones. Course coordinators often seemed not to understand the difficulties under which the campus staff worked.

### ***The implications for transnational education***

The main impression from these findings is that such an example of transnational higher education can work to the satisfaction of all concerned. The campus appears to have fulfilled the needs of most students involved. Campus teachers were also satisfied with the work of the students as were the course coordinators in the university. It is to be remembered that this was a campus in a poorer country and that the problem of IT infrastructure is still likely to be a challenge when a metropolitan university ventures into one of the world's poor countries.

Yet, such countries are possibly the ones with greatest need for help from universities in the more affluent countries of the world.

### ***Conflict between quality and profit***

One of the problems with this form of education is that at its root it has a dual purpose: making money and providing an education. As a result of the demand for transnational education, unscrupulous entrepreneurs have established sometimes shoddy learning establishments providing doubtfully valuable educational or vocational courses. On the other hand, many worthy education institutions have welcomed the advent of international students to help them to balance their budgets. Such institutions very carefully try to ensure the quality of the courses they offer. Some academics would probably argue that it is the Australian government's responsibility to adequately fund higher education and that universities are places of higher learning, not profit-making businesses. They would further argue that education for profit is incongruous with the belief in universal access to education. Believing this to be true, a number of Australian academics are apathetic towards, even if not directly opposed to, transnational education for profit (Shanahan & McParlane, 2005). There seems no doubt that what is required is the assurance that, despite the aim of receiving enough revenue from transnational education students to keep the universities running, there also needs to be an assurance that the quality of the university courses is maintained.

In Australia, AUQA is responsible for auditing the quality of Australian universities, including their activities offshore. A 2006 AUQA report asserts that as Australian institutions enter a mature phase of transnational education, it is to be expected that quality auditors will raise the bar. AUQA is aware that the financial question is a sensitive one as it would not wish to embarrass an Australian higher education institution with a negative audit as it might damage the attractiveness of Australian higher education (Carroll & Woodhouse, 2006). A media release (Ministers' Media Centre, 2009) by the Honourable Julia Gillard MP indicated that \$57 million over four years was to be invested to establish a new national quality and standards agency, the Tertiary Education Quality and Standards Agency, which among other things would work with the higher education sector to develop objective and comparative benchmarks and to carry out rigorous audits. This body will accredit providers and protect the overall quality of the Australian higher education system.

In the replies to the questionnaires already discussed, it was noticeable that most students and staff were satisfied with the courses and the standard of the work done by the students although not ecstatically delighted. One way in which universities can maintain satisfaction in an offshore program is to see that there is regular contact with the home university. If possible several staff from the university should either work at the venture or visit it regularly. When one recognizes that international students have difficulty finding the requisite money for fees and accommodation and that often this money is secured as a result of much sacrifice on the part of their family, one feels even more committed to the idea that they be treated justly. This means that the education they receive will be worthy of the sacrifices made.

### ***The need for local consideration***

Students were equally divided when asked whether more local content needed to be introduced to the courses. Some could see the problem of maintaining equity with students in the home university. Others realized the advantages of knowing more about their home economic environment. Others suggested that campus teachers should relate what was learned in the classroom to local conditions as much as possible. Some would have liked scenarios within their own community to be used as examples when appropriate theory was

introduced. Other students suggested field trips to visit local companies and factories. Campus teachers realized that the course was very dependent on the Australian economic situation which was of little interest to the students. Course coordinators were aware of the problem but felt that it was up to the campus teachers to relate what was read in the textbooks to the local situation.

Another aspect of cultural relevance is the actual difference in the way in which people learn and the relationships developed in the classroom. Claims are made that natural cultural differences create complications in terms of the pedagogy, the assessment procedures and the social aspect of the transnational education programs (Rambruth & McCormick, 2001; Eldridge & Cranston, 2009). Even in a mono-cultural classroom, students will have different methods of learning. In a multi-cultural classroom, this problem is magnified. Within the campus being discussed, there were at least three different racial groups with different traditions of learning.

Cultural diversity also has implications for management theory. Eldridge and Cranston (2009), speaking of transnational education partnership between Australia and Thailand, assert that the impact of national cultural difference can be varied and potentially substantial in consequence and should therefore be given considered thought in any transnational education partnership. There are actually two different aspects to this matter of cultural relevance. For any institutions wishing to engage in a transnational educational venture, a university needs to consider how well the courses offered suit the cultural environment of the country to which it is being presented. But care also needs to be taken in ensuring that cultural matters are reflected in the classroom situation (Dunn & Wallace, 2008) and in the management of the local campus. This can become a problem when the people in charge of an institution come from another country. People are inclined to reinforce management systems with which they are familiar, although these may not be highly regarded by the local staff who work in the institution. In the campus described in this paper, not only were the senior members of the academic staff from overseas countries, but the administrative staff and many of the teaching staff were local people. Such a situation requires diplomacy and tolerance.

Of course, the greatest cultural diversity of all is language. In the surveys, most students seemed to think that their English was adequate and both campus teachers and course coordinators agreed that mostly the language of the students was satisfactory. Yet, there were some whose language skills made it difficult for them to make any headway. Much has been written about this topic (Black, 1991; Andrade, 2006; Galloway & Jenkins, 2005; Fakeye & Yemi, 2009). Students who pass the language examinations designed to test whether their English skills will allow them to study at an overseas university often find when they actually enter the classroom that they do not have the breadth of language skills that they really require. In other words, language entrance exams do not always show the true level of understanding of another language by the student. In fact the key lack is in their confidence. It really means a combination of better teaching programs and better testing methods.

## **Conclusion**

From this investigation, it can be seen that courses offered to international students in a transnational education should be relevant to the needs of the students. Care needs to be taken in framing courses to ensure that they do actually meet the needs of international students. The problem in some cases is how to do this without prejudicing the local student. Perhaps all that is needed is for those who plan educational courses in institutions where international

students are welcomed to be mindful of the fact that we no longer cater only for local students and that international students may have additional or different needs as well as having distinctly different backgrounds and learning habits. Heffernan et al. (2010) has asserted that in establishing relationships with overseas education providers, it is appropriate to attempt to understand the differences in culture and learning of new student cohorts.

From the inquiries made, both students and teachers regarded language difficulties as a major problem in transnational education. Although the level of education in English is rising in most parts of the world, many students attempt studies in which the English language is the vehicle of instruction without an adequate understanding of the language. Universities can take the easy course and set very high English standards for new entrance. However, there are possibly many worthy international students who do not have the opportunity to study English at a high level in their own country and yet they are intelligent and able students. It is therefore possible that some students embarking on transnational education need additional help in their English in order to complete their courses. Universities which take transnational education seriously need make provision for such students.

The findings also revealed that neither staff nor students felt that cultural diversity within the classroom presents any barrier to learning. On the contrary, the students surveyed felt that it was an enriching experience.

The investigation revealed that one feature of a successful transnational education operation was close cooperation and trust between the campus and the university. The campus teachers surveyed were very appreciative of the support given by the course coordinators. Such a degree of trust and cooperation depends on very careful planning including the choosing of enthusiastic and supportive people to carry out the work.

As far as the studies themselves are concerned, the maintenance of a high standard of quality is demanded. The intangible factors are evident but not measureable. Students who are able to afford moving to another country for their studies will obviously benefit from a wider understanding of the world and the chance to make international friendships. Those who attend overseas ventures in their own country do not have these benefits but they have gained a degree from another country without the expense that studying in a foreign country entails and they have a greater chance of being employed.

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## Appendix

### Explanation of code

VSA = very strongly agree
SA = strongly agree
A = agree
D = disagree
U = uncertain

**Table 2: Students' Responses (n=100; response rate: 65%)**

Targeted Area	Topic	VSA (%)	SA (%)	A (%)	D (%)	U (%)
Courses	1) Content of the courses was interesting and challenging	11	28	49	9	3
	2) Changes should be made to the courses to include more local content	8	17	34	34	8
	3) The examples used in the textbooks were not too foreign to my own culture to be of any future use	2	25	52	7	5
	<i>mean</i>	7	23	45	20	5
Assessment Methods	1) Questions given for the assignments were clear and well explained	0.03	0.18	0.57	0.18	0.03
	2) Questions in the examinations related well to what we had studied	0.06	0.23	0.54	0.12	0.05
	3) Feedback from the assessments helped me to see where I needed to improve	0.09	0.20	0.45	0.22	0.05
	<i>mean</i>	0.06	0.21	0.52	0.17	0.04
Students' Capability	1) The textbooks were helpful and their language was not too difficult	0.06	0.26	0.52	0.11	0.05
	2) I had no difficulties with the teaching style used at the campus	0.08	0.20	0.58	0.11	0.03
	<i>mean</i>	0.07	0.23	0.55	0.11	0.04
Local Teachers	Lecturers and tutors used language that was within my understanding	0.14	0.43	0.38	0.05	0.00
Student Support Services	Lecturers and tutors were prepared to give time to discuss individual problems	0.09	0.17	0.54	0.11	0.09

	and difficulties					
Resources	1) Library resources were adequate	0.00	0.06	0.45	0.46	0.03
	2) Internet services worked satisfactorily	0.12	0.14	0.38	0.35	0.00
	3) Computers were modern and readily available	0.05	0.08	0.51	0.32	0.05
	<i>mean</i>	<i>0.06</i>	<i>0.09</i>	<i>0.45</i>	<i>0.38</i>	<i>0.03</i>
Cultural Diversity	The cultural diversity of the classroom did not hinder my participation in class	0.14	0.25	0.48	0.09	0.05
Other Issues	Study at the this campus fulfilled my expectations	0.09	0.26	0.46	0.14	0.05

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**Table 3: Local Teachers' Responses (n=30; response rate: 50%)**

Targeted Area	Topic	VSA (%)	SA (%)	A (%)	D (%)	U (%)
Courses	Courses supplied by the university were relevant to the local students' needs	0.00	0.20	0.80	0.00	0.00
Assessment Methods	Moderation by the university seemed reasonable and fair	0.20	0.40	0.33	0.00	0.07
Students' Capability	1) The students' abilities were equal to the degree of difficulty of the work covered	0.13	0.20	0.33	0.20	0.13
	2) The standard of the students' English was good enough to cope with the concepts required	0.13	0.13	0.53	0.20	0.00
	3) Students' written assignments were reasonably well done	0.00	0.20	0.60	0.13	0.07
	4) Class presentations (when required) by students were well prepared and delivered	0.00	0.20	0.47	0.13	0.20
	5) Students participated well in class	0.00	0.13	0.47	0.40	0.00
	<i>mean</i>	<i>0.05</i>	<i>0.17</i>	<i>0.48</i>	<i>0.21</i>	<i>0.08</i>
Student's Attitude	1) Students appeared to be genuinely interested in their study	0.00	0.07	0.53	0.33	0.07
	2) Student attendance was regular and punctual	0.00	0.00	0.47	0.47	0.07
	<i>mean</i>	<i>0.00</i>	<i>0.03</i>	<i>0.50</i>	<i>0.40</i>	<i>0.07</i>
Course Coordinators	Help was readily given by the university when it was requested	0.27	0.27	0.40	0.07	0.00
Student Support Services	The campus showed concern for individual student's problems and generally nurtured students well	0.07	0.33	0.47	0.07	0.07
Resources	1) Online material was easily obtained	0.20	0.20	0.33	0.20	0.07
	2) Teaching aids were readily available and were suited to the students' needs	0.27	0.07	0.27	0.33	0.07
	3) Online assessment (when used) proceeded smoothly	0.20	0.00	0.20	0.13	0.47
	4) Other suitable resources were readily available	0.00	0.20	0.53	0.27	0.00
	<i>mean</i>	<i>0.17</i>	<i>0.12</i>	<i>0.33</i>	<i>0.23</i>	<i>0.15</i>

Cultural Diversity	The diversity of the students created no problems	0.27	0.13	0.53	0.07	0.00
Other Issues	There were no serious problems encountered in the delivery of the courses	0.27	0.07	0.40	0.27	0.00

The logo for the International Association of Business Schools (iafor) is centered on the page. It features the word "iafor" in a light blue, lowercase, serif font. The text is enclosed within a circular frame composed of two concentric, hand-drawn style arcs. The outer arc is a light red color, and the inner arc is a light blue color, matching the text. The overall design is minimalist and elegant.

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**Table 4: Course Coordinators' Responses (n=25; response rate: 65%)**

Targeted Area	Topic	VSA (%)	SA (%)	A (%)	D (%)	U (%)
Courses	<i>Open-ended question:</i> Do you think it is possible for a transnational higher education program to have courses modified to include local content and at the same standard as those students studying the set curriculum?	-	-	-		
Assessment Methods	1) Procedures for moderation were carried out well	0.10	0.30	0.30	0.30	0.00
	2) The standard for the marking of assessments at the campus was usually reasonable and fair	0.10	0.20	0.40	0.20	0.10
	<i>mean</i>	<i>0.10</i>	<i>0.25</i>	<i>0.35</i>	<i>0.25</i>	<i>0.05</i>
Students' Capability	Work delivered by students at the campus was equivalent in standard to work by students at the university	0.10	0.00	0.60	0.20	0.10
	<i>Open-ended question:</i> Were you satisfied with the quality of the work submitted by the students at the campus? And what do you think contributed most to it?	-	-	-		
Campus Teachers	1) The teachers at the campus maintained good communication with the course coordinators	0.00	0.10	0.50	0.30	0.10
	2) Campus teachers fulfilled deadline requirements adequately	0.00	0.10	0.60	0.30	0.00
	3) Campus teachers appeared to deliver their courses competently	0.00	0.10	0.70	0.10	0.10
	<i>mean</i>	<i>0.00</i>	<i>0.10</i>	<i>0.60</i>	<i>0.23</i>	<i>0.07</i>
	<i>Open-ended questions:</i>					
	1) Did you find the teachers at the campus generally cooperative?	-	-	-		
	2) How would you describe the enthusiasm of	-	-	-	-	-

	the teachers at the campus?						
Course Coordinators	The course coordinators are generally well informed about the conditions and culture in the campus	0.00	0.00	0.20	0.60	0.20	
Resources	There were no serious technical problems in the IT service connecting the university and the campus	0.20	0.00	0.00	0.70	0.10	
Other Issues	1) From my perception, the campus performed very well	0.10	0.00	0.20	0.60	0.10	
	2) Course coordinators are generally well informed about the conditions and culture in the local country	0.00	0.00	0.20	0.60	0.20	
	<i>mean</i>	0.05	0.00	0.20	0.60	0.15	
	<i>Open-ended question: Do you generally support the idea of transnational higher education ventures in developing countries?</i>	-	-	-			

*A Near Peer Review Task for Language Learners*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

A large, faint watermark of the iafor logo is centered on the page. It consists of two concentric, hand-drawn style arcs, one in light red and one in light blue, with the word 'iafor' in a light blue serif font in the center.

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During the last twenty or so years, language teachers have actively sought ways to increase student-to-student interaction in the L2 (e.g., The Interaction Hypothesis, Ellis 1999; Gass 1997; Gass & Mackey, 2007). At the same time, the need for corrective feedback has been recognized as essential to the L2 learning process (e.g. Li 2010). Peer correction has been accepted by many as a means to achieve both increased learner interaction and opportunities for corrective feedback in classroom settings (see for instance The British Council English Teaching Knowledge Database, accessed April 26, 2012 at <http://www.teachingenglish.org.uk/knowledge-database/peer-correction>). Although much research exists on peer correction practices in ESL/EFL settings (e.g., De Guerrero & Villamil 2000; Lockhart & Ng 1995; Mendoca & Johnson 1994), little research focuses on this practice in Japanese language classes (Ikeda 2002). Mendoca and Johnson (1994) express the need to explore what actually occurs during peer correction, particularly when used as a second language-learning task. In order to fill this gap in the literature, this study investigated a near peer review task, which is presented as an extension of peer correction tasks. Here, intermediate learners of Japanese graded the written homework of their near peers (high beginning learners) enrolled in a different class in a large university in the U.S. In analyzing the verbal interaction between the higher-level learners as they corrected grammar-focused homework of their near peers, it was found that the two participants discussed specific linguistic issues raised by the beginning level learners' responses on the homework. This study suggests the usefulness of near peer correction tasks, which allows language learners to practice their reading skills, analyze, and expand their existing linguistic knowledge.

### **Peer Review Practices and Language Learning**

There has been growing interest in second and foreign language education regarding how peer review or correction benefits L2 learners (Ohta 1995). Many aspects of L2 peer review or correction have been explored and thus led to the development of many names and descriptions of this process. For the purposes of this article, Topping's (1998, p. 250) commentary will stand as a working definition: "An arrangement in which individuals consider the amount, level, value, worth, quality or success of the products or outcomes of learning of peers of similar status." Peer review practice, also referred to as "peer feedback," "peer response," "peer revision," and "peer critique," is generally conducted among students who are in the same class (Hu 2005). Overall, the literature suggests that peer review or correction tasks can encourage learners to develop their cognitive, linguistic, and socio-affective skills. It has been suggested that learners can learn by assessing other learners' work (Hu 2005; Tsui & Ng 2000; Topping 1998;). In order to assess peers' written work, learners access their stored L2 knowledge, and this allows learners to review, reconstruct, and reanalyze their existing linguistic knowledge (Gass & Mackey 2007). Liu and Hanse (2002) surmised that in discussing their partners' products, learners share what they have learned, and get opportunities to apply and reflect on their acquired knowledge.

### **Near Peer Review VS Peer Review**

It is widely acknowledged that peer review practices serve as a valid and effective learning task. However, what if the task is conducted among near peers who possess different L2 abilities? This is the question that the current study attempts to answer. As Hu (2005) notes, peer review practices are utilized among learners who are in the same class taking the same course, dividing participants into *correcting* learners and *corrected* learners. In other words, each learner has the opportunity to correct someone else's work and have his/her own work corrected. In a near peer review practice, higher-level learners review lower-level learners' work, so this practice targets L2 learning by the correcting side (higher-level learners), not the corrected side (lower-level learners). Consequently, corrected learners don't receive much benefit from this task. This task was devised in hopes of remedying the following two problems. First, due to time constraints and

course loads, little time was allocated for review on previously learned material. Second, some students have difficulty understanding complex grammatical concepts that require a solid grasp of basic Japanese grammar (and are often covered in a first-year Japanese course).

## **Method**

### **Participants**

The participants were two female students who were taking a second year Japanese course in Fall, 2011 in a large central U.S. university. The author was not teaching the participants at the time. One participant was 23 years old (Participant “C”) and the other (Participant “R”) was 20. Participant “C” is a native speaker of French although her English proficiency was high enough to engage in undergraduate study at the university. Thus I operated under the assumption that for this project, her L1 is English. Participant “R” is a native speaker of English. The participants were asked to grade the first year students’ homework because it was felt it would be a useful learning experience for them and because they had the L2 skills and knowledge to grade the homework fairly and appropriately. The participants’ then-current instructor indicated that their Japanese proficiency levels were high in terms of performance in their second year classes.

### **Materials and Procedure**

The materials consisted of an audio recording and the resulting transcript of that recording. The interaction of the two participants engaged in the near-peer review task was recorded for 100 minutes. Both participants were aware that their interaction was being recorded. The researcher was not present during the task. The participants were not provided any instructions besides being asked to grade the homework without using an answer key. The interaction between the participants was transcribed verbatim following the conversation analysis transcription conventions appearing in Wong and Zhang Waring (2010). The participants were not told what language to use while reviewing the homework of their near peers.

The participants graded the homework of seven U.S. undergraduates in a first year Japanese class at the same institution. The homework consisted of two sections from the workbook *Genki I* (Banno, Ohno, Sakane, & Shinagawa 2000), a text and workbook series commonly used for Japanese instruction in the U.S. The homework comprised translation items and the production of Japanese sentences based on several pictures. The names of the first year students were hidden to protect their privacy.

### **Analysis**

To investigate how two learners work on the task, a fine-grained transcript was developed. The transcript was reviewed three times without looking for any specific communicative functions following Mercer’s (2010) caveat. The transcript was developed carefully by listening to the audio file multiple times and adding emerging details about what was said and how. There was a one-month interval between each iteration of transcription and analysis. As the analysis process went on, several features of the participants’ talk became salient.

## Results

### Read the written Japanese sentences out loud

The transcript revealed that the participants read the written Japanese sentences out loud from the homework to catch errors. Generally, if a participant found an error in a sentence, she made a comment or stated the correct answer and then moved on to the next sentence in the homework.

47 R: .hh arewa nan arewa >nandesuka< alrigh (1.0)

48 C: minus one cuz ah: (0.5) ah .hh yes (2.0)

49 R: kono tokeiwa ikura. un ikuradesu↑Ka: (1.7)

50 C: °Takeshi [desu° {J=1}

51 R: [sono tokei↓wa >ikura desuka.:< kono what is this (4.6)

At line 47, participant R reads over the sentence out loud and confirms the answer by stating “alrigh.” At Line 49, participant R notices an error, the missing particle *ka*, so she emphasizes what is missing in rising intonation.

64 R: ano to wh[:at. (2.0)

65 C: [(denwa arimasen)] (0.4)

66 R: OH tokei wo

At line 64, the R cannot decipher the word (*ano to*) as she says *wh[:at* followed by a two-second pause. After this, participant R demonstrates her understanding at line 66 by saying *OH*. In this case, the participants were reading the L2 sentences, although this sequence showed participant R using the L1 to initiate a repair sequence (*wh[:at*) of the trouble source). In terms of L1 and L2 selection, the participants read sentences in Japanese first, and when they found possible errors, or thought of questions or something interesting, they started speaking in English (the L1). Confirming the correctness of the answers and asking questions seemed to force them to rely on English.

### Access their L2 knowledge

The transcript provided many examples of how the two learners applied their learned knowledge in order to assess the assigned work. The following excerpt indicates how this task allowed the participants to share and reexamine their previous knowledge.

108 C: [watashi no. watashi no watashi no senko mo (0.9)

109 R: senko [mo?

110 C: [senko mo (1.0) rekishi desu

111 R: oh wait isn't that my major is also. but like referring to major also: (1.7)

112 C: oh yo so would you say watashi mo senko (0.5) No: yah watashi no senko ↑mo (0.6)

113 rekishi desu (1.2)

114 R: but I just think that when you put it after senko.: its emphasis is on the=

115 : = Wrong part.

At line 108, participant C reads the sentence aloud, and participant R finds the sentence possibly wrong at line 109. Carrying through the repair, participant R repeats the last part of the previous utterance in rising intonation. At line 110, participant C provides the whole sentence, to which participant R poses a question. This particular utterance triggers a long sequence of discussion as to what should be the correct answer. After sharing their understandings, they come to agree on the right answer as follows.

153 R: [watashimo no. no.: that sounds stupid (0.7)

154 C: so watashino senkomo rekishi desu.

155 R: yeah:: has to be:: I guess (1.0)

## Private speech to organize and reinforce learned lessons

The function of private speech is typically defined, in contrast to social speech, “as speech addressed to the self (not to others) for the purpose of self-regulation (rather than communication)” (Diaz 1992, p. 62). Examples of private speech emerged in the transcript, mostly in Japanese. The following excerpt indicates how private speech was conducted to memorize correct pronunciation of a word. Participant C tries to figure out the pronunciation of *toshokan* in lines 33 and 34 using private speech, but then participant R picks up on it and demonstrates how it should be pronounced. Following this, participant C repeats *toshokan* in lines 36 and 40, in which she strongly articulates each syllable to reinforce this learning.

33 R: [arewa toshokan de tosho toshi to::shokan. how do yo is it (1.0)

34 R: to: to::shokan {E = 1, J = 2}

35 C: To[shokan {J = 1}

36 R: [toshokan {J = 1}

37 C: yeah Toshokan

38 C: not Tosh[o:kan. but Toshokan (E = 1, J = 3)

39 R: [either way this is wrong

40 R: To.sho.kan. {E = 1, J = 3}

## Discussion

This study investigated whether a near peer review task can serve to ameliorate two issues arising in Japanese courses, namely lack of review practices and insufficient first-year Japanese knowledge. Although this study was descriptive, there were some notable observations which suggest utility of the task. First, without being told, the participants read Japanese sentences aloud in order to grade the assigned work until they found possible errors or encountered difficulties. Considering the emphasis on reading as a means to provide L2 input and experience (Al-Homoud & Schmitt 2009; Bochner & Bochner 2009), this task offers a valid way to provide ample opportunities to read and experience in the L2. Second, the task allows the participants access to their previous L2 knowledge and reexamine their understanding of specific forms. The participants discussed L2 linguistic forms they already knew by accessing their previous knowledge and defending their points as part of the near peer review task. This interaction provided an opportunity for the participants to share what they had learned and to make decisions by applying their previous knowledge even when they disagreed on solutions to “the problem” of correcting the homework of other learners (Liu & Hanse 2002). The near peer review task allowed the participants to develop and reinforce foundational Japanese linguistic knowledge; therefore, it can be a very productive and useful review task for language learners. Finally, the participants used private speech to reinforce some learned lesson amongst themselves. Sugiyama (1999) observes that a Japanese language learner repeated L2 words in peer interaction. She interprets this as the learner’s method for practicing and memorizing newly learned vocabulary. Similar instances were observed in this study.

## Conclusion

This study investigated how conversational interaction unfolded while two participants engaged in a near peer review task outside of a classroom setting. Clearly, more studies must be conducted focused on near peer review tasks and learners’ interactions as they engage in such tasks in order to make decisive comments. However, this small study delivered some intriguing insights. The study demonstrated that as two participants engaged in the task, they read Japanese sentences out loud, applied and reexamined their Japanese linguistic knowledge, and reinforced newly learned information through private speech. Considering these observations, this type of task potentially

offers a valuable review practice for language learners who could not get ample opportunities for reviewing in the classroom.

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*Multiple Language Faculties in the Minds of ESL Learners*

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Malaysia The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

This paper aims to investigate students' language faculties that form the basis of their language learning and skills. It brings into question the existence whether there is more than one faculty resides in the linguistic repertoire of excellent second language users. This quantitative study incorporated the used of corpus-driven error analysis as well as critical discourse analysis. Upon investigation, for proficient users of English (second language), they experience less language interference and are well-adapted to the natural flow of the language. They have developed specific language faculty for each language that they have been exposed to prior to the critical period. Thus, based on this research, it is concluded that there are multiple language faculties reside in the language learning repertoire of bilinguals and multilingual. It is important that such understanding of ESL learners' learning process is made aware to the teachers especially in the designs of appropriate approaches in teaching ESL classes in schools. Keyword: Language faculty, bilinguals, error analysis, critical discourse analysis, etc.

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## 1. INTRODUCTION

Phenomenon such as code-switching, code mixing, language interference, critical period hypothesis, etc – all point out, in part of the existence of Chomsky's language faculty in the mind. Though many correlates such incidents as overlapping between the learner's mother tongue and his second language system, nevertheless, some part of the theory is still vaguely or incompletely explained. While this paper is in agreement of Chomsky's notion however, it is in the interest of this research to investigate whether one language faculty is subjected to all the learner's languages in the present and even the ones he'll ever learn or is it one faculty per language?

### *1.1 Human Intelligence System: General Intelligence Governs Specific Intelligence*

Based on the theories proposed so far with regards to human intelligence, to one extreme there is the idea of a general intelligence and to another extreme, there is the idea of multiple intelligence as proposed by Gardner. Sternberg (2002) takes the middle ground with his idea of 'successful intelligence'. However, despite this many theories, not one of them could house all of the concepts and properties of human intelligence together. Additionally in terms of language faculty on the other hand, is it govern by general intelligence or does it has a specific intelligence domain as proposed by Gardner to be 'linguistic intelligence'? But if intelligence is being looked at in a different light as having a system consists of general and specific intelligence domain, then, as Gardner stated, language must be included in the latter. However in order to explain the formation and construction of language faculty in the mind, it is necessary to consider the roles of general intelligence in this matter.

Internet is a global network of computers. Using unique addresses, billions of computers connect to the internet – an abstract system – that oversees the in and out-goings of information throughout the system. Accordingly these computers are like components of multiple intelligences as proposed by Gardner – natural, linguistic, interpersonal, intrapersonal, bodily-kinaesthetic, logical-mathematical, spatial and musical intelligence with each bound to specific-specialized areas of the brain – makes up the physical intelligence system of human intelligence. Hence, the abstract intelligence system that controls the physical system is in the form of a general intelligence. While the concept of multiple intelligences has specific domains in which intelligence might apply, the general intelligence on the other hand, is "defined as the ability to balance the needs to adapt to, shape and select environments in order to attain success, however, one defines it, within one' socio-cultural context" (Sternberg, 1999). The abstract system is designed to create schemes or organization that could achieved the highest survival rates possible whereas the physical system provides the assistance needed by channelling relevant specialized expertise.

Furthermore, the abstract system is also the centre for metacognition processes, which constantly corresponds with the physical system that manages cognition processes and combined, they make up human intelligence system. However when it comes to language, Darwin's theory of natural selection can be used to explain the existence of the abstract system particularly for language, in constructing the need as well as the idea for language in human's mind in the first place. Although the existence of both system is innate but for the

physical system, it is an advantage privileged only to humans. Chomsky's (2002) and Gould's (1988) idea that language may have evolved as the by-product of selection of other abilities coincides with the concept of physical system. The abstract system orders the need for some language form in order to communicate, but it is actually the physical system that comes up with a specific language faculty in the brain. Based on Piaget's cognitive development, humans have these tendencies towards 'organization' and 'adaptation'. They construct organization of schemas to form systems to be able to understand and interact with the world. This concept of schemas formation gave rise to the idea behind physical system which responsible for learning and storing of information that ultimately, becomes a specialized expertise, such as in the concept of multiple intelligences.

Thus, if asked which aspects of the language capacity is uniquely human, and then the language faculty in the physical system is the answer. But if asked which are share with other groups of creature and then, it's the abstract system. In a research conducted by Premack and Woodruff (1978) to test the availability of the theory of mind in chimpanzees have discovered that they do have this ability to infer, for examples; purpose, knowledge, belief, thinking, doubt, guessing, pretending, liking and so forth (1978: 515). Non-human primates or other mammals that can be considered to have high cognitive level such as the dolphins do have the abstract system build into their system – they do have a basic form language for communication. However, they could never reach or achieve the linguistic ability as complex as the humans because they lack the physical system that is responsible for such specialized expertise. In a study by Fitch and Hauser (2004), they have found that the monkeys that were used as their subjects in the experiment were unable to master a grammar of higher 'phrase-structure grammar level'.

Hence, as Lenneberg proposed in his theory of Critical Period Hypothesis (henceforth, CPH), the level of exposure during a certain period of time as the child is growing up, might have jumpstarted the formation or the readiness of such faculty in the mind. General intelligence manages this exposure or data on languages in order to be able to internalize the language system to make up the ability to communicate. However, as the learner's ability gets more defined, it marks the formation of a language faculty. The research findings supports the idea that exposure before the critical age, provides the readiness or basic formation of language faculty in the learner's mind to receive language. If this can be achieved before the brain lateralized, then it might be possible to deduce that more than one language faculty exists in the human minds. Since early exposure in children resulted in better proficiency in their second language (henceforth, as L2) compared to those who did not. Hence, there is a possibility that specific language faculty for each specific language exists (including L1 or L2) as a proof to explain the reason behind lower level of interference from L1 in children with early exposure towards their L2.

### *1.2 Chomsky's Language Faculty*

Those who share the same view as Lenneberg usually believe in the idea that adults' second language learning is qualitatively different form a child acquiring first language. According to this view, the language acquisition device (henceforth, LAD) in position for a child is pre-programmed to process linguistic coding while; an adult operates using general coding ability.

Chomsky (1968) then, put forth the idea of a specific language faculty for first language acquisition which atrophies at a certain age. He hypothesized that language can still be learned, past the age-limit, by using other faculties available in the brain. Stern (cited in McLaughlin) on the other hand, proposed that language learned in adulthood is filtered through existing learning acquisition system, modified by the first language. Stern's proposal is supported by the interference argument based on errors made by individuals learning a second language.

This study runs alongside Stern's idea regarding adults using existing learning language system. If during childhood, the adults in questions were not being exposed to their L2, than no formation of a specific language faculty for L2 will take place in their minds. Additionally, as Chomsky has put it, that ability to form language faculty atrophies at a certain age.

### *1.3 Lenneberg's Critical Period Hypothesis*

Observations made on the outcomes of children acquiring second language have prompted many researchers to investigate its underlying explanations and mechanisms. When compare the result to those of adult-learners of second language, many, such as Lenneberg shared the idea that age is correlated with individual's ability to acquire and learn a second language. Children readiness and efficiency in acquiring the language, as well as their ability to reach native-like proficiency have driven many into thinking that children are born with pre-programmed or a superior biological predisposition (applies to first, second or third languages). Hence the debate is always on the comparison between adult-learners and children. However, evidence from past studies has shown that older children and adolescents do better than younger children in acquiring a second language in a natural environment (Ervin-Tripp, 1974; Snow & Hoefnagel, 1975; cited in McLaughlin's). Thus, it appears that both children and adults can acquire and learn a second language in a way that they are both being exposed to the language naturally as well as through formal instruction.

### *1.4 Corder's Error Analysis: L1 and L2*

Corder (1967) introduced the distinction between errors (in competence) and mistakes (in performance). This distinction directed the attention of Second Language Acquisition (henceforth, SLA) researchers to competence errors and provided for a more concentrated framework. Like Richard, he has highlighted the sources of competence errors in his article, "A Non-contrastive Approach to Error Analysis" (1967); as a form of L1 transfer results in interference; incorrect application of language rules in intra-lingual errors; whereas construction of faulty hypotheses in L2 results in developmental errors (Kara, 2006). Although not all have agreed with Richard's proposal, one still cannot simply diminish its importance, or rather, error analysis role in SLA research.

Moreover, the distinction of the term 'competence' and 'performance' had once, also been a focused topic of Chomsky's. He uses the term 'competence' in the same sense as the word 'grammar' which means a certain kind of language knowledge (Steinberg, 1993). Competence is the knowledge that persons have of their grammar while performance

involves knowledge for using competence (Steinberg, 1993). Since errors form systematic pattern in L2 as compare to mistakes which are unsystematic errors in L1, it shows that errors occur at the basis of language understanding of a learner. Such as the case when innate language ability (similar to Chomsky's Universal Grammar idea) enables children to acquire language at the young age of 4 to 18 months old. Through exposure, they formulate a general understanding of the principles of the language which will later on formed the basis of their schema ('internalized grammar'/ competence) when learning another language. Due to interference from L1 and other factors, their second language (performance) will never reach 100% competency as the target language.

Thus, if individuals are to relate both linguists' tabulations, it will become apparent that errors (in competence) are a significant factor in the learning of a second language. Through the identification of errors and mistakes – idiosyncrasies patterns for example – it is possible to trace the learner's nature of language faculty and perhaps answered the research question proposed at the beginning of the report. It is important to understand that it was never about the teaching as much as about the learning when it comes to language.

## **2. METHODOLOGY**

### *2.1 Research Design and Procedures*

The research design used for this study is quantitative method – percentages of errors calculated through Error Analysis process. This error analysis is a corpus-driven research. The data was collected in the form of essays writing.

### *2.2 Sample and Population*

The sample included 35 form 2 students from a secondary school in Pahang. The data was collected in the form of essays writings: 20 essays were selected randomly out of the total of 35 essays (total number of students in the class). All of the students were given the same title, "My Best Friend". The class ranks second in all of form 2 classes and their level of proficiency is intermediate.

### *2.3 Measures, Data Collection and Data Analysis*

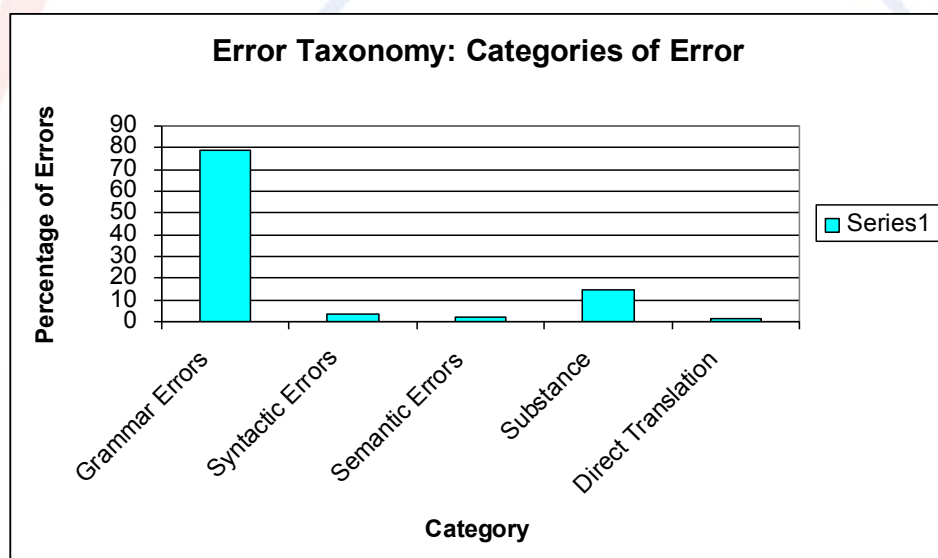
The corpus is formed by using 'Antconc'; (1) generate frequency list of words and (2) assist in finding the collocation words from the data. For the purpose of defining the error types, linguistic terms have been chosen (clear and simple) for the first stage of the analysis; noun, pronoun, verb, conjunction, adjective, adverb, preposition, article, determiner and sentence structure (if the sentence is fragmented/ incomplete). Then for the second stage of the analysis process, the classification of error type was narrowed to the use of the following terms; surface structure taxonomy: (1) Omission, (2) Addition (Double-marking; regularization; irregularization, etc), (3) Misinformation and (4) Misordering.

The corpus of students' essays were then subjected to Critical Discourse Analysis which views language as a social practice, shaped by and shaping social identities, social relations and systems of knowledge and beliefs of individuals (Fairclough, 1989). Through the combination of the corpus and the students' background information, the analyses will a more holistic result.

### 3. RESULTS AND DISCUSSION

#### 3.1 Error Analysis: Idiosyncrasies Pattern

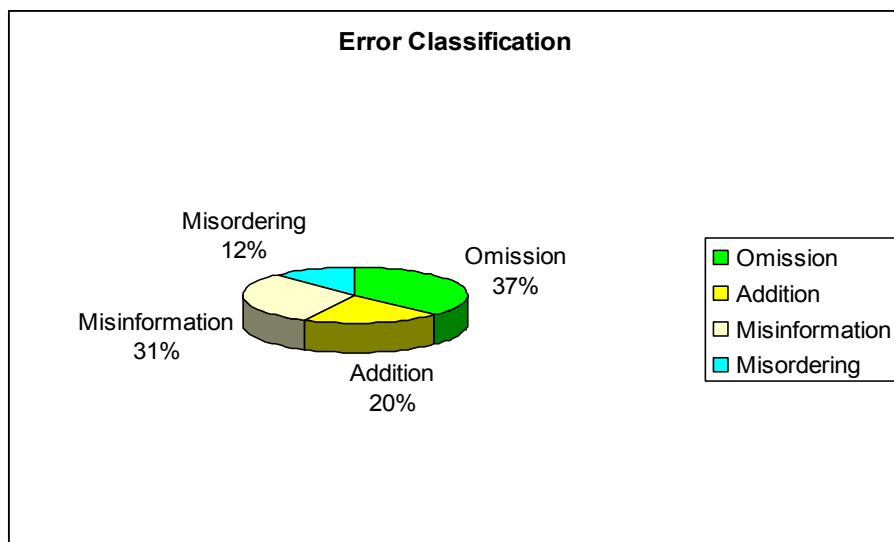
The table below specifies errors in terms of linguistic categories based on where it is located in the system of the target language; grammar, semantics, syntax and substance. The total number of errors is 473 and below is the number of errors within each category:



Graph 1: Error Taxonomy: Categories of Error

Table 1: Total number of sentences: 373

	Type of Sentence:	Total number of sentences:	Percentage (%):
1.	Simple sentence	325	87
2.	Compound sentence	24	6.5
3.	Complex sentence	24	6.5



Graph 2: Error Classification (examples from the essays)

As shown in the graphical data representation above, the highest error percentage falls under the classification category of Omission (37%) which then, follows by the Misinformation category. However, with regard to Table 2, it shows very limited information on the types of errors committed by the students in their essays. Hence, for the rest of the tables that followed, all of the students' errors are scrutinized under their each respected category.

Table 2: Classification of Errors: Omission

Identification of Error (Omission) (examples sentence):	Definition and Classification of Error:	Explanation of Rule (corrected sentence):
1. She ( ) also ( ) success in her UPSR.	Verb and Article. a) Omission of a 'be' verb. b) Omission of article 'a'.	= <i>She is also a success in her UPSR.</i> A sentence requires a verb and the word 'also' creates a general meaning for the sentence, thus, article 'a' should be used when addressing the noun the first time.
2. I have <u>many</u> best friend( ).	Plurality. a) Omission of morpheme '-s'.	= <i>I have many best friends.</i> The determiner 'many' is a plural quantity word, thus the noun which comes later must also be in plural.
3. She ( ) also active in sports.	Verb. a) Omission of 'be'	= <i>She is also active in sports.</i> SVO pattern warrants the presence of

	verb, "is".	a verb in a sentence, thus, 'be' must be inserted here.
4. The address ( ) his village is Num. 2, JalanMengkarak....	Conjunction. a) Omission of conjunction; either 'to' or 'of'.	= <i>The address <b>to</b> his village is...</i> = <i>The address <b>of</b> his village is...</i> The sentence needs a conjunction to link the two parts together; one is the statement and another is the address.
5. I also like her because she ( ) always teaching me how to swim.	Verb. a) Omission of 'be' verb, "is".	= <i>I also like her because she is always teaching me how to swim.</i> The sentence is in the '-ing' participle form.
6. I and Mira ( ) likes a sibling.	Verb. a) Omission of plural 'be' verb, "are".	= <i>Mira and I are like siblings.</i> 'Like' here is not a verb but a comparative. Thus, 'are' needs to be inserted as the main verb into the sentence.

Table 2 shows several examples of omission errors committed by the students in their writing. The examples were in the form of missing verbs, conjunction and plurality. The same goes to the addition-error types (Table 3), with the inclusion of some pronouns and subject-verb agreement errors.

Table 3: Classification of Errors: Addition

Identification of Error: Addition (examples of sentence):	Definition and Classification of Error:	Explanation of Rule (corrected sentence):
<b>a) Double markings:</b>		
1. She don't <u>likes</u> to play netball.	Verb (subject-verb agreement). a) The markers are on two verbs.	= <i>She <u>doesn't like</u> to play netball.</i> If there are two verbs in a sentence, the marker should be on the first one.
2. She <u>was borned</u> on 16 <sup>th</sup> August 1996.	Verb. a) Tense markers on two verbs in the same sentence.	= <i>She <u>was born</u> on 16<sup>th</sup> August 1996.</i> If there are two verbs in a sentence, the marker should be on the first one.

3. She <u>does knows</u> how to sew clothes.	Verb (subject-verb agreement).  a) Tense markers on two verbs.	= <i>She <u>does know</u> how to sew clothes.</i>  If there are two verbs in a sentence, the tense marker is placed on the first.
<b>b) Regularization:</b>		
1. She was <u>borned</u> on 16 <sup>th</sup> of August 1996.	Verb.  a) unnecessary insertion of tense marker, ‘-ed’.	= <i>She was <u>born</u> on 16<sup>th</sup> of August, 1996.</i>  Double marking rule can also be applied here. However, ‘born’ is an irregular verb – it does not have a past tense form.
2. I hope her ambition will <u>reached</u> and our relation never <u>breaked</u> .	Verb.  a) Unnecessary insertion on tense marker, ‘-ed’.	= <i>I hope she will be able to reach her ambition and that our relationship will never be <u>broken</u>.</i>  ‘Break’ is an irregular verb as in ‘broke’ when it is used in past tense. However, the meaning of the sentence actually warrants the writer to use the verb in its past participle form.
3. She will <u>helps</u> everyone who have problem.	Verb (subject-verb agreement and future tense)  a) unnecessary insertion of singular marker, ‘-s’.	= <i>She will <u>help</u> everyone who has problem.</i>  2 <sup>nd</sup> singular pronoun, ‘she’, warrants a singular marker, ‘-s’ at the end of every verb that comes later. But since there is ‘will’ (future tense), the verb should be in its root form.
4. <u>She’s</u> age is 13 years old.	Pronoun.  a) Misplacement of possessive pronoun.	= <i><u>Her</u> age is 13 years old.</i>  ‘Her’ should be used instead of “She”. But it seemed that the writer has over-generalized the features of possessive pronoun by adding, ‘-’s’ to ‘she’. It has the same meaning but ‘She’s’ to show possessive is not acceptable.
<b>c) Archi-forms:</b>		
1. a) <u>His</u> study at SMK Al-Wosto.  b) <u>His</u> hobby is playing badminton.	Pronoun.  a) Wrong choice of pronoun.  In the example, ‘His’ is	= <i><u>He</u> studies at SMK Al-Wosto. His hobby is playing badminton.</i>  ‘His’ is a possessive determiner of ‘he’. The first sentence warrants for a

	used as a substitute to all forms of pronoun.	3 <sup>rd</sup> person singular pronoun and not a possessive one in nature.
2. I <u>has</u> a best friend.	Subject-verb agreement.  a) Incorrect choice of verb.  'Has' is used to represent 'Have' as well.	= <i>I <u>have</u> a best friend.</i>  'I' is a 1 <sup>st</sup> person plural pronoun. Thus, the verb that comes after it should also be in plural form. 'Has' is a singular form for 'have'.
3. He is <u>a</u> intelligent boy.	Article.  a) Incorrect choice of article ('a' represents all forms of the article).	= <i>He is <u>an</u> intelligent boy.</i>  'an' should be used instead of 'a' because the letter of the word that comes after that, started with a vowel.
<b>d) Alternating Forms:</b>		
1. She is 13 years old. (then, through the rest of the essay, the pronouns keep changing):  a) His hobby is...  b) She like to eat...  c) His favourite subject...	Pronoun.  a) Incorrect used of pronouns.  'She' and 'Her' is the correct choice of pronouns but the writer keeps alternate them with 'He' and 'His'.	= a) <i><u>Her</u> hobby is...</i> = b) <i><u>She</u> likes to eat...</i> = c) <i><u>Her</u> favourite subject is...</i>  The person in which the writer was referring to is a female. So, the correct terms should be 'She' and 'Her'.
2. His favourite subject <b>is</b> <b>Mathematics</b> and <b>Science</b> .  (then, the second sentence...)  a) He likes <u>this</u> subject because <u>it</u> are very fun.	Subject-verb agreement.  a) Wrong form of 'be' verb.  b) incorrect used of pronouns.	= <i>His favourite <b>subjects are</b> <u>Mathematics and Science</u>.</i>  = <i>He likes <u>these subjects</u> because <u>they are</u> very fun.</i>  Since they are two subjects mentioned, the 'be' verb should be in plural form – 'are'.  In the second sentence, the demonstrative pronoun, 'these' and morpheme, '-s' are inserted to tally with the first structure which is in plural.

However as shown in Table 4 below, the error transgressed linguistic categories. For example, as shown in Table 4, there was a substitution of a verb form in place for a noun.

Table 4: Classification of Errors: Misinformation

Identification of Error: Misinformation (examples of sentence):	Definition and Classification of Error:	Explanation of Rule (corrected sentence):
1. a) She <u>was</u> a cute, white and tall girl. b) She <u>was</u> the tallest in our class while we <u>was</u> in primary school.	Verb. a) Incorrect used of verb form. b) Incorrect used of plural-past tense verb form. (Misinformation about the timeline).	= <i>She <u>is</u> a cute, white and tall girl.</i> = <i>She <u>was</u> the tallest in our class while we <u>were</u> in primary school.</i> Description in the first sentence should be written in the present tense (since her friend is still alive). While in the second sentence, 'we' warrants verb to be in plural form. Thus, 'were' is the correct choice.
2. We are sharing more thing about all the subject.	Verb. a) Substitution of the progressive for the simple present.	= <i>We <u>share</u> information on all of the subjects.</i> Progressive form cannot be used in the sentence since it is used to for temporary happening, whereas in the sentence, the action is something that is still going on (a statement).
3. a) When my mother cook chicken rice, I always <u>invited</u> her to my house. b) She does not decline my <u>invited</u> .	Verb and Noun. a) Substitution of a verb form in place for a noun.	= <i>She never declines my <u>invitation</u>.</i> In the second sentence, the writer repeated the used of 'invited' – the verb, to mean the noun, 'invitation'. Following the SVO pattern, an object should be placed at the end of the sentence.

In Table 5, the examples of errors committed by the students, under the Misordering category covers a wider linguistic structure in a particular sentence or a clause.

Table 5: Classification of Errors: Misordering

Identification of Error: Misordering (examples of sentence):	Definition and Classification of Error:	Explanation of Rule (corrected sentence):
1. He is <u>very</u> like to play cube.	Adverb. a) Misordering of adverb.	= <i>He likes to play Cube <u>very much</u>.</i> In this example, ' <u>very</u> ' makes up the adverbial phrase, 'very much'. Thus, it should be placed at the end of the sentence.
2. She <u>also is</u> a caring person.	Verb. a) Misordering of the verb and adverb.	= <i>She <u>is</u> also a caring person.</i> The adverb should never precede the auxiliary verb.
3. She <u>very</u> likes the actor.	Adverb. a) Misordering of the adverb.	= <i>She likes the actor <u>very much</u>.</i> In this example, the adverb should be placed at the end of the sentence.
4. <u>On the television</u> , she watch the Elly Mazlein drama.	Sentence structure (clause). a) misordering of adverbial clause.	= <i>She watches Elly Mazlein's drama <u>on television</u>.</i> In this example, the prepositional clause should be placed at the end because it is giving information about the object of the sentence (Elly's drama).
5. We always reading together <u>when we have a free time</u> .	Sentence structure (clause). a) misordering of adverbial clause.	= <i><u>When we have some free time</u>, we always read together.</i> Such adverbial clause is mostly placed at the beginning of the sentence.

Furthermore, several examples of Direct Translation and Insertion of L1 phrases into L2 sentence are as follows:

- i. She also like visits the Malaysia. When the holidays, she and her family visit the Malaysia at somewhere. When she is back, there were many places that they are visits at there.
- ii. His ambition is want to be a lawyer because his mouth always open.
- iii. My mother occupation is just care my brother and sister at home.
- iv. She is not like to play hocky because she is afraid when her friends pukul bola.

v. He like to eat Nasi Ayam and his favourite water is Bandung.

### *3.2 Data about the Learning Process*

Students are not internalizing the rules of the target language. It appears that much of the correct phrases or bombastic words are results from the acts of memorizing and copying from books.

For examples:

- i. The word, 'decline'; correct usage but incorrect choice of object.
- ii. Sentence connectors such as 'moreover'; its position is correct but then again, the sentence developed into this – "Moreover it is, her favourite food is..."
- iii. They are confused with basic principles of grammar such as singularity and plurality, subject-verb agreement, pronouns etc.
- iv. Although the class is the second ranked class in the school, the level of proficiency is quite low. In most of the essay, there is no coherency between different points.

### *3.3 Parts of the target language that the students cannot produce correctly.*

The students are having most difficulty with grammatical morphemes. Based on the data, the incorrect insertion of '-s' ranked one of the highest errors within the list of errors. They are also weak in syntax and semantic. However, since they seldom write in the forms of compound and complete sentences, the percentages are not too obvious.

### *3.4 Types of errors involved.*

#### *A. Global and Local Errors:*

Between global and local errors, they mostly committed global errors in their writings rather than the latter. As mentioned above, their choice of using simple sentences prevented them from committing significant errors in writings – not to the point of hindering communication. But in cases, where some of them did use compound or complex sentences, the results were mostly incorrect and incomplete.

For example:

- i. She also like visits the Malaysia. When the holidays, she and her family visit the Malaysia at somewhere. When she is back, there were many places that they are visits at there.

For the simple sentences, obviously there were signs of L1 interference but still the message was successfully conveyed.

For examples:

- i. I have best friend.
- ii. The place of birth is at Hospital Mentakab.

iii. I feel that the world will lonely without her.

#### B. Intralingual and Interlingual Errors:

- i. Intralingual errors dominated over most of the data, especially in terms of over-generalization and ignorance of rule restriction.
- ii. With reference to the categories of classification, the Addition category portrays most examples of over-generalization whereas Misinformation and Omission categories contain evidences of rule-restriction ignorance.

### 3.5 Sources of Errors.

#### A. L1 Interference

The major source of error in the production and/or reception of a second language are the native language.

- i. One can account for the errors by considering differences between L1 and L2. The greater the differences between L1 and L2, the more errors will occur.
- ii. For examples; the use of grammatical morpheme, '-s' to show plurality. There is no such form in Bahasa Melayu.

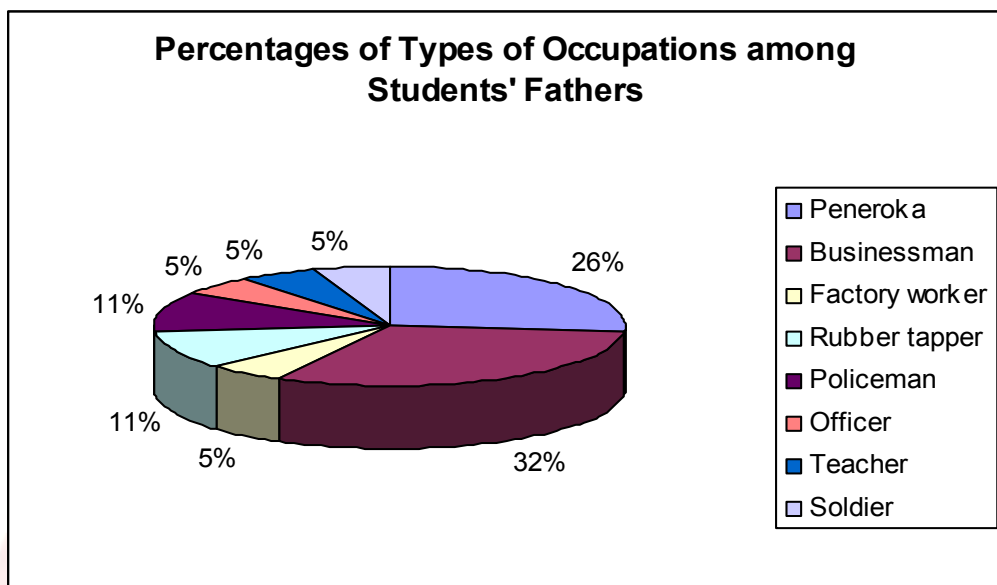
#### B. Induced Errors – result from incorrect instruction of TL

The techniques or strategies that are being used in today's classroom are not the best way to teach a language. First, lesson plans and syllabuses need to be design to cater to the students' needs. The language that is being portrayed to students is in a fragmented form. The grammatical rules, syntactical rules and whatnots are rigidly forced upon the students to be memorized for exams. Thus, there is no internalization of the target language structure within the students' schemata. In addition, language must be taught in its whole and the exposure must consistent as well.

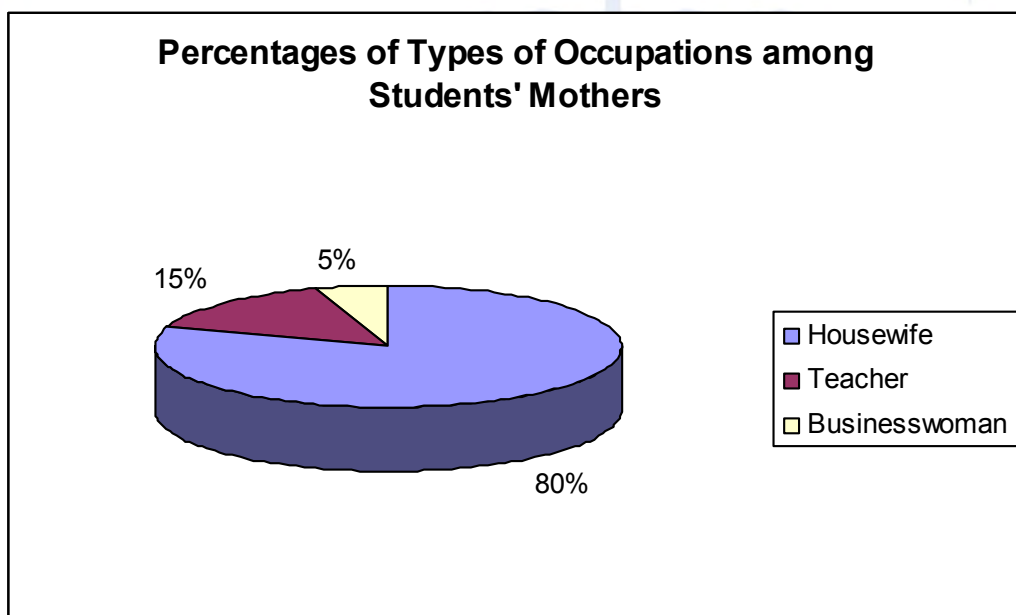
### 3.6 Background Checklist of the Students

Based on the two pie charts below, it is possible to concur that most of the students do not have sufficient exposure or practice with regards to the target language outside the classroom. Support or motivations from parents also play an important role in the students' development towards the language. One of the students wrote a reasonably good essay. Her father being an officer and her mother a teacher, they perhaps could provide a better learning environment for their children to acquire as well as learn the language.

Graph 3: Student's Background: Percentages of Types of Occupations among Students' Fathers.



Graph 4: Student's Background: Percentages of Types Occupations among Students' Mothers.



In a study conducted by Nor Hashimah, Norsimah and Kesumawati (2008) involving a total of 315 schools in Malaysia – urban, sub-urban and rural schools to study the mastery of English language among students in lower secondary schools – they have found that students from lower income families have the lowest mastery level of the language. Combination of factors such as poverty, unavailability of tuition services, social environment, interest and attitude contribute to the students' inability to acquire English (Nor Hashimah, Norsimah & Kesumawati, 2008).

From the results, it can be concluded that the subjects have committed a lot of errors in their writings, especially grammatical errors. Moreover, errors in terms of 'omission' and 'misinformation' reported as the highest among other types of errors. As mentioned earlier, the subjects are students from secondary school in Pahang with an intermediate level of proficiency as the class average. Key information regarding the students is the fact that they are from a rural school – outskirts of a town in Pahang. The students lack exposure towards the English language and their usage is limited only to the classroom context. Furthermore, the results showed a high level of interference from L1 with errors involving direct translation of their mother tongue. Hence, based on the assessment on students' writing skills, the data showed a high degree of possibility that they only used one language faculty which is their L1's. When compared to the results of urban students (presented in Nor Hashimah, Norsimah & Kesumawati, 2008), they showed high possibility of having used another language faculty aside from their L1's. Their writings presented less interference from their mother tongue as well as much less grammatical errors.

There are three factors of importance here; exposure towards L2, age as well as background. Early exposure prompts general intelligence to provide the foundation of constructing more than one language faculty in the learner's repertoire of linguistic intelligence. The exposure needs to take place before the brain lateralizes and loses its flexibility to cater to the demands of a new language. In this case, the student's background is important to provide that opportunity as well as the ideal environment for language acquisition and learning to take place. Moreover, family could act as motivators as well as providers of knowledge to the students when they are at home.

### *3.7 Tracing Language Faculty through Learner's Errors*

Based on the errors committed by the students, they are indeed using their language faculty for L1 to learn L2 – too many interference instances in their writing products as proof. Even if past studies such as conducted by Stern and Baine with regard to language acquisition and learning – differences between adults learner and children – the only upper hand that they have is early exposure and natural conditionings. Hence, there is a possibility that there is more than one language faculty within an individual with high level of proficiency in his repertoire of languages – L1 or L2.

Moreover, this study also highlights the importance of general intelligence as the system that provides learner the ability to comprehend and learn language before such linguistic system even existed prior to exposure.

## **4. CONCLUSION**

Chomsky's theory has been around for a long time but nobody questioned it unlike this research which proposed the idea of multiple language faculties in the learner's mind. Even in the aspect of human intelligence system, while others busy themselves over innateness as well as UG (Universal Grammar), no research has ever touched upon general intelligence as the main contributor to the early stage of language learning as well as the ability to communicate in the first place. Therefore, by studying the errors committed by learners in writings – which can be seen as the products of the mind – it is possible to trace whether there is more than one language faculty available to an individual. Hence, this study concluded that there is multiple language faculties reside in the language learning repertoire of bilinguals and multilingual.

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## Appendix

Error Identification (Word tokens: 3126, Word types: 698)

	Categories:	Sub-categories:	Total Number of Errors: 473	Percentage (%):
1.	Grammatical Errors <G>	a) Noun <GN> b) Pronoun <GPRO> c) Verb <GV> d) Conjunction <GC> e) Adjective <GADJ> f) Adverb <GADV> g) Preposition <GPREP> h) Article <GA> i) Determiner <GD> j) Singular-Plural <GSP> k) Subject-verb agreement <GSVA>	16 60 76 53 2 8 1 44 - 41 72 - 41 72	3.4 12.7 16.1 11.2 0.4 1.7 0.2 9.3 - 8.7 15.2
2.	Syntactic Errors <SYNE>	a) Sentence Structure <SYNSS> b) Coordination <SYNC>	17 1	3.6 0.2
3.	Semantic Errors <SEME>		9	2
4.	Substance (mechanics and spelling) <S>	a) Punctuations <SP> b) Capitalizations <SC> c) Spelling <SS>	7 31 30	1.5 6.6 6.3
5.	Direct Translation		5	1.1

*Perceptions of Japanese EFL Learners' /r/ and /l/ Pronunciation: Comparing Native Speakers' Ratings of Word-level Utterances*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

It is well known that English /r/ and /l/ pronunciation poses production difficulty for many native Japanese speakers, but the intelligibility and acceptability of that production ultimately lies with listener perceptions and judgments. As it was speculated that listener dialect may influence these perceptions and judgments, research was conducted with native speakers who used different varieties of English rating native Japanese speakers' production of /r/ and /l/ in various utterances. Initial data analyses (Rubrecht 2009) revealed statistically significant differences at but not above the word level. Because listeners have been found to primarily use segmental cues such as /r/ and /l/ to determine strength of accent (e.g., Riney, Takagi & Inutsuka 2005), which could influence pronunciation instruction, training, and assessment, a second set of data analyses was conducted, the aim of which was to determine more precisely how the raters from the initial study differed in their perceptions of the participants' word-level phonemic productions. Results indicate statistical significance between the raters in multiple word positions for the two phonemes, thereby legitimizing questions regarding the potential lack of pronunciation instruction and evaluation standards across educators and raters.

*Keywords:* pronunciation, /r/, /l/, phoneme, English, Japanese, EFL instruction, training

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As related in a previous study (Rubrecht 2009), although there has been a recent increase in interest in language learner pronunciation research, particularly involving pronunciation training with English as the target language, what has generally been overlooked is attention paid to listener perceptions of learners' pronunciation. Such perceptions are crucial to explore, as listeners, who are often labeled simply as "native English speakers" in various studies, may come from different English variety backgrounds. As such, they may pronounce English differently and may therefore have disparate perceptions concerning the intelligibility and acceptability of the English pronunciation that they hear. With there being no single "standard English" variety used worldwide, it becomes necessary to determine how such native English speakers perceive learners' pronunciation, for any differences could impact and mediate the effects of pronunciation evaluation, not to mention any initial pronunciation instruction and training.

In an attempt to discern whether or not native English speakers from different English variety backgrounds perceive spoken English by non-native speakers differently, a preliminary research study (Rubrecht 2009) was conducted with native Japanese English as a foreign language (EFL) learners pronouncing /r/ and /l/ minimal pair words in various positions (e.g., word onset, intervocalic) and contexts (i.e., at the word and sentence levels, as well as in a free narrative). Statistical significance was discovered among the ratings of pronunciation raters at but not above the word level, suggesting that pronunciation instruction and training conducted by those from different English variety backgrounds may not be standardized. Such a discrepancy could not only have a clear impact on the conducting of pronunciation instruction and training, but also, considering that Japanese learners of English generally lack awareness of disparate English varieties (Rubrecht 2010), it could influence learners' perceptions of what is "true" or "acceptable" English pronunciation.

In order to gain a better understanding of what native English speakers from different variety backgrounds may consider intelligible and acceptable /r/ and /l/ production, continued analyses were conducted on the findings of the aforementioned previous study. The current paper details deeper analyses of the statistical significance found at the word level among the three native English speaking raters, with the aim being to discern (a) which /r/ and /l/ word position evinced statistically significant differences in raters' ratings and (b) which phoneme was heard differently most often by the raters.

## **1. Literature background**

There has been a marked upswing over the past two decades in interest in research into second and foreign language learners' pronunciation, which includes interest in pronunciation instruction and training. Pronunciation has often been an overlooked component of language instruction, even though it is arguably an essential component of oral communicative activities. Pronunciation can impact a learner's speech production in the target language, and it can also influence how listeners regard the learner as a target language user. Pronunciation has therefore increasingly come to be thought of as more than an area of remedial instruction, and as such, language instructors themselves have noticed that it is important that they understand the mechanics behind target language phoneme production, as it is "a skill that teachers cannot do without" (Benrabah 1997, p. 157). As a result, instructors have continually sought ways to incorporate efficient and effective pronunciation training into their curricula, even as their curricula become ever more crowded (e.g., Acton 1997; Celce-Muria 1987; Celce-Muria, Brinton & Goodwin 1996; Kendrick 1997; Kenworthy 1987; Levis & Grant 2003; Lin, Fan & Chen 1995; Macdonald, Yule & Powers

1994; Makarova 1996, 1997).

This renewed interest in pronunciation is reasonable and even long overdue, as miscommunication can arise from problems or difficulties with foreign accents (Jarvis & Stephens 1994). Comprehensible pronunciation benefits the communicative activities of non-native speakers of English, from international business personnel and scientists to students studying abroad (Morley 1991) and even foreign language learners who must give presentations in the foreign language (Greer & Yamauchi 2008). Increased knowledge of and training with the pronunciation of a second or foreign language has been found to lead to improved speaker comprehensibility and intelligibility (Derwing & Munro 1997; Derwing, Munro & Wiebe 1998; Kashiwagi & Snyder 2003; Kenworthy 1987; Munro, Derwing & Morton 2006) as well as improved target language listening and comprehension skills (Bohlken & Macias 1992; Major, Fitzmaurice, Bunta & Balasubramanian 2002, 2005).

Certainly, a speaker with a strong accent may still present fully intelligible speech (i.e., Munro & Derwing 1995a, 1995b), as listeners do possess a fair amount of plasticity in accommodating peculiar pronunciation (e.g., Clarke & Garrett 2004; Eisner & McQueen 2005; Kraljic & Samuel 2006; Maye, Aslin & Tanenhaus 2008; Norris, McQueen & Cutler 2003), but listener judgments of non-native speaker speech have been found to include subjectivity, as factors such as listener experience with accented speech or their biases against certain accents can come into play (Derwing & Munro 2005). Nevertheless, because speech has both productive and perceptive components, the onus of intelligible speech should be placed more on speakers improving their pronunciation rather than listeners trying to decode the message behind utterances, especially if one considers that pronunciation instruction and training traditionally includes the productive components far more than the perceptive components.

As pointed out elsewhere (Rubrecht 2009), the research on improving learner pronunciation comprehensibility and intelligibility through training has focused almost solely on the learners and their pronunciation production, with surprisingly little consideration paid to the perceptive component, that is, to the pronunciation evaluators, or raters, whose job it is to assess the comprehensibility and intelligibility of those who have undergone pronunciation training. Naturally, listeners are considered in listener discrimination studies (e.g., Best, McRoberts & Goodell 2001) and when researchers attempt to identify pedagogical clues to improve pronunciation instruction (see Morley 1991), but in studies that focus on pronunciation training and assessment, raters are usually simply noted as being “native English speakers,” with the role of the raters’ English variety (i.e., the potential biases that may be present from possessing and utilizing a particular variety) remaining an unconsidered variable (see Derwing & Munro 1997; Munro & Derwing 1995a, 1998), though of course some studies present more specific rater information (e.g., Derwing, Munro & Wiebe 1998). With there always having been a great diversity in the spoken realizations of English (Cruttenden 2001) and with no single English standard by which to judge learners’ pronunciation, research must be conducted that considers rater background English variety, or at minimum, take into account differences in perceptions of raters who come from different English variety backgrounds.

## **2. The research**

### **2.1 The research questions**

The research questions that drove the current study were twofold. In the initial research, statistically significant differences were discovered among the ratings of the three raters at the word level. As such, the research questions for the present study were:

1. Which /r/ and /l/ word positions evinced statistically significant differences in raters' ratings? Stated differently, in what word position instances were the raters not hearing the same pronunciation?
2. Which phoneme in each position was heard differently most often by the raters? In other words, if the raters were all hearing the same pronunciation of /r/ and /l/ across the various word positions, were there common differences in rater perception about which phoneme they professed to hear?

### **2.2 Background and impetus**

The original research (Rubrecht 2009) was conducted to ascertain if native speaker perceptions of Japanese speakers' /r/ and /l/ pronunciation were due to differences in listener English variety background. Readers are encouraged to refer to the original research for a fuller description of the study, but it can be noted here that listeners have been found to primarily use segmental cues such as /r/ and /l/ to determine strength of accent (e.g., Riney, Takagi & Inutsuka 2005), and that the /r/ and /l/ of English do not exist in Japanese (see Avery & Ehrlich 1992; Ingram & Park 1998), making them ideal phonemes to be examined for research purposes. The details most consequential to this second set of analyses will now be briefly recounted here.

The research focused on the production of /r/ and /l/ phonemic contrasts (i.e., minimal pairs) in word-, sentence-, and narrative-level utterances by native Japanese speakers (see below) and was concerned with how the speakers' utterances were rated by native speakers of American, Australian, and British English, either in terms of phoneme heard (for the utterances at the word level) or acceptability (for the utterances above the word level).

### **2.3 Participants**

There were two groups of participants in the study: the speakers and the raters. The speakers were 24 native Japanese university students majoring in English. All were freshmen English major volunteers who had little or no travel abroad experience. None had ever engaged in specific pronunciation training apart from what was presented to them in the course of their learning English prior to matriculating to university. They were of high intermediate to advanced English speakers.

The three raters were native English speakers with extensive English teaching experience both in Japan and abroad. Each possessed a unique variety of English, that is, American English, Australian English, and British English, or General American, General Australian, and BBC English, which was formerly referred to as Received Pronunciation, or RP (see Roach 2001), respectively. The raters all professed to possess normal hearing.

## 2.4 Procedure

Because the current article focuses only on the word-level utterances, where statistical significance had been previously found, only the data collection procedure for these utterances will now be described. To elicit word-level production of the selected 35 /r-l/ minimal pair words, the learners were individually presented one of three unique PowerPoint presentations, all with complimentary content. On each slide was one minimal pair word (70 words in total). Each word contained /r/ or /l/ in one of four positions: word onset, as the second element of an onset cluster, intervocalic, and word ending. The learners were presented with onscreen instructions stating that they would be shown words, one at a time, and that each click of the mouse would present them with a new word. They were instructed to pronounce each word in a loud clear voice with their best possible English pronunciation. There was no time limit.

The recordings were made using audio recording software. They were recorded with a USB microphone at a rate of 44 kHz with 16-bit resolution, saved as WAV audio files. Before being given to the raters, the recordings were edited to remove unwanted information (e.g., long pauses, researcher explanations, questions asked by the speakers during the recordings) and had short, low tones inserted in places (e.g., after every 10 minimal pair word utterances) so that the raters could keep track of their place when rating the recordings.

Each rater was provided with a digital copy of the recordings, one rating sheet for each speaker, and high-fidelity headphones. For the word-level utterances, they were instructed to mark their rating sheets to indicate if they heard an /r/ or an /l/. The raters had no clue as to whether an /r/ or /l/ word was being spoken. If they could not discern what was uttered, they were told to place a mark in the “?” column. In order to run calculations on the ratings, the researcher later assigned the ratings numerical values.

## 3. Results

As the original research indicated statistical significance in the ratings among the raters at the word level via One-Way ANOVA tests (i.e., with all words and with word onset words), it was not necessary to repeat comparisons across the three raters. Because the current research focus was to locate and analyze the specific instances when the raters were not hearing the same phonemes being produced, it was necessary to compare the ratings of one rater against the ratings of each of the other two raters. This was done by conducting multiple repeated-measures (paired) *t*-tests.

The first set of *t*-tests was conducted between raters on the following levels: all words ( $n = 1,680$ ), word onset position words ( $n = 672$ , from 14 minimal pair sets), second element of an onset cluster position words ( $n = 624$ , from 13 minimal pair sets), intervocalic position words ( $n = 144$ , from 6 minimal pair sets), and word ending position words ( $n = 240$ , from 10 minimal pair sets). Table 1 indicates via letters in parentheses where statistical significance between ratings was found. The results of these statistical analyses are presented in Appendix A.

**Table 1:** Tests for statistical significance across all words and word positions

Category	Amer. – Aus.	Amer. – Brit.	Aus. – Brit.
All words	(A)	(B)	(C)
Word onset	(D)	(E)	(F)
Second element of an onset cluster	(G)	--	--
Intervocalic	(H)	(I)	--
Word ending	--	--	--

The analyses revealed statistical significance to be found most often between the ratings of the American and Australian raters and least often between the Australian and British raters. Statistical significance was found in four out of the five tests when comparing the perceptions of the American versus the Australian, in three tests between the American and British raters, and twice between the Australian and the Briton.

These statistical analyses were revealing, but they only indicated statistically significant differences in ratings of /r/ and /l/ in the various word positions. They did not reveal if there were any differences in how the raters were rating with respect to intended phoneme, that is, there was no indication if there were differences in ratings in expected phoneme production (e.g., /l/ in word onset position, /r/ in intervocalic position, etc.). Table 2 presents the *t*-tests regarding phonemes in specific positions. The results of these statistical analyses are presented in Appendix B.

**Table 2:** Tests for statistical significance of phonemes in specific positions

Category	Amer. – Aus.	Amer. – Brit.	Aus. – Brit.
/r/, all positions	(J)	--	(K)
/l/, all positions	(L)	(M)	--
/r/, word onset	(N)	--	(O)
/l/, word onset	(P)	(Q)	--
/r/, second element of an onset cluster	--	--	--
/l/, second element of an onset cluster	(R)	(S)	--
/r/, intervocalic	--	--	--
/l/, in intervocalic	(T)	--	--
/r/, word ending	--	--	--
/l/, word ending	--	--	--

The tests revealed statistical significance six out of 10 times between the ratings of the American and Australian raters, but only three times and two times between the American

and British raters and the Australian and British raters, respectively, which indicates that, generally speaking, there were fewer differences to be found between the perceptions of the Australian and British raters. Comparing the results found between the American and Australian raters, discrepancies were noted between the ratings when the /l/ phoneme was intended in all instances except in word ending position. Similar discrepancies were revealed when comparing the American and British raters, except that /l/ in intervocalic position was not statistically significant, nor was /r/ in all word or in word onset positions. The only instances where statistical significance was found between the Australian and British raters was when comparisons were made with /r/ in all positions and /r/ in word onset position.

#### 4. Conclusions and discussion

In order to draw conclusions from this second set of analyses, let us return to the research questions. In responding to the first question, which asked which /r/ and /l/ word positions evinced statistically significant differences in the raters' ratings, we must consider the results presented in Table 1. With 12 instances possible (minus the "all words" tests), it was discovered that half of the time (i.e., in six instances), the raters were, statistically speaking, not hearing the same phonemes being produced. Excluding the "all words" category, statistically significant differences were detected in word onset position across all three comparisons of the raters. It was not unexpected that statistical significance was not found between the Australian and British raters in instances involving the other three positions, that is, as second elements, intervocalic, or word ending, given the noted similarities between Australian and British English with regard to their being non-rhotic (see Celce-Murcia, Brinton & Goodwin 1996; Cruttenden 2001), such as with BBC English where /r/ only occurs before a vowel (Gimson 1989; Wells 1982). Why there was statistical significance found between the American and Australian raters with regard to second elements of an onset cluster and in intervocalic position, and why the American and British raters differed with regard to intervocalic /r/ and /l/, however, remains open to speculation. It is of interest to note that statistical significance was not found between the American rater and the other two raters for the word ending words, given that (a) only the American rater's General American dialect included rhotic aspects, especially in word ending position, and (b) Japanese speakers of English often delete /r/ in word ending position (Avery & Ehrlich 1992), which matches more closely with the varieties used by the Australian and the Briton. Why there was no statistical significance found here warrants further analysis.

When considering the second research question, that is, which phoneme in each position was heard differently most often by the raters, examining the results presented in Table 2 reveals that of the 24 possible tests (i.e., /r/ and /l/ in the four word positions minus the "all positions" tests), seven revealed statistical significance, which is between one-third and one-fourth of the instances. The American and Australian raters differed in their perceptions of both /r/ and /l/ in word onset position, while the Briton differed from the American for /l/ and from the Australian for /r/. As it is suspected that in most if not all cases of pronunciation training specific phonemic production would involve instruction on the mechanics behind /r/ and /l/ production (e.g., in practice with minimal pair words such as "right" and "light" where the phonemes are most clearly produced and heard), that there were differences discovered here across the raters suggests the potential for discrepancies in pronunciation training. That there were other instances where differences were detected only serves to strengthen this suspicion.

As to the import of the results of this study, as was discovered in the initial study, statistical significance was not discovered above the word level. Indeed, Suenobu, Kanzaki, and Yamane (1992) note that when words were presented in their original sentences (i.e., in context), the intelligibility scores of Japanese speakers rose from 42% to 67%. While this may encourage educators to concentrate on the suprasegmental level, non-native learners tend to place a great deal of emphasis on pronunciation at the word level (Field 2004). The results of this second set of analyses indicate that should pronunciation instruction and training occur with even a modicum of attention paid to the segmental level, educators should clearly inform students of the background English variety from which this /r/ and /l/ pronunciation springs, and if the time and means are available, they should also provide models and even practice sessions with the pronunciation of multiple common accents.

In the end, given that the goal of current pronunciation instruction and training is to produce second and foreign language learners who can more clearly communicate with others rather than have them emerge with native-like pronunciation (Paul 2012), the quest to seek a pure English pronunciation standard as a model for learners is not only deemed impossible but also quite possibly counterproductive. If it is acceptable to allow speakers to communicate orally with various accents, it stands to reason that listener accents must somehow be accounted for as well.

Because this study meant to delve deeper into data collected previously, the caveats and limitations of the first study carry over to this one, that is, there were only three raters from three specific English-speaking regions, and factors such as their age, gender, or length of time living in Japan were not considered. As such, the research results cannot necessarily be generalizable. Nevertheless, as discrepancies between the native English speakers were found, further studies are recommended. Such studies could examine a myriad of areas, including raters' perceptions of learners' pronunciation before and after pronunciation training. They could also seek to answer why /r/ was not found to be statistically significant between the raters even though the presence or lack of rhoticity is used to differentiate the English varieties used by the raters in this study. Those interested in pursuing these and other lines of research are encouraged to include a greater number of participants (both learners and raters) to strengthen any results found.

#### **Author note**

The author wishes to thank Elizabeth Ginsberg for her assistance with this research.

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### **Appendix A: Results of tests for statistical significance across all words and positions where statistical significance was found**

- (A)  $M = -0.09$ ,  $SD = 0.6$ ,  $t(1679) = -7.72$ ,  $p < 0.0001$ , two-tailed  
(B)  $M = -0.06$ ,  $SD = 0.62$ ,  $t(1679) = -3.81$ ,  $p = 0.0001$ , two-tailed  
(C)  $M = -0.04$ ,  $SD = 0.59$ ,  $t(1679) = -2.76$ ,  $p = 0.006$ , two-tailed  
(D)  $M = -0.14$ ,  $SD = 0.62$ ,  $t(671) = -7.06$ ,  $p < 0.0001$ , two-tailed  
(E)  $M = -0.07$ ,  $SD = 0.65$ ,  $t(671) = -2.97$ ,  $p = 0.003$ , two-tailed  
(F)  $M = -0.06$ ,  $SD = 0.62$ ,  $t(671) = -2.62$ ,  $p = 0.009$ , two-tailed  
(G)  $M = -0.06$ ,  $SD = 0.59$ ,  $t(623) = -3.01$ ,  $p = 0.003$ , two-tailed  
(H)  $M = -0.1$ ,  $SD = 0.55$ ,  $t(143) = -2.76$ ,  $p = 0.007$ , two-tailed  
(I)  $M = -0.1$ ,  $SD = 0.56$ ,  $t(143) = -2.52$ ,  $p = 0.013$ , two-tailed

### **Appendix B: Results of tests for statistical significance of phonemes in specific positions where statistical significance was found**

- (J)  $M = -0.05$ ,  $SD = 0.47$ ,  $t(839) = -3.028$ ,  $p = 0.003$ , two-tailed  
(K)  $M = -0.07$ ,  $SD = 0.47$ ,  $t(839) = -3.32$ ,  $p = 0.0009$ , two-tailed  
(L)  $M = -0.13$ ,  $SD = 0.42$ ,  $t(839) = -8.07$ ,  $p < 0.0001$ , two-tailed  
(M)  $M = -0.12$ ,  $SD = 0.45$ ,  $t(839) = -6.083$ ,  $p < 0.001$ , two-tailed  
(N)  $M = -0.09$ ,  $SD = 0.45$ ,  $t(335) = -3.45$ ,  $p = 0.0006$ , two-tailed  
(O)  $M = -0.12$ ,  $SD = 0.46$ ,  $t(335) = -3.69$ ,  $p = 0.0003$ , two-tailed  
(P)  $M = -0.18$ ,  $SD = 0.41$ ,  $t(335) = -6.43$ ,  $p < 0.0001$ , two-tailed  
(Q)  $M = -0.18$ ,  $SD = 0.47$ ,  $t(335) = -5.189$ ,  $p < 0.0001$ , two-tailed  
(R)  $M = -0.12$ ,  $SD = 0.47$ ,  $t(311) = -4.34$ ,  $p < 0.0001$ , two-tailed  
(S)  $M = -0.11$ ,  $SD = 0.48$ ,  $t(311) = -3.377$ ,  $p = 0.0008$ , two-tailed  
(T)  $M = -0.11$ ,  $SD = 0.31$ ,  $t(71) = -2.04$ ,  $p = 0.0447$ , two-tailed

*Quality of Online Courses at a Tertiary Learning Institution: From its Academic Staff's Perspective*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

Online courses have been adopted rapidly in tertiary learning institutions as a delivery mode for its courses in order to reach as many students as possible as well as to take advantage of the ease of access of the course content by these students. This online delivery mode is also adopted for academic staff training and professional development purposes. Thus, the views of the academic staff are no less important for the success in such an endeavour. In view of this, a small scale study was carried out to investigate the opinions of the academic staff in a big and well-established private college in Penang, Malaysia, which is also a member of the Laureate International Universities, regarding the online courses that have been implemented in that institution. Thirty lecturers from various departments in that establishment took part in this survey which used a five-point Likert scale questionnaire to find out their opinions on various aspects of the online courses in that college. This paper reports on the lecturers' views regarding six aspects, namely, course content, course organization, assessment and evaluation of student learning, website accessibility as well as security and support, interactive learning environment, and institution commitment.

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## INTRODUCTION

Online education, or online learning, usually refers to the learners being at a distance from the tutor or instructor, and that the learners use some form of technology (usually a computer) to access the learning materials as well as to interact with the tutor/instructor and sometimes even other learners. In addition, the learners are provided with some form of support (Ally 2004).

Online education is gaining popularity, especially among institutions of higher learning, due to the rapid expansion of computer technology and broadband connectivity. Moreover, other reasons include alleviating capacity constraints, capitalizing on emerging market opportunities as well as being a catalyst for institutional transformation (Volery and Lord 2000). Some advantages of online education are that learners do not need to travel long distances to be present in a classroom during a learning session, and neither do they need to learn at a prescribed time, as in conventional classroom learning. This reduces the need to build big campuses because learners can access the learning materials from their home, for example, and learners can optimize their learning time, especially working people with tight schedules. Another benefit of online learning is being able to deliver information via modes not found in traditional sources, namely, multimedia and animation. Multimedia allows learners to apply concepts realistically in learning exercises, while animation helps to demonstrate difficult concepts.

In view of the benefits of online education, Laureate International Universities embrace this mode of learning passionately because they believe in providing new opportunities for its academic staff to gain new knowledge and develop themselves professionally.

## BACKGROUND

Laureate International Universities is a leading international network of quality, innovative institutions of higher education. This network, comprising 60 accredited campus-based and online universities spanning over 29 countries throughout North America, Latin America, Europe and Asia, offers undergraduate and graduate degree programmes to more than 740,000 students. It offers hundreds of career-focused, undergraduate, master's, and doctoral degree programmes in fields including architecture, art, business, culinary arts, design, education, engineering, health sciences, hospitality management, information technology, law, and medicine (Laureate International Universities 2012).

To enhance its teaching staff skills, Laureate International Universities has set up a portal called the Faculty Development Initiative whereby Laureate teachers have online access to various resources and professional development opportunities. In the latter, courses are available to the academic staff members. The courses, which the lecturers may register for, are grouped under Induction, Learning Methods, and Laureate Certificate in Teaching and Learning in Higher Education. The course offered in Induction is called Laureate Faculty in the 21<sup>st</sup> Century, while the courses available in Learning Methods are Collaborative Learning, Problem-based Learning, and Case Study Methodology. On the other hand, Laureate Certificate in Teaching and Learning in Higher Education has a series of five instructor-led modules, namely, Introduction (Module I), Student-centred Teaching (Module II), Teaching Tools (Module III), Assessment Tools (Module IV), and Technology Tools (Module V). The duration of the Induction course and the three courses under Learning Methods is 20 hours each. These four courses may be registered in any sequence. The courses in the Laureate

Certificate in Teaching and Learning in Higher Education, on the other hand, must be taken in sequence, that is, Module I followed by Module II, which is then to be followed by Module III, and so on.

Due to the fact that lecturers at Laureate International Universities member institutions are encouraged to register and sit through these in-house online courses for professional development purposes, these lecturers have thus become students when they are following any of these courses.

This small scale study was meant to obtain the opinion of the teaching staff at Laureate International Universities regarding the quality of these in-house online courses after having gone through these courses themselves as registered participants. It also studied the influence of gender, and years of teaching experience of the academic staff as well as the school they were working in on their perception of the quality of these online courses.

## METHODOLOGY

### Instrument

A survey questionnaire was used in this small scale study to collect the data on the lecturers' perceptions regarding the online courses available in their learning institution. There were a total of 28 items in the survey form, which included three items on the respondents' background information. All the questionnaire items, with the exception of the three items on background information, were provided with a five-point Likert scale, ranging from 1=Strongly Disagree to 5=Strongly Agree. Besides that, all the 25 items were positively-worded. The items were grouped under various factors, such as, course content, course organization, and assessment and evaluation of student learning. These factors, which have been identified to be successful ones in implementing an e-learning programme, were drawn and adapted from Goi and Ng (2009). For example, the factors 'web page accessibility' and 'web site security and support' from Goi and Ng (2009) have been merged into a single factor in the present study as 'website accessibility, security and support'. The reason this was done was because these were considered as quality factors for websites (Zhang and von Dran 2001). Some sample items as well as the number of items associated with each factor in the questionnaire are listed in Table 1.

Table 1: Factors, sample items and number of items in questionnaire

Factor	Sample items	No. of items
Course content	The objectives of the course are clearly stated.  Language used is simple and clear.	6
Course organization	Activities are aligned with the learning objectives.	4

Assessment and evaluation of student learning	Criteria to pass an assessment are stated clearly.  Results on each assessment or activity are given promptly.	4
Website accessibility, security and support	The website is easily accessible.  Technical support or Help Desk is available.	4
Interactive learning environment	Learners are encouraged to give opinions or ideas in discussion forum.	4
Institution commitment	The management is committed to improve the quality of the course.  The management encourages learners to register for the course.	3
Total		25

## Respondents

A total of 30 lecturers from a big and well-established private college in Penang, Malaysia participated in this survey. This tertiary institution also happened to be a member of the Laureate International Universities. A criterion we set for our respondents was that all of them must have attended or were attending at least one of the Laureate online courses at the time of the study. These participants possessed different years of teaching experience and were from various schools.

## DATA ANALYSIS AND DISCUSSION

A breakdown of the number of respondents in terms of their gender, years of teaching experience and school they are working in is shown in Table 2. There were about equal number of male and female respondents, with the majority of them having just begun their teaching career. As for the school they were working in, nearly half of them were from the Centre of Excellence for Pre-University Studies.

Table 2: Number of respondents according to gender, years of teaching experience and department

		No. of respondents
Gender	Male	16
	Female	14
Teaching experience	1 – 5 years	15
	6 – 10 years	6
	More than 10 years	9
School	School of Business	3
	School of Engineering	5
	School of Computing and Information Technology	3
	Language Centre	6
	Centre of Excellence for Pre-University Studies	13

The lecturers' views for each factor in the questionnaire were analyzed descriptively. The means and standard deviations for each of the six factors were calculated for all the 30 lecturer respondents and the results are shown in Table 3. Since the questionnaire used the scale of 1=Strongly Disagree and 5=Strongly Agree, a high mean score would indicate a positive stance of the lecturers. Among the six factors the course content factor had the highest mean score at 4.19, while website accessibility, security and support factor had the lowest, which was at 3.73. Therefore, it can be surmised that the lecturers in general were satisfied with all the six factors related to the online courses.

Table 3: Means and standard deviations for each factor

Factor	N	<i>M</i>	<i>SD</i>
Course content	30	4.19	.38
Course organization	30	4.12	.48
Assessment and evaluation of student learning	30	3.90	.65
Website accessibility, security and support	30	3.73	.48
Interactive learning environment	30	4.06	.44
Institution commitment	30	3.80	.54

The views of the lecturers, separated according to gender, were also analyzed. The means and standard deviations of the participants' selected answers for each factor are given in Table 4.

Table 4: Means and standard deviations for each factor, according to lecturers' gender

Factor	Male		Female	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Course content	4.21	.39	4.18	.38
Course organization	4.08	.57	4.16	.37
Assessment and evaluation of student learning	3.89	.65	3.91	.67
Website accessibility, security and support	3.86	.53	3.59	.39
Interactive learning environment	4.11	.56	4.00	.28
Institution commitment	3.88	.59	3.71	.47

When the mean scores, taken from Table 4 above, for each factor according to gender are depicted in a graph format (Figure 1), it can be clearly seen that there was no big difference in the mean scores between males and females for the first three factors. This meant that males and females had similar opinions of the online courses where these factors are concerned. The other three factors, on the other hand, showed female lecturers having much lower mean scores than their male counterparts. These three factors were website accessibility, security and support, interactive learning environment, and institution commitment. This meant that female lecturers were less satisfied with these three factors compared to their male colleagues. Moreover, website accessibility, security and support

factor showed the biggest disparity between these two groups of lecturers, with females getting a mean score of 3.59 and males 3.86.

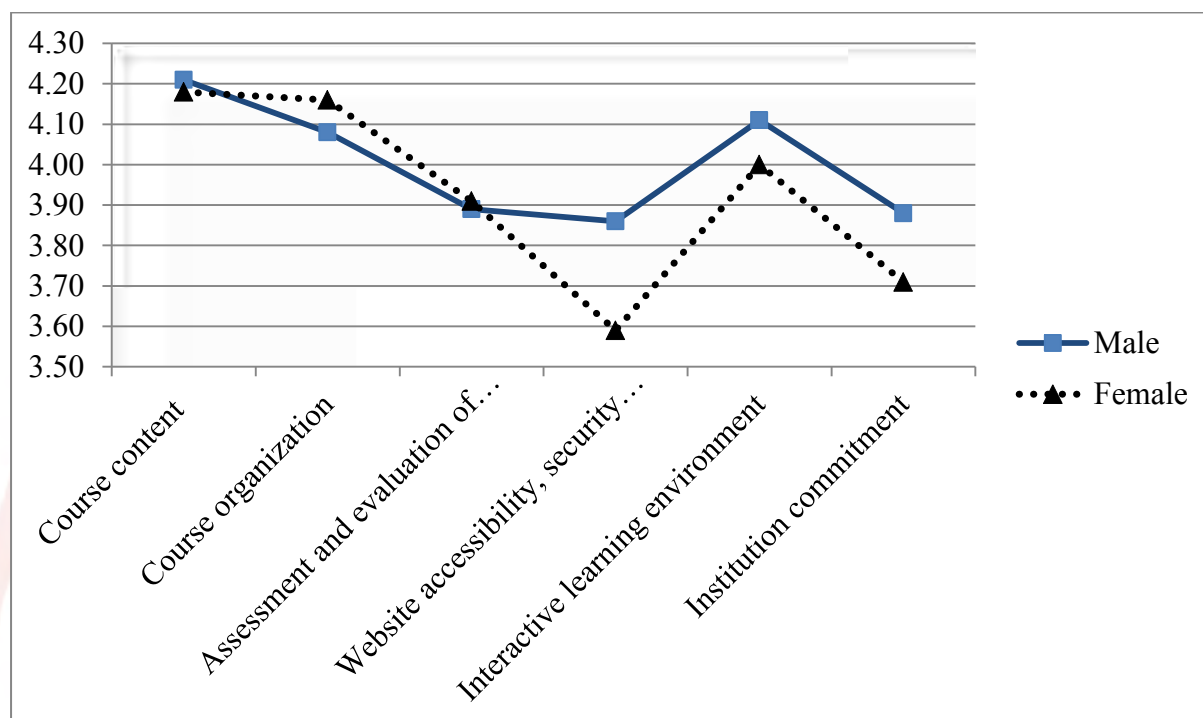


Figure 1: Mean scores for each factor, by gender

The questionnaire responses of the participants, grouped according to their years of teaching experience, were analyzed. Figure 2 shows the mean scores in each group of participants for the six factors. A noticeable trend in Figure 2 is that respondents with the most years of teaching experience, i.e., more than 10 years, were the most satisfied with the online courses for all six factors, except for website accessibility, security and support factor, when compared to the other two groups of respondents, namely, those with 6-10 years and 1-5 years of teaching experience. For the website accessibility, security and support factor, the most experienced lecturers were the least satisfied.

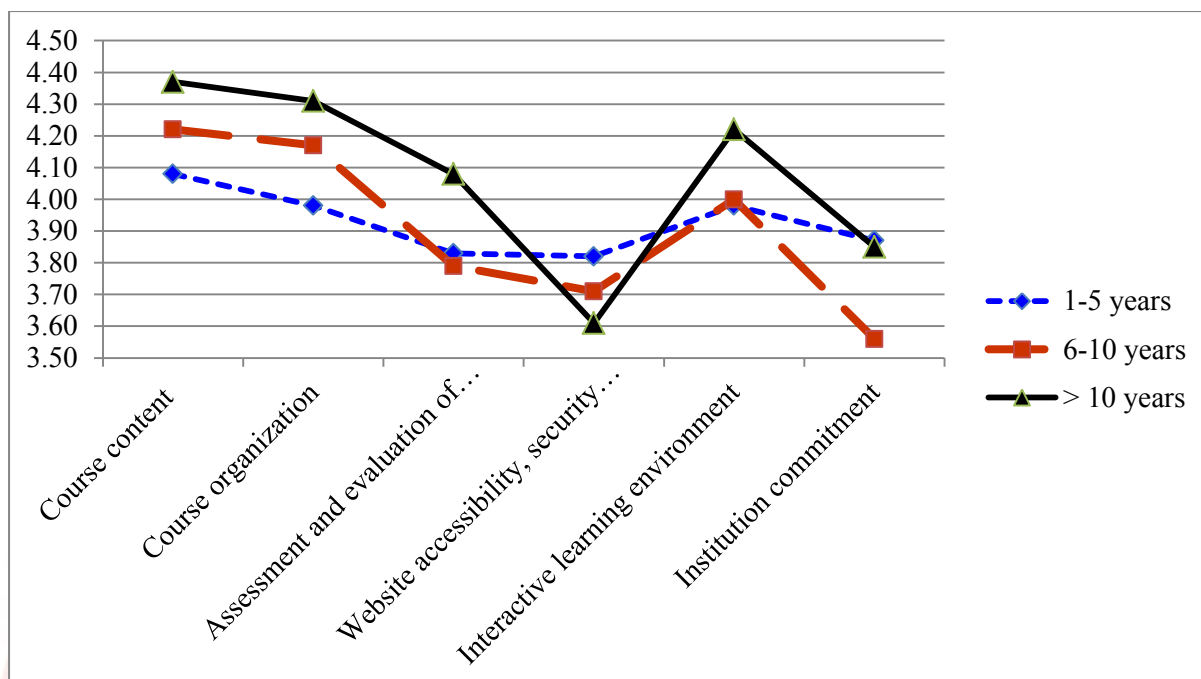


Figure 2: Mean scores for each factor, by years of teaching experience

The mean scores of the responses of the lecturers, separated according to the schools they are in, were calculated and these are shown in Figure 3 below. It is evident from Figure 3 that the School of Business had the highest mean scores for all six factors. In other words, the respondents from this school felt the most positive about the online courses with regard to the six factors. On the other hand, the lowest mean scores for all the factors were from the School of Engineering. This implied the respondents from this school, as compared to those from the other schools, were consistently the least satisfied with the online courses they have gone through where all these six factors are concerned.

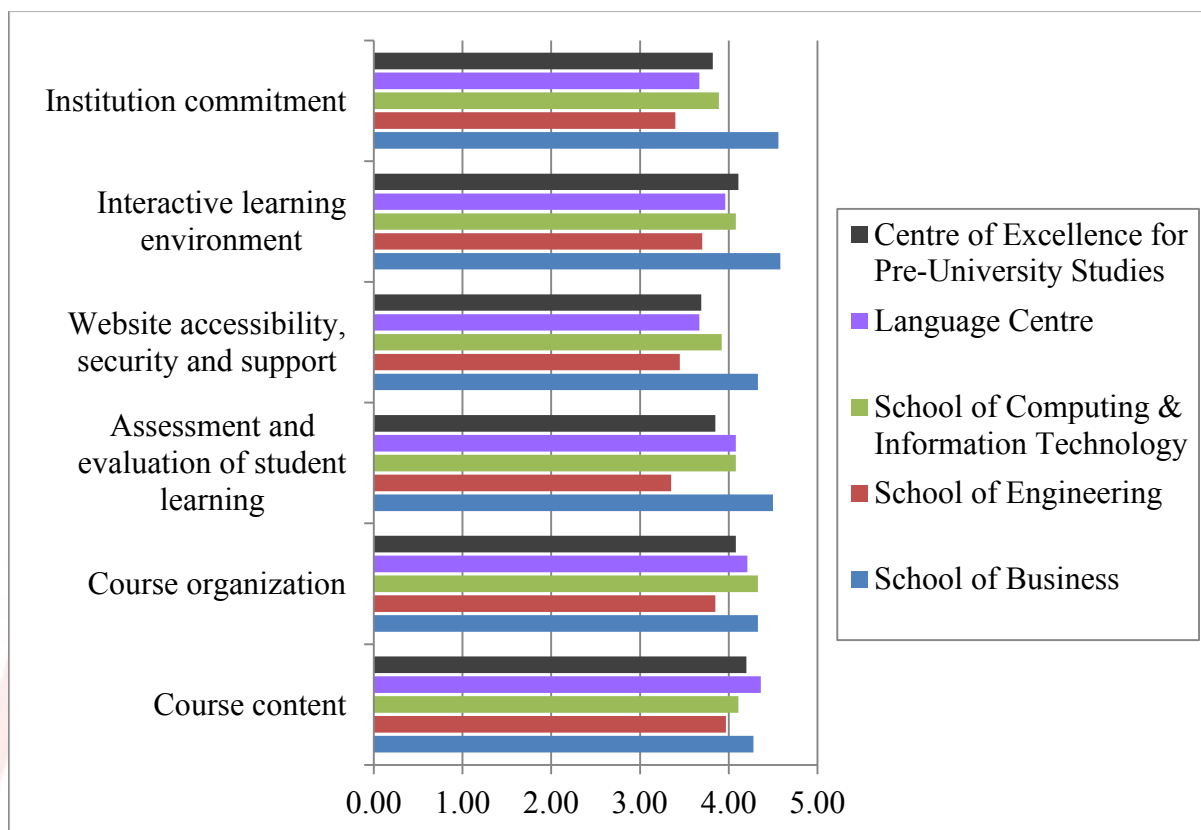


Figure 3: Mean scores for each factor, by schools

## CONCLUSION

From this small scale study that was carried out, it can be concluded that the academic staff members at this Laureate International Universities member institution were generally satisfied with the quality of its in-house online courses in relation to the six factors. With regard to the influence of gender, years of teaching experience, and the school the lecturers were working in, only three factors were seen to have a perceptible difference between the male and female lecturers. The three factors were website accessibility, security and support, interactive learning environment, and institution commitment, with the females perceiving them less favourably. Lecturers with more than 10 years of teaching experience, compared to their younger counterparts, were the most satisfied with the quality of the online courses, with the exception of website accessibility, security and support factor. Finally, the academic staff members from the School of Business were the most affirmative about the online courses in all the six factors, unlike those from the School of Engineering who were the least positive.

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Presentation of this paper at the Asian Conference on Education 2012 was funded by Universiti Sains Malaysia, Malaysia.

*Attitudes of Heritage Language Speakers Language, Language Practices and Its  
Maintenance: Case of Sinhalese in Southern California*

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0062

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

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## 1. Introduction

Language shift, maintenance and extinction in immigrant communities have been a core area of bilingualism research. Language attitudes have been one of the crucial factors that encourages language maintenance in multilingual societies. Myes-Scotton (2006, p.120) separates language attitudes from language ideologies and suggests that “attitudes can be defined as subjective evaluations of both language varieties and their speakers”. In other words, language attitudes involve personal judgments which do not have objective basis. Those language attitudes, however, have a significant role in language minority societies for the reason that the future of those minority languages depends on how speakers of those minority societies individually or collectively judge their own language and the dominant languages. Therefore, in order to understand the existence of an immigrant or indigenous minority language, investigation of attitudes of the speakers is important.

This study investigates language attitudes and practices of Sinhala immigrant children and parents in Southern California in order to understand the how attitudes affect on language maintenance. Sinhala is the native language of Sinhalese, the majority group lives in Sri Lanka. Sri Lankan government statistics report that about three million people speak the language in foreign countries outside Sri Lanka. United States has been one of the foreign countries where the most of the Sinhalese are living as immigrants. Even though Sinhala is neither an official language nor commonly used language outside the immigrant community in the US, and there is no official institutional support for the Sinhala language development in the US, it has been the most common language within the Sinhala community. Therefore, the language practices of Sinhalese immigrants and their attitudes towards their language and its maintenance deserve investigation, especially because there is no previous study done on Sinhala language maintenance in diasporic community.

The purpose of this study is to investigate language attitudes and practices of the Sinhala speaking families living in Southern California. There were three research questions in this study: 1). what are the attitudes of Sinhala speaking parents and children towards their heritage language, 2). what are the language practices of Sinhala parents and children, and 3). what are the effects of language attitudes of parents and children on heritage language maintenance.

## 2. Literature review

Heritage language maintenance in many social contexts has been studied in several perspectives in previous studies. Some of the studies specifically focused on the parents and children's attitudes towards the heritage language maintenance, and some other studies focused on the heritage language development practices in heritage families and heritage language immersion programs in immigrant communities.

Fishman (1978) proposes that the attitudes, motivation and exposure to the language are the core factors which influence the minority language maintenance. He found that the prestige of the language has been a key factor that develops language loyalty which finally results in language maintenance. He also notes that the basic pattern of non-English language maintenance during the first two centuries of the United States has been “a). rapid and wider spread adaption of English as a second language by the immigrant first generation, and b) wider spread transmission of this second language to the young as their mother tongue” (1972, p.222). Many recent research and surveys in many immigrant communities in the US and in other countries on various heritage languages, however, report mixed results of positive and negative attitudes and various language practices of parents and children that affect on their native language and its maintenance.

Martin (2009) investigated attitudes and language practices of Arabic parents' towards Arabic as a heritage language in the US. She was also looking at how epistemological racism influences the language attitudes of Arab American parents and investigated 94 Arab parents who had at least one child aged 15 to 18 years old in order to find data for five research questions: “1). What are the language practices of Arab American parents and children, 2). What are Arab American parents' attitudes towards Arabic language 3). What are level of perceived racism, 4). Are Arab parents' perceived racism significantly associated with language practices and 5). Are Arab American parents' perceived racism significantly associated with language attitudes” (Martin 2009, p.1). The findings of this study through attitudinal questionnaire reveal that Arab American parents hold positive attitudes towards their mother tongue and employ various practices to maintain the language such as speaking in Arabic in religious settings and teaching Arabic in schools etc. At the same time, she found that the racism does not have significant effect on the language attitudes and practices among the Arab immigrant families.

In another study, Zhang and Slaughter-Defoe (2009) investigated language attitudes and heritage language maintenance among Chinese immigrant families in the US. The results of this study show that while the Chinese parents value their heritage language as a resource of cultural heritage and ethnic identity and take positive actions to maintain the HL in the next generation, immigrant children do not see the relevance of heritage language learning to their life expectations; therefore, they often resist practices in HL maintenance. However, the researchers suggest that “the American mainstream schools should work together with immigrant parents and HL schools to incorporate children's HL in the official school curriculum and create a supportive environment for HL learning” (Zhang and Slaughter-Defoe 2009).

Parental attitude towards Korean language maintenance in Canada has also been investigated by Park and Sarkar (2007). They investigated parental attitudes and language practices of nine Korean immigrant families in Canada who had at least one child between ages of 6-18 years. They reported the similar results to the Zhang and Slaughter-Defoe (2009) study showing that Korean parents believe if their children have high level of proficiency in the Korean language, that would help them to keep their cultural identity as Koreans, ensure them better future

economic opportunities, and give them more chances to communicate with their grandparents efficiently.

Some scholars found various results of attitudes towards language maintenance in immigrant refugees in different societies. For instance, Terry Yang (2005) investigated Hmong refugees in the United States and found that the Hmong parents want to maintain their heritage language and pass it on to the next generation because they believe that language, culture, and tradition are the foundation of a strong Hmong family, hence they must maintain their language at home. As in many other cases, Hmong parents claim that their children resist learning and using their language in schools or at home. However, one of the significant findings of this research is that Hmong parents prefer their children to become Hmong-English bilinguals, and some parents agreed their children to become English dominant speakers (p.13). For them, native language is the marker of their identity in the English dominant society.

However, Canagarajah's (2008) study on language attitudes of Sri Lankan Tamil refugees in Toronto, London and Lancaster reported that language maintenance is not considered as a mechanism of preserving ethnic identity by the refugee Sri Lankan Tamils in those cities. Instead, they preferred preserving cultural traditions such as dancing in the immigrant community as a marker of their ethnic identity. At the same time, majority of the 500 participants of this study exhibited preference towards English over Tamil for the purposes of economic stability and social mobility.

Scholarship in Heritage language maintenance not only focuses on parental and learners attitudes towards heritage language, but researchers are also interested in the role of heritage language immersion programs and language practices in and outside the family. For example, Otcu (2010) investigated the role of a Turkish Saturday school in the United States in helping students maintaining the Turkish language and sense of Turkish identity using the method of linguistic ethnography. Employing the Gee's discourse analytical frame work, the researcher analyzed the findings drawn from the school's administrators, teachers', students' and parents' beliefs and practices on Turkish. He found that there are five overarching goals of the Turkish school: "1) connection building: the school as a bridge to Turkish heritage, 2) collectivity building: bringing together the Turkish speech community, 3) contentment building: building a Turkish American identity in the U.S. and 4) identity building: building a Turkish American identity in the U.S, and 5) diversity indicating: enabling the school clientele to see themselves as one of many other ethno linguistic groups in the United States" (Otcu 2010).

In another study, Oriyama (2010) examined the role of schooling and ethnic community contact in Japanese heritage language maintenance and identity formation in Australia. Employing three groups of Japanese-English bilingual youth and their parents in Australia, she collected data through surveys and narratives of the participant groups. She found that community schools had

a greater effect on Japanese HL maintenance and identity formation in children with the support of home, community and peers. Interestingly she found, contrary to most of the other research, positive attitudes towards English-Japanese hybrid identity and heritage language maintenance.

Most of these previous studies conclude the fact that parental attitudes are more positive towards their language than those of their children. Second, heritage language has been considered as the most important identity marker of the ethnicity in many immigrant communities. Third, language practices and formal heritage language development programs have greater impact on both attitudinal and proficiency development in heritage children than parental motivation or self motivation.

Current study investigates language attitudes of Sinhala heritage learners and their parents and language practices in families and community. Most importantly this study will compare the parents' attitudes with their children and the children's language attitudes with their language proficiency in heritage language. Such a nuanced analysis will uncover the interrelatedness among parental and children's attitudes and the language proficiency of the children.

### **3. Methodology**

#### **3.1 Participants**

Five Sinhalese families living in Southern California participated in this study. One parent and one child from each family participated and the participants of the study were divided into two groups as parents' group and children's group. Parents group consisted of 10 participants, five males and five females, age ranged from 40-50. In the children's group, there were five males and five females, age ranged from 15 to 18. Parents were either Sinhala monolinguals or Sinhala dominant Sinhala English bilinguals. Children were English dominant bilinguals and educated in English.

#### **3.2 Data collection**

Data was collected mainly through a background and attitudinal questionnaire and language proficiency tests. Questionnaire was designed based on the attitudinal questionnaire of Oriyama (2010, pp.101-109) and Romaine (1990, p.303). Two separate questionnaires were distributed in two groups. Each questionnaire had three parts. Part one included demographic questions, and

part two consisted of questions regarding participants' language proficiency and language practices at home and in the community. Questions of part three were looking for the participants' attitudes towards majority and minority languages of the family and community. First two parts of the questionnaire included open ended questions, and the questions in the third part were close ended. Both parents and children filled out the appropriate questionnaire in maximum of 30 minutes.

Only the children's group participated in the oral and proficiency tests in Sinhala. They were asked to judge the grammaticality of ten ungrammatical sentences in Sinhala in the written proficiency test. In the task, they were required to judge whether the sentence is right or wrong and if any sentence was judged to be wrong, what was the wrong about it. The test lasted in 30 minutes. In the oral proficiency test, they spoke about their home country in Sinhala for ten minutes. All speeches were recorded for error analysis.

### **3.4 Data Analyses**

Data derived from three tasks were statistically and qualitatively analyzed.

Each answer for the attitudinal questions was assigned a score within the scale of 4 to 0. Most positive answer for each question was given the maximum score of 4.0 and the most negative answer was given the score of 0. Neutral answers were given scores of 2-3 according to the degree of positive relevance to the question. Each participant's Attitude Indicator Score (AIS) towards their language were measured on the basis of the overall score they earned.

In the Writing proficiency Task (WPT), total errors were calculated and each participant was given a score out of maximum of 10. In the Oral Proficiency Task (OPT), only two types of errors were marked. If any speaker made a gross grammatical error in his speech he/she lost one point, and if any participant switched into English, minimum for one full sentence within the speech, he/she lost one point at a time. Only those two aspects, oral grammar and good command in unmixed Sinhala, were taken into account, because the objective of this test is only to measure the basic communicative abilities of the participant children in Sinhala speech rather than measuring their native like proficiency in heritage language. Overall oral proficiency of the participants was evaluated by a scale of 0-7.

Finally, percentages of scores across three tasks were calculated. Overall parental attitudes compared with the children attitudes and their language proficiency levels. Further, the language practices in the participant families and in the communities were qualitatively analyzed.

## 4. Results and Discussion

### 4.1 Language Attitudes and Proficiency

Attitude Indicator Scores for children (Table.01) show that no child exceeds the level of 75% of the positive attitudes towards their mother tongue. Only two participants (4 and 6) reached the AIS above 50% and there are five participant children who scored 25% or below. Mean percentage of positive attitudes of children is 34.1% which means that the Sinhala immigrant children hold negative attitudes towards their mother tongue.

Participant	Score	%
1	14	25
2	9	16
3	13	23
4	38	67
5	22	39
6	39	69
7	12	21
8	22	39
9	8	14
10	16	28

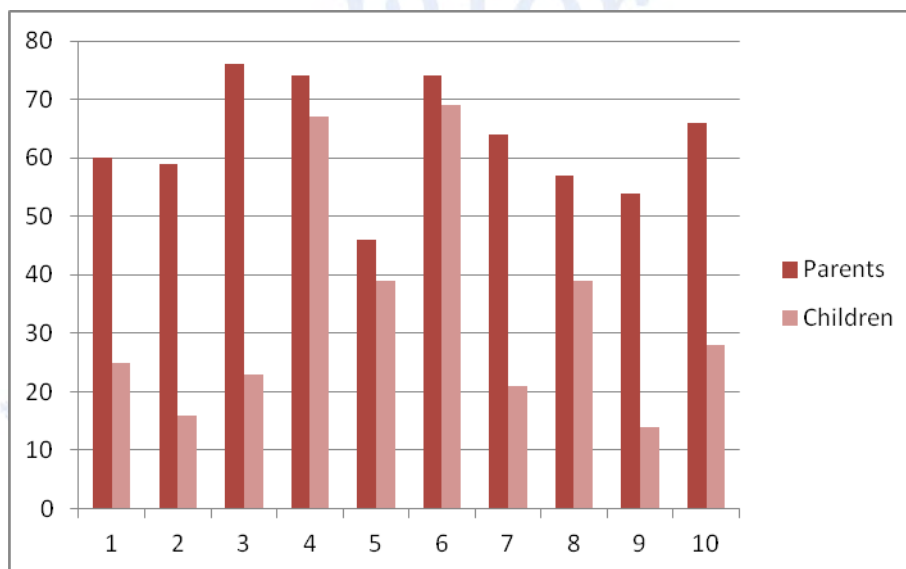
Table.01 Children's Attitude Indicator Scores

Parental attitudes towards their mother tongue (Table.02) show that nine of the ten participant parents hold above 50% of AIS where as only one parent hold 46% positive attitudes towards Sinhala language and its maintenance. They maintain mean AIS of 63%, which means that even Sinhalese parents do not have strong positive attitudes towards their mother tongue and its maintenance. But the statistical analysis confirms that the AIS for two groups are significantly different. A paired samples t-test was conducted to evaluate the difference of the AIS of two groups. There was a statistically significant difference between the parents' group ( $M=63$ ,  $SD=9.73$ ) and Children's group ( $M=34.01$ ,  $SD=19.71$ ),  $t(9)=5.12$ ,  $p=.00$  (two tailed) (Appendix 4:3).

Participant	Score	%
1	34	60
2	33	59
3	43	76
4	41	74
5	26	46
6	41	74
7	36	64
8	32	57
9	30	54
10	37	66

Table.02 Parental Attitude Indicator Scores

Even Graph 01 clearly suggests that there is no significant effect of the parental attitudes towards language on their children's language attitudes as 60% of the participant families (1, 2, 3, 7, 9, and 10) report at least 49% of difference in AIS. For example, parent 3 had the highest AIS of 76% where as his child scored only 23% which is the fourth lowest score in the group. Only the families 4, 5 and 6 maintain the minimum gaps between attitudes of parents and children.



Graph 01. Parents and children's Percentage Attitude Indicator Scores

Results for the GJT reveal that 50% of the participant children scored 50% or more scores at the task (Table. 03). One child reported 20 % and another child scored 30%.

Participant	Score	%
1	6	60
2	6	60
3	3	30
4	8	80
5	4	40
6	9	90
7	5	50
8	4	40
9	4	40
10	2	20

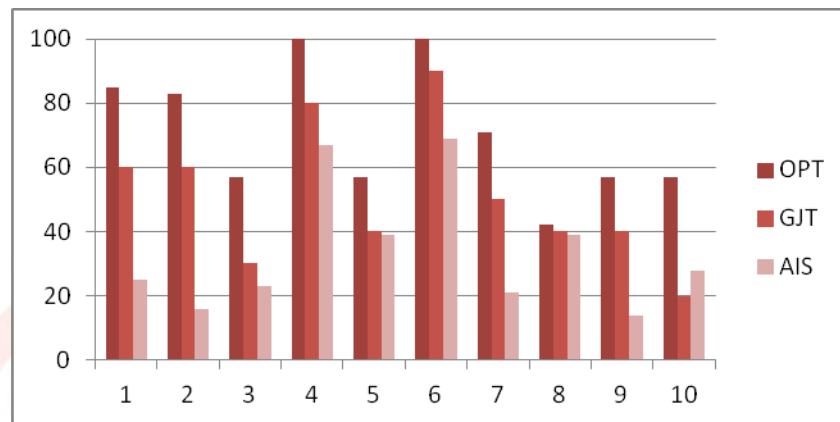
Table.03 Grammaticality Judgment Test scores

At the OPT, however, scores were higher than at GJT for all participants (Table. 04). Two participants reported the maximum accuracy (100%) in the task where as only one participant scored below 50% (P8-42%). A paired samples t-test was conducted to evaluate the impact of instruction on the performance of the children on two tasks. Statistical analysis shows that there is a significant differences between the scores of GJT ( $M= 51.00$ ,  $SD=21.833$ ) and OPT ( $M= 70.90$ ,  $SD=20.130$ ),  $t(9) = 6.613$ ,  $p=.000$  (two tailed) (Appendix 4:1). Performance of the participants at the two language proficiency tasks. These results suggest that the Sinhala heritage learners are more proficient in oral language than the writing.

Participant	Score	%
1	6	85
2	5	83
3	4	57
4	7	100
5	4	57
6	7	100
7	5	71
8	3	42
9	4	57
10	5	57

Table.04 Oral Proficiency Task

Graph 02 reveals, however, that there is correlation between attitudes and the language proficiency for three participants. Participants 6, 4 report the two highest AIS respectively they out performed the other participants at the Language proficiency tasks as well. Participant 8 reports almost similar scores across three tasks, and AIS for participant 10 is higher than her GJT scores. Overall scores suggest, however, that the children's attitudes lag behind their performance.



Graph 02.Children's Scores Across Three Tasks

At the sametime, statistical analysis reveals that there is a correlation between parents' attitudes and the children's performance on the two language proficiency tasks. Paired sample t-test that was carried out to evaluate the correlation between parental attitudes and children's overall language performance. There is no significant difference between parental attitudinal scores ( $M=61.5$ ,  $SD=20.47$ ) and Children's mean percentage scores of language proficiency tasks ( $M=61.20$ ,  $SD=11.09$ ),  $t(9)=.05$ ,  $p=.96$  (Two tailed)( Appendix 4:4), but there is a significant difference between children's attitude scores ( $M=34.10$ ,  $SD=19.70$ ) and mean scores of their language performance ( $M=61.5$ ,  $SD=20.47$ ),  $t(9)=4.891$ ,  $p=.001$  (Two tailed)( Appendix 4:2).These results mean that the Sinhalese children's language performance is motivated , among other factors, by the parental attitudes rather than their own interests in the language.

English is the most important language for the majority of parents (70%) and children (80%).Reason is that it is the language of the majority in society.40% of the parents belive that their children would be able to communicate with the relations in home country if they learn Sinhala language and 30% belive that their children should learn it because it is their first language. Majority of the Children (60%), on the other hand, learn Sinhala language because their parents want them to learn the language. Only majority of the parents (80%) belive that the maintenance of their language is the most important matter for their community where as 60% of the children do not agree with the suggestion.Both parents and children, however, believe that language maintenance is a very difficult task.

Both parents (80%) and Children (70%) think that they can not maintain their culture and identity without learning their mother tongue, but only the parents (80%) belive that the main purpose of teaching of sinhala language is to give their children a Sinhalese or Sri Lankan identity. In contrast, children (60%) learn Sinhala language inorder to be able to study their heritage knowledge in Buddhism, indeginuiuos medicine, literature, ect.Being more profecienct in Sinhala language is belived to be an obstacle for children (70%) to find a good job. 40% of their

parents think that there is no any disadvantage their children being proficient in Sinhala. Two parents thought that it would be a challenge for their children to find a job, and four parents think that their children will be subjected to humiliation by their peers if they are more proficient in mother tongue.

Most of the children prefer American as an ethnic identity over Sri Lankan identity though, majority (80%) of them identify themselves as Sri Lankan American. Their parents (70%) prefer Sinhala as an ethnicity and they (60%) want their children to be identified as Sri Lankan American as well. 30% consider that they should be Sinhalese and one parent believes in Sri Lankan identity. None of the groups believe that their language and culture are valued in the US but both groups are glad that they can speak and write in Sinhala language.

#### **4.2 Language practices**

Language practices in the families and community may be the reason for the children's higher proficiency level in OPT than GJT. All parents reported that they use Sinhala only or mostly Sinhala language to communicate with the children. Participant children also confirm the parents' language practice. Children use Sinhala language as much as possible to communicate with their parents even though their language outside the family is English. At the same time, they prefer entertainment in Sinhala. 50% of participant children watch Sinhala films 60% of them watch either TV news in Sinhala or teledramas. Frequent visit to home country might also have effected their higher proficiency in oral language. Five participant children visit their home country once a year and four children visit once for two years. The more exposure to oral language might have effected the greater fluency in Children's oral language.

On the other hand, 70% of children read books or news papers in Sinhala only once a month. The rest are not quite certain about their reading frequency in Sinhala. Most importantly 80% report that their weaker reading and writing skills is the major difficulty for them to develop their Sinhala language skills. Even though most of the parents report that they allow their children read news papers (40%), books (50%), magazines (40%), and internet (40%), children seem to be reluctant to use those resources. Only one child reads news papers and five children read books in Sinhala while no one reads magazines and four use internet resources in Sinhala. This tendency contradicts with their language learning purposes because the majority reported that they want to read subject knowledge in Sinhala language. Inadequate family and community support to develop their reading and writing skills may be the reason. Only three children are strongly satisfied with the family support to develop their language skills and two children are strongly unsatisfied with the family support while another two are unsatisfied. Five children are neither unsatisfied nor strongly unsatisfied with the community support they receive in order to develop language skills; therefore, majority of the children (70%) suggest that community should initiate formal heritage language immersion classes. They further suggest that the Sunday school and other cultural events

may be beneficial to improve their language skills. Five children propose that the US government should initiate such heritage language classes while the other five children oppose to the proposal.

Even though parents are satisfied with the family instruction for their children, they are not interested in the community support they have. They do not think that supplementary schools are sufficient alternative for heritage language immersion classes. They also do not believe in the US governmental support towards formal Sinhala language classes, instead, they believe in special Sinhala language classes for their children such as heritage language immersion class. In addition they think that more opportunities for their children to engage in cultural events in the community might improve their language skills.

## 5. Implications

Findings of this research confirm the idea that language attitudes have greater effects on heritage language maintenance (Fishman 1972; 1980). Both statistical analysis and qualitative analysis of the findings show that positive attitudes of the parents have a significant role in improving language skills in the heritage language learners. These results lie parallel to the findings of the other heritage communities (Yang 2005; Park and Sarkar 2007; Zhang and Slaughter-Defoe 2009). It has also found evidence that attitudes of the heritage language learners lag behind those of their parents.

Most importantly, as oppose to the findings of many previous studies, this study reveals that the heritage learners and their parents do not rely on their language competence as an identity marker of their ethnicity even though they believe that their language should be maintained in the US. Majority of the Sinhalese in Southern California prefer hybrid identity as Sri Lankan Americans rather than Sinhalese or the Sri Lankans. This is an important indicator of the tendency to accommodate new language, culture and society.

The findings of this study also support the idea that the exposure to the language in improving heritage language has a greater importance. Home language of the participant families, frequent visits to home country and access to heritage language through media have been the key practices that keeps heritage language learners oral skills improving. On the other hand, the findings of this study confirm the ideas of Myers-Scotton (2006, p.103) who claims that minority languages rarely can survive in all domains. For instance, Sinhalese heritage learners are at a risk of losing their language in writing and reading because of lack of opportunities, motivation and mechanisms to develop those skills; therefore, this study implies that members of the community should take the appropriate measures to develop their childrens' writing proficiency in order to

be able them to access to the heritage knowledge that they preferred the most. As the most of the participants suggested for a formal heritage immersion class, that would be a possible solution.

In addition this study suggest that the Sinhala community in Southern California should take necessary measures to preserve their cultural heritage by implementing community orientated activities which their children could engage in. Otherwise Sinhala language is at a risk of extinction across generations.

## **6. Limitations**

Smaller sample is the major limitation in this study. Appropriate sample in a future research will justify the claims made in this study. At the same time, within the limits of this study, I did not investigate the attitudes and practices of the both parents in participant families. Therefore, some findings of the research may have limitations, as the language performance of the children may be influenced differently by each parent. In addition, more ethnographic data is required for more nuanced analysis of the language practices in the family and in the community. Such an in-depth investigation will draw much clearer picture of what is happening in Sinhala community in Southern California in regard to their language and its maintenance.

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*A Non-Native Speaker's Language Acquisition and Learning in a Non-Native English-Speaking Context: A Case Study*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

This Second Language Acquisition (SLA) investigation aims to provide key concepts and insights related to the specific pedagogic situation of the subject. The case study approach, a qualitative research method, has been employed to look at a non-native speaking young adult's English language learning situated within a non-native English-speaking environment. Apart from the case study approach, this paper has employed an ethnographic orientation with retrospective journal entries to capture in detail the subject's learning activities. More specifically, this paper seeks to provide relevant SLA and English Language Teaching (ELT) theories and reflections attendant to the subject's learning experience. Because of the very nature of a case study, the findings in this paper do not attempt to provide conclusive remarks. Rather, it is hoped that such information be of help to both language teachers and learners eventually helping minimize whatever gaps there are between the language teacher's scheme of teaching and the language learner's scheme of learning.

**Key words:** SLA, ELT, second language acquisition and learning

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## Introduction

The field of Second Language Acquisition (SLA) has always been a fascinating area to explore primarily because of the nature of language learning itself and the whole myriad of complexities that comes with it. Along this line, Vivian Cook (1991) underscored the significance of having teachers understand the reasons behind people's wanting to learn languages and the process how such knowledge is absorbed and learned. Rod Ellis (1985) stated that

...unless we know for certain that the teacher's scheme of things really does match the learner's way of going about things, we cannot be sure that the teaching content will contribute directly to language learning. (p. 4)

Hence, when studying SLA cases, it is imperative that not only the nature of the target language be considered, but also the milieu within which said learning takes place dovetailed with L1 learning. This does not perfunctorily presuppose that L1 learning directly influences the L2 learning paradigm or that L1 acquisition and learning will yield exactly the same developmental stages as the L2 experience. However, because of the very rich resource correlating the L1 to L2 acquisition and learning routes, the complexity of the entire process offers a number of possibilities concerning the L1 and L2 interface. Moreover, in a typical non-native-speaking (NNS) learning context where L2 students constantly grapple with the intricacies of learning a second or a foreign language, learning from a non-native speaking learner's experience proves significant.

Lastly, this paper subscribes to Widdowson's (2010) "mediation," taking the "linguist's abstract version of reality" and referring it "back to the actualities of the language classroom" (p. 12).

## Conceptual Framework

Below are relevant theories and discussion meant to help situate this research in context.

The first hypothesis is anchored on Stephen D. Krashen and Tracy D. Terrell's (1996) the Natural Approach. It centers on the distinction between acquisition and learning. It states that adults who are learning a second language employ two different means of developing language skills and knowledge. To acquire a language means to 'pick it up' allowing him to develop the ability to use it naturally and communicatively. To learn a language, on the other hand, means to be more aware of the grammar rules that govern a certain linguistic structure via language teaching or guidance from a language teacher. In short, exposing a language learner to the target language (TL) is not enough. One has to study formally the language, its rules, and conventions to fit himself in.

The Affective Filter is another hypothesis this study corroborates. This hypothesis focuses on the language learner's emotional state while actively learning. The Affective Filter is "an adjustable filter that freely impedes, passes, or blocks input needed for acquisition" (Krashen, 1988, p. 133). Built around SLA research, it identifies three forms of affective variables: motivation, self-confidence, and anxiety. This hypothesis states that language learners who have low affective filter are deemed more "open" to the input that "sinks" more deeply as opposed to language learners whose affective filter is high and are, therefore, less willing to absorb the lessons taught them (Richards & Rodgers, 2001). In return, learners who have lower affective filter are more capable of knowing more about the language rules and conventions and using/ producing the language more satisfactorily.

While Stephen Krashen's theories are considered a landmark on which this study is hinged, said principles left some gap. This study explores and offers the possibility to either narrow or close that gap. In so doing, it also anchors its framework on the importance of output and interaction theories. The gap resulted from Krashen's theories arguing that it is only input that matters in L2 learning (Krashen, 1981). Output and interaction theorists are keen to note that a successful L2 learning happens not only because of a learner's exposure to comprehensible input, but also because of his output brought about by interactions with other speakers. With Krashen's only-input-matters tenet, output theorists believe "that the act of producing language (speaking or writing) constitutes, under certain circumstances, part of the process of second language learning" (Swain in Hinkel, 2005, p. 471). Interactionists, on the other hand, argue that learners are given the chance at seeing, exploring, and using whatever differences there are between their own production of the language and that of others (Gass & Mackey, 2006). In effect, the interactionists claim that being able to identify one's differences from others' allows him to learn how to modify relevant language performance when needed.

## Materials and Methods

### Research Questions

This case study aims to address the following research questions:

1. What are the typical developmental stages that one goes through within a second language acquisition and learning context?
2. What approaches to and issues in language teaching are most relevant and/ or observed to have played key roles in this particular study?
3. What implications/notes of experience do these language teaching approaches have which both language learners and teachers can draw knowledge from?

### Data-gathering Instruments

The case study approach, a qualitative kind of research, was chosen to capture the details surrounding the subject's L2 acquisition and learning experience inside and outside the classroom. Such approach allowed the author to catch the unique features inherent in the gathering of data in this study (Nisbet & Watt, 1984). It also permitted the author to have a lengthened engagement with the subject and other participants through interviews and detailed accounts leading to obtaining a better perspective of the entire investigation. Coupled with this was the author's use of retrospective journal entries to further substantiate the data gathered. Through such journal entries, an ethnographic orientation was utilized as well. Such a method afforded the author to collect comprehensive information about behavior, events, and other facets of the subject's attitude and activities, providing an ethnographic orientation and standpoint. One key strength of the case study approach, as used in this investigation, was the author's use of multiple sources in pertinent data. The tools used to collect data were the following: interviews, documentation review, and observation. This case study involved two separate learning contexts, that is, the subject's learning of the English language in a formal school setting and during the tutorial sessions the subject had with the author.

### Participant

The subject, a 15- year old boy, was originally from Ho Chi Minh City, Vietnam. After having spent his first year in high school in his mother country, Quang<sup>i</sup> transferred to a private Catholic high school in Manila, Philippines to join his mother. Quang was admitted as a second year high school student in a Catholic school where he had to attend weekday classes. It was an

arrangement different from his former classes in Vietnam where he attended daily classes on a half-day basis, with afternoons spent doing group studies and tutorial sessions. In Vietnam, all his subjects were taught in his native language. English was taught as an elective course. His other language, however, was French. In the Philippines, on the other hand, he had to use English in most other subjects, except for some compulsory ones, such as Filipino.

### Data collection

Data gathering and observation, lasting for 15 months via 185 two-hour sessions, began when this author tutored Quang. The author witnessed from the very beginning Quang's L2 acquisition and learning, enabling her to conduct an ethnographic observation crucial to formulating many relevant research questions. In this study, *language acquisition* should be taken to mean "gaining knowledge or ability through a more natural and informal means," whereas *learning* means "gaining knowledge or ability through being taught in a deliberate, usually formal, manner" (Lin, 2004, p. iii).

The period of study correlating to the subject's language development was divided into three: (1) The Regulation/ Hesitation Stage, (2) The Transition/ Repetition Stage, and; (3) The Semi-Spontaneous to Spontaneous Speech Stage. Discussion of the subject's language developmental stages vis-à-vis the findings are provided as well.

## Results and Discussion

### The Regulation/ Hesitation Stage

The author gathered significant amount of data from her conferences with Quang's classmates and teachers. Duc, Quang's fellow Vietnamese classmate and friend, was instrumental as well as the author was able to use him as her point of reference for Quang's own development. Quang and Duc both lived in the same residential compound. Since Duc started studying in the Philippines a year earlier, interviews and voluntary inputs from him proved very helpful in this investigation.

The first three months of the author's tutorial sessions with Quang can be described as The Regulation/ Hesitation Stage. Having been in the Philippines for only a few months, Quang did not feel ready to converse spontaneously especially with strangers. He had been with a language teacher who always communicated with him in English, a language he did not use back home. At this stage, Quang went through what is called the silent period, a phase in language learning when a learner typically chooses not to talk and verbalize his thoughts. During this time, Quang was assumed to be processing his own thoughts and trying to assimilate whatever input he got from his current learning context. Short responses, nods, facial expressions, and gestures dominated the initial conversations between him and this author. Earlier in the sessions, Quang would give one-word replies such as "yes," "hmmmm," "maybe," "aha...", and "no." Quang, at this stage, was going through the stage of learning formulaic chunks of his target language. On this note, it can be said that one's silent period does not mean complete silence. Quang's silent period experience, however, cannot be considered an isolated or a unique case. Various studies prove that different learners vary in this regard. While it is seen as an important phase that allows learners "to discover what language is and what it does... it is not obligatory" (Ellis, 1994, p. 82).

The author, resorting to Total Physical Response (TPR), did not force him to speak in English, but acted out words, phrases, and other utterances that he could not understand verbally. TPR, a language teaching approach developed by James Asher, refers to a language teaching method that

requires synchronization between one's speech and action teaching the target language (TL) through physical or motor tasks (Richards & Rodgers, 2001). During this first stage, the author often directed her speech by giving some commands to which he responded physically before attempting to answer verbally. This pattern lasted for three months. During this period, Quang slowly grew more at ease with the author, seeing her as his companion in his journey to language learning, rather than as a threatening presence to his language learning ability. Despite Quang's inability to string out complete sentences, he generally understood the author's instructions as evidenced by his corresponding answers.

However, amidst said changes happening to Quang, he distanced himself from others. Remarkably, he was attentive to any of his classmates who recited in class. Duc mentioned that Quang occasionally would ask him for word meanings. During said conversations, Quang used his L1. It was also at this time when Quang showed interest in his classmates' activities, particularly in seeing other boys fight. He often made personal remarks about such fights, albeit in his own language. This behavior marked his slow, but steady show of interest in the people around him although he was clearly avoiding conversations with anyone using the English language.

Within the confines of his own home, Quang was warm, friendly, and often animated with Duc, quite the opposite when he was at school. Some changes were seen, though, when he was on his third month of studying. Quang showed strong interest in his frequent conversations with one official, Mr. Nguyen, who often dropped by the study area where he and this author met for tutorials. Mr. Nguyen would speak to him in English, but Quang would typically hesitate to talk. If he did, he responded sparingly. At one point, however, Quang started becoming more engaged in their conversations. He started responding to Mr. Nguyen's questions although his replies were in Vietnamese. This happened towards almost the end of this stage, the Regulation/ Hesitation Period.

#### The Transition/ Repetition Stage

When it was Quang's fourth month in school, he went through some noticeable social changes. Whereas Quang was hesitant in mingling with his classmates in the beginning of the second stage of his L2 learning, this time he started becoming overtly interested in listening to them. He started becoming more sensitive to the activities of the people around him, watching them speak and engage in various activities. He also opened up by playing outdoor games with them and by having some conversations with his classmates through chunking. Below is a sample conversation between him and a classmate:

Classmate: So where do you come from?

Quang: Vietnam.

Classmate: How are you called?

Quang: Me? Called? Vu Quang.

Classmate: I mean, your nickname.

Quang: Oh, nickname? [long pause] Quang.

Quang's development became more noticeable, but alarming at the same time, especially when one of his classmates cracked a joke that he could not relate to. His attitude of indifference toward such a classmate turned out very pronounced that, at one point, he became utterly angry. Believing he was the subject of his classmates' conversation, he reacted by inflicting harm. Although his language development was already advancing at this point, he still could not fully comprehend conversations.

Finding the situation as an opportunity to get Quang to open up and be comfortable in using the language, the author used this event for him to vent out his emotions, making the situation a meaningful exercise. This author allowed him to talk freely about his feelings regardless of the language production errors he committed. Quang, in return, unhesitatingly let out his feelings about what happened. From their conversations, the author also learned that Quang was feeling homesick. He missed the company of his friends in Vietnam. He said he did not really like to come to the Philippines, but only did so because his mother obliged him. Interestingly, during this conversation and in the succeeding ones, Quang already used some English words more frequently than before. However, at home, he only used English during tutorial sessions. When conversing with his mother and others from his country, he spoke in his L1. This could be explained by the fact that everybody in the neighborhood spoke in the L1, except for a few diplomats who would occasionally drop by to exchange a few words with the author.

With the author's encouragement, Quang started getting himself familiar with the English sounds by imitating her. The author would model out to him how to pronounce a prepared set of words every meeting. Given Quang's approximations of the sounds he listened to, he arrived at a number of phonological variations. The author initially thought of them as a result of an L1 and L2 interface, such that the influence of the Vietnamese syllable structure on his attempts at pronouncing the words was very noticeable.

His choice of substitutes showed how the consonant cluster /ch/ turned out to be /ts/ and the consonant /s/ came out as /ʃ/. The /dʒ/ sound for 'margarine' became /ʃai/. He also doubled the /h/ sound in 'household' producing /háwsh-hòld/. A study of the Vietnamese alphabet shows that Quang's substitution of the /s/ sound for /sh/ and /ʃai/ reflected his prior pronunciation knowledge in his native language. His /s/ sound was such because the Vietnamese alphabet, composed of 12 vowels and 17 consonants, includes the letter 's' but is sounded out either as /sh/ or /ʃai/. On the other hand, the Vietnamese alphabet's letter 'x' is pronounced as /s/. Thus, what Quang did was to apply the rules of pronunciation in his L1 and applied it in his L2 speech context.

In the latter part of the Transition/ Repetition Period, Quang started making attempts at stringing out short but complete sentences. There were times, however, when he would code switch between English and Vietnamese.

STANDARD ENGLISH	QUANG'S CODE SWITCHING
I don't like it.	I <i>khong</i> thi'ch.
No. Just fine.	<i>Khong</i> . Just fine.

**Table 1.** A sample of Quang's code switching

### The Semi-Spontaneous to Spontaneous Stage

Quang, at this stage, seemed to have reached another phase in his L2 development. Instead of simply repeating either the questions or the last few words in the question, he would go back and forth from hesitating to speak to speaking spontaneously. His repetitions usually happened whenever he would ask for clarification concerning word meanings. As things turned out, Quang already had a very clear concept of the sentence structures he was using at this point. However,

despite such knowledge, he continuously dropped the linking verbs (LVs or copular verbs) in actual conversations as shown below.

STANDARD ENGLISH	QUANG'S SIMPLIFICATION
Where are you going now?	Where you going now?
What is this, Miss?	What this, Miss?

**Table 2.** A sample of Quang's semantic simplification

Together with this, he would say *was* in place of the question word *what* and the verb *does*.

STANDARD ENGLISH	QUANG'S SIMPLIFICATION
What does it mean?	Was mean?

**Table 3.** A sample of Quang's structural simplification

When uttering sentences in the declarative form, he would also drop the linking verb. A sentence below, expressing his opinion about a classmate, shows an example of the missing linking verb, *are*.

STANDARD ENGLISH	QUANG'S SIMPLIFICATION
You are very bad.	You very bad.

**Table 4.** A sample of Quang's semantic simplification

In the next sentence, however, Quang used the linking verb *is* despite the presence of another verb *have*. He dropped a significant part of the speech though, the subject of the sentence: *I*.

STANDARD ENGLISH	QUANG'S SIMPLIFICATION
I have.	<i>Is</i> have.

**Table 5.** A sample of Quang's simplification

When asked, Quang said that he deliberately dropped the linking verbs in his sentences because he was still confused about the subject-verb agreement rule. In effect, he felt that dropping the linking verbs allowed him some space to move about without having to worry which verb to use. As regards his *is have* pattern, Quang over-generalized the rule thinking that singular subjects, whether *he*, *she*, *it*, or *I*, are always followed by singular verbs.

Analysis

The discussion that follows looks at how Quang's case validates Stephen Krashen's theories. Recognizing, however, the gap left by Stephen Krashen's theories, a discussion of relevant principles on output and interaction theories is provided to shed more light on the subject's L2 acquisition and learning experience.

Findings of this study show that Quang's experience is in keeping the Natural Approach by Stephen Krashen. While Quang was learning the English language within a formal school context and informal tutorial sessions, he was also acquiring it from his classmates and peers. This typically happened when he was using the language naturally and communicatively during school recesses. This also happened whenever his tutor would deliberately turn their meetings into more informal sessions. Conversations were freewheeling, but more meaningful. In this case, Quang dealt with his TL both formally and informally, giving himself the necessary language skills to reach his learning goals.

The Affective Filter is the second hypothesis this study validates. Quang's unwillingness to join his mother in the Philippines made his affective filter high, making his intrinsic motivation to learn either low or absent. Being away from a familiar ground made him emotionally unprepared for all the new experiences he had. Knowing he could not go back to Vietnam soon made him even more reluctant to embrace a very new experience. He admitted to being homesick, missing his father and his younger sister, his close friends, and anything that was Vietnamese. Because of that, he subconsciously put up a psychological barrier, extending its adverse effects on his studies and language learning. Because of the kind of relationship Quang had with his present social context—he was with strangers, in a new country, and in a new learning environment—he had to reconstruct his motivation and attitude, if only to make his learning experience positive (Lin, 2004). Various studies have shown that positive attitudes and motivation are typically linked to success in second language learning. Lightbown and Spada (1999) remarked that

[i]f the speaker's only reason for learning the second language is external pressure, internal motivation may be minimal and general attitudes towards learning may be negative.

Apart from being able to establish the correlation between Quang's L2 acquisition and learning difficulties, Krashen and Terrell's (1996) and Krashen's (1988) language learning theories, the author found issues that only unfolded during the observation period. These issues had led her to trace Quang's learning experience to many other factors that she did not account for in the initial conduct of this study. Additionally, these issues eventually had led this author to consider other SLA theories such as the output and interaction theories. Quang never had English, the official medium of instruction in his new school, as his L2 in his own country. He instead had French, the language of his country's former colonial master. The only time he studied English was when he arrived in the Philippines. He barely had three weeks prior to joining the private Catholic high school his mother chose for him to be acquainted with the English language. It is no wonder that in his first attempts to learn and produce various language patterns, he produced the coarsest contrasts. Undeniably, it took him great lengths to learn and produce other finer sub-contrasts before he was finally able to assimilate his spontaneous language productions into the complex structural mechanisms of his target language (TL). The same reason propelled him to avoid socializing with his classmates, confessing that he would rather not talk, lest the people around him laugh at and make him the subject of their jokes for mistakes he said he was sure to commit.

Corollary to the previous discussion was Quang's lack of support system in his struggle to enhance his English language skills. The people in the official residence where he and his mother stayed spoke only in their native tongue. English was used exclusively for business transactions.

The only time Quang could use English for communication was when he was in school. After school hours and during weekends and holidays, Quang's chances at using the English language for practice, which he badly needed, were either low or totally absent. Neither did he have access to desired input through watching English cable channels, listening to English- anchored radio shows, reading an assortment of English materials, and the like. Quang also lacked the chance to produce desired outputs (Skehan, 1998) which could have resulted from conversational interactions. Interaction theorists like Evelyn Hatch (1978), Teresa Pica (1996), and Michael Long (2003) argued that desired outputs ushered in by conversational interactions are the key to acquisition.

Part of Quang's difficulty can also be traced to the fact that his initial language productions and learning process operated not on the phonemic patterns and semantics. Rod Ellis (1994) referred to Quang's language production, as shown in Tables 2 to 5, as structural and semantic simplifications done through dropping and/ or omitting some words. First, Quang resorted to structural simplification when he omitted grammatical functors, e.g., auxiliary verbs and articles. He also committed semantic simplification, leaving out content words such as nouns and copular verbs. In the process of Quang's learning, he needed to understand the syntactic relationships involved in manipulating and producing the language. Together with all this, Quang initially attempted to string out ideas by chunking or putting two, three or more words. His effort, however, to put across his ideas before finally composing complete sentences may be considered part of the normal process an L2 learner like him typically goes through. Fourth, as illustrated in Table 5, Quang over-generalized rules for his target language thinking that singular subjects, whether *he*, *she*, *it* or *I*, are always followed by singular verbs. Thus, he produced "*Is have*" rather than "*I have*."

Chunking, referred to as the learning of formulaic language, is characteristic of L2 learning known as interlanguage (Selinker, 1972). Susan Gass and Larry Selinker (2008) further defined it as the language system that takes shape in the mind of a second language learner, one which should not be viewed as a poor or incomplete account of the target language. It may be full of errors; nevertheless, the errors should not be seen as an influence of the learner's first language. It should instead be considered as a language that has its own methodical conventions.

Long (2003) maintained that an interaction adapted to the level of the learner allows modification of the speech thereby promoting acquisition. Jianwei Xu (2011) said that L2 learners' self-confidence in using the TL is dictated heavily by outside factors underscoring the need for interaction. Lack or absence of the chance to interact with other speakers of the English language could have also slowed down Quang's development.

## **Conclusions/ Recommendations**

This case study reveals a number of concerns with regard to the subject's L2 acquisition and learning. For one, it demonstrates an L2 learner's need to both acquire and learn the TL, if only to allow him to use it in both natural and communicative ways. Second, findings show how one's affective state heavily influences the learning condition. Thirdly, a support system or a scheme that allows an L2 learner to interact with other speakers of the TL are much needed, if only to further one's developmental stages. Lastly, in Quang's case, interlanguage in the form of simplifications is a natural coping mechanism which L2 learners resort to, at times, to help them in their learning process.

To conclude, the author offers a few recommendations, which she hopes, would help both learners and teachers to have a better understanding of a learner's language acquisition and learning experience.

1. That language learners not only learn and memorize the grammatical rules and conventions governing the TL. They should also be constantly using their TL for most of their waking hours.
2. That errors produced be viewed not as errors *per se*, but, most likely, part of the process L2 learners typically go through.
3. That language learners use the TL not only for the sake of using it. It should be done in ways meaningful both to them and to other speakers who are using the language when communicating.
4. That language learners will usually find the learning process complete only when they are able to associate and infer a meaningful relationship between the TL and their own experiences.
5. That language teaching that involves L2 learners like Quang be designed in light of the above-mentioned recommendations.
6. That further investigations within the specific context of other L2 learners' own learning environment be explored. As Quang's case does not necessarily represent every L2 learner's experience, the author does not attempt to make the findings in this study conclusive in respect of learners' individual differences and other external factors that come into play.

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<sup>i</sup> Altered to protect subject's privacy

The logo for the International Association for Applied Linguistics (iafor) is centered on the page. It consists of the lowercase letters "iafor" in a light blue, serif font. The text is enclosed within a circular frame formed by two concentric, hand-drawn style arcs. The outer arc is a light red color, and the inner arc is a light blue color, matching the text. The arcs are slightly irregular, giving the logo a hand-drawn or artistic feel.

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*Developing the Inner Leader: The Journey Begins Today*

Marcel Lebrun

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Leadership means different things to different people. When people are asked to define what leadership is they often cite past heroes or political figures as example. The most common are John F. Kennedy, Nelson Mandela, Ghandi, Winston Churchill, Martin Luther King and the leaders of the 21<sup>st</sup> century. Very rarely do people mention themselves as a powerful or influential leader. We are all leaders. We are all put in situations daily where everyone is leading. It can be as a teacher, principal, office worker, camp counselor or the guy who makes your coffee at Starbucks on the way to the work. Leadership is an everyday phenomenon. It occurs every time an individual directs or encourages people to take a direction or a specific route.

Leadership is perceived as something only educated or powerful people do. If you are a normal everyday individual you do not see yourself as being all powerful and directive, yet you are. The power of influence is at hand and is easily dispensed.

In understanding leadership one must put it in a perspective that is very similar to understanding early childhood behaviors. Children often will seek out things that are fun to do, or else they find a way to have fun at what they are doing. They jump from one interest to another. They are curious and usually eager to try anything once. They smile and laugh a lot.

They experience and express emotion freely. They are creative, passionate and innocent

They are physically active. They are constantly growing mentally and physically. They will risk often, not afraid to fail. They rest when their body tells them to. They learn enthusiastically.

They dream and imagine. They believe in the impossible. They don't worry or feel guilty. (Katzenbach & Smith, 2003)

Adults often forget to do the following things when they become leaders. It is almost like a part of the brain ceases to have fun and is overtaken with seriousness, planning and manipulation. The fun is soon abandoned and replaced with a sense of duty and obligation. Effective leaders never lose their ability to think and act like children! They relinquish the constraint and substitute them with a freedom to explore and a sense of adventure. The power of early childhood thinking allows the individual to think freely and divergently.

Leaders must be aware of what is going on in their organizations to have clear understanding of what needs to be accomplished and begun. A leader who does not have an accurate evidence based evaluation of the inner working of the team or the existing structures of their organization plans to fail if wanting to implement any type of course of action.

The leader in his/her ongoing evaluation of his/her organization quickly comes to the realization that there is a need for change. Once the need has been identified the path to change must include the following:

1. Input from a wide variety of sources. Evaluation teams must be given the time to give their opinions and fact finding expeditions must be ongoing during these discussions. Individuals who will be affected by the decisions and /or changes must be part of the process. The lens that these individuals are looking through can seriously affect the success or failure of the change.
2. A focus on results. The discussions have occurred, the existing plan or structure has been clearly articulated as needing change and people are ready to look at attaining different results. At this stage of the change the question that needs to be asked is "What do we want to accomplish and what is the best way to do so?" This will focus the efforts of the team and will produce the needed results to make the change successful.
3. Communicate a vision and reinforce it repeatedly. The leader must be clear and articulate how these new changes will improve the lives of the individuals it will affect but also is for the

betterment of the organization. This vision must be clear and ambiguous enough that there is room for development and change as it evolves.

4. Show dedication by enthusiasm, persistence and problem solving. Change does not occur overnight, it is a slow sustained turtle like approach. The individual who is leading must be able to progress at the speed that the team readiness for change dictates. Trying to integrate change at a pace that is not aligned with people's ability to accept the change will be disastrous in the long run.

5. Motivate by building on their team strengths. To build an organization there must be a team. If a leader wants to effect change he or she must surround themselves with individuals that have a variety of skills, dispositions and temperaments. You want random global thinkers for the idea development and some very concrete sequential thinkers for the details and the precision thinking that is needed to implement change or to build something new. The combination of individuals is crucial to a successful change.

Change is a process that is often very fearful and people are not interested in change if what they are doing is working for them. Change becomes an issue when production, lifestyle, individual productivity, destructive behaviors or inefficiency prevents an individual or organization from being successful or innovative.

How people affect change is measured in their behaviors. There are five categories of individuals when looking at how people accept change. The first group is the Innovators: 1-3% try new ideas, risk takers, new ventures.

Second group are the Early Adopters: 13% communicators, part of the informal power structures, are respected for their judgment. They will be more cautious than innovators. They are the key group in instilling new innovations.

The third group are the Early Majority-34%: They are usually joiners, follow the lead of the early adopters, but are reluctant to accept a new idea too quickly.

The fourth group are the Late Majority-34%: This group of individual is usually skeptical and usually adopts an innovation only after social or peer pressure is applied.

The final group is the Laggards 16%: Last to adopt an innovation. This group is very dependent on the past, is not receptive to change or those who advocate change. (Rogers, 1983).

The key formula here is in understanding human behavior in that all groups are needed to be part of an effective organization. Each group plays a pivotal role in the creative process to the pragmatic logistical implementation of change within an organization. They are all needed for success. The responsibility of the leader is to know how much power to give to each group and when to intervene to have the group move forward on the vision and its full development and implementation.

The children's book *Who Moved My Cheese?* By Spencer Johnson is a wonderful example of what an individual or organization must experience to affect or invite change. The book summarizes ten life lessons.

1. When you choose to change, you gain.
2. Change imposed is change opposed.
3. Simplicity conquers complexity.
4. Life is a maze.
5. When you change what you believe you change what you do.

6. Smell the cheese often. (Cheese being the metaphor for what we want in life, job, relationship, money, freedom, health, recognition, spiritual peace, etc.)
7. Savor the adventure.
8. If you don't change you can become extinct.
9. New cheese is always out there.
10. Change and move beyond your fear to feel free.

Who knew that out of a child's book could develop such a variety of important life lessons. Each one of these life lessons can create a chain reaction that could forever change the direction of one's life, one's interactions with people on a daily basis and one's ability to leave a legacy. The power of children's literature!

Vision is often cited and touted as a necessary component of effective leadership. How does one define vision? What is the difference between vision and powerful vision? Is vision uniquely individualistic or a collaborative effort?

Marjorie Parker in her book *Creating Shared Vision* speaks of vision as having to have several key components to be effective. She describes vision as something that is described as a preferred and meaningful future state. It has to have a purpose. The vision must be something that can be articulated.

Vision must evoke images in the mind of others. People need to see what this vision entails. Is it described in measurable and observable outcomes? Can individuals wrap their thinking around what the vision will accomplish or change? The answer must be yes.

Powerful visions will give people a better understanding of how their purpose could be manifested. Being part of the planning and execution of the vision empowers people to be better engaged and supportive of the vision.

If a leader possesses a vision that can motivate even in hard economic times and in times of conflict, people will pay attention. Organizations and the individuals within these systems want to know that they will be protected, and /or taken care of financially during these troubling times. The vision must be about hope but also be realistic and achievable in a reasonable amount of time.

Leaders must develop a vision that is achievable, genuine and comes from the heart. A vision based solely on economic financial growth may forget a key ingredient, the people who work within that organization. The success of any vision depends on people's willingness to be part of the change but also to do the work towards effecting change.

A vision must be lofty, challenging and compelling for it to be effective. Setting the bar too low never achieves great results. It does achieve changes, it does produce results, though sometime mediocre and these changes are measurable. Powerful visions must not settle for the tried and true and must challenge all individuals and systems within the organizational structure that it lives in. It is imperative that a leader have a vision that will create movement towards change. Otherwise is it really a powerful vision, or is it just good management?

Leaders must have some very specific traits and dispositions to be effective and effect change. Stephen Seay and Stephen Macchia both agree leaders must possess the following attributes to be fully successful as effective leaders of change:

Honesty - Displays sincerity and honesty in all actions. Deceptive behavior does not inspire trust.

Competent - Bases actions on reason and moral principles.

Forward-looking - Sets goals and has a vision of the future. Effective leaders envision what they want and how to get it.

Inspiring - Displays confidence. Takes charge when necessary.

Intelligent - Reads, studies, and seeks challenging assignments.

Fair-minded Broad-minded - Seeks out diversity.

Courageous - Has the perseverance to accomplish a goal, regardless of the obstacles. Displays a confident calmness when under stress!

Straightforwardness - Uses sound judgment to make a good decision.

Imaginative - Makes timely and appropriate changes.

Shows fair treatment of others.

Many leaders if they are truly reflective are able to use this list as guiding principles towards becoming effective leaders. Being able to be honest in one's self analysis and evaluation is key towards having people perceive you as the leader. The dispositions listed above are the starting point to becoming and evolving as a present or future leader. Leadership is both transformative for the individual as well as the organization.

Douglas Fisher and Nancy Frey in their research and writings have indicated that there are five key lessons that an effective leader must learn early on to be successful.

Lesson 1: Spend time doing things you care about.

Lesson 2: Be the teacher/worker you want to hire.

Lesson 3: Talk with the students/staff often, and talk about things that matter.

Lesson 4: Surround yourself with good people, then get out of their way.

Lesson 5: Nurture partnerships, especially those that benefit school/preschool/organization

Following these guiding principles allows a future leader to gauge their performance and their abilities. It allows an individual leader whether new or veteran to be reflective about what they are bringing to the organization. It encourages the leader to build relationships through their own self-awareness. Leaders who are not self-aware are missing an opportunity to see themselves in action. The lack of self-awareness will often lead to increase conflict and migration to positions that are opposite to what the leaders wants to achieve.

Leaders who are able to develop synergy with groups of people are often able to effect change. Leaders must have an excellent understanding that the energy of a group is always potentially greater than the sum of the combined energies of its members. If the leader is able to create an environment when the team concepts are applied to group formation, the result is not only effective use of energy but also the creation of new energy. Change does not occur without new energy.

Choosing the right team is key to the success of change within an organization. The leader must be diligent in understanding that the focus of the team efforts is on combining rather than on coordinating resources. ( University of Wisconsin, 2012). Interdependence in today's organization is a simple reality. Most services and products are so complex and the skills needed to produce them successfully are so specialized, that it is impossible for any individual to accomplish them alone. Leaders no matter how gifted they are cannot do it alone. They must have teams of people who are willing to follow and do the work.

Teams that are directed and focused by an effective leader will achieve more organizational objectives from a position of strength and creativity. If the team is an effective one where the

team members share a common goal, objective or vision the support that is given to and within the team achieves results.

Any leader worth his or her weight must be very strategic about picking their teams to move forward their vision or their agenda. It is crucial that when a group of people are thrown together that team building occurs. Through team building members gain a better understanding of the team's purpose. The team has increased communication and greater mutual support. They are able to generate a clearer understanding of the group process and how people can and should work together. One of the major benefits to team building is that there is more effectiveness in working through team problems. They are able to develop the ability to constructively use conflict for development, implementation and/or creativity.

Members of a team who have had shared experiences and have had the opportunity to develop a sense of interdependence are more likely to be invested in the success of the group and themselves. Interdependent teams are less likely to be ego-centric as the function of their behavior or the motivations for their actions.

Leaders who are interested in creating new and vital teams must be cognizant of the following areas:

1. Relationships: These relationships must be based on interpersonal trust, open communication and risk taking.
2. Mission: It must be articulated as the team's purpose and formulated by them.
3. Vision: What is the end result once the team's purpose is fulfilled
4. Goals: There are very specific statements of desired results to which the team is committed.
5. Roles: The roles are clearly assigned with stated expectations.
6. Procedures: Guidelines and procedures for the team's effective functioning are articulated and understood by all team members. ( University of Wisconsin, 2012)

The task of leading teams is not a simple process. It requires very specific skills and dispositions. The leader must be calculated in their approach to choosing the team, developing the team , monitoring the team for effectiveness and productivity and evaluating the results and outcomes. Effective ongoing feedback is required to guide a team to achieve the desired results.

Leadership strategies are plentiful. There is a new book every year that professes to be the new truth. This author has read many books and articles over the years and has found the following leadership strategies and guiding principles when in a leadership role or having leadership responsibilities to be best practices.

Strong leaders delegate. As a leader you cannot do it all by yourself, create an effective team and have them work hard to achieve.

Lead during transitions. If the organization is experiencing lots of upheaval or change, make sure that you the leader are visible and directive. Take charge, ask questions, and make decisions.

Honesty: The Best Policy for Uncertainty. Don't lie to people. Don't sugar coat the results. It will only come back later to haunt you as people will feel misled or fooled.

The Right questions lead to the right vision. Ask many questions, talk it out. Ask people to weigh in with their comments and additional questions. Let people explore through a variety of open ended questions and discussions.

Star performers enhance value. Find your superstars, your innovators who will be able to be creative. Find the people who have the creative genius and the work ethic to develop.

Hire better people. Find the excellent workers who are going to jump on board and do the work. Through effective team building assemble the right group of individuals. If there is a specific skill set missing from the group go out and find it. Bring this individual on the team to balance out and be productive and produce products or procedures.

Effective recruitment and retention tools. Develop ways to find the people you need for innovation and development. Once you find them make it worth their while to stay. Look for committed individuals who are willing to work hard and strive for excellence. Reward them in ways that works to developed ongoing loyalty and commitment to the organization.

Continuous clarity for team success Make the objectives and goals realistic and measurable. State the expectations in a way that indicate success and what is ongoing. What still needing work or ongoing development.

Overcome undermining staff who are sarcastic-joking. Being honest and making team members accountable and responsible for their words and actions will empower individuals to be part of the solution rather than constantly being the negative nag.

Make your staff want to change. As a leader you need to be a role model of change. You need to demonstrate and emulate the dispositions and characteristics you want your team to have. You must lead by example.

Capitalize on experience and wisdom of your team members. As the leader you need to recognize the skills and abilities of the people in the organization. These skills must be celebrated and encouraged. There must no jealousy or envy, just recognition of what the individual is bringing to the process.

Courage under fire: good ways to deliver bad news (Forewarn, in person, be brief, firm and fair). In difficult times a leader must face the facts and stand strong. The storm will pass. The conflict will end. The key is how the leader manages her/ his own behavior and sincerity during these times. Will people remember a solid honest individual or a rat who was all about self-preservation?

Know how to frame an argument (support and cooperation). Change never comes without argument and discussion. An effective leader is able to frame all discussion on facts and all decisions are evidence based, keeping the personal out of the discussion is paramount to having enlightened decision making processes.

How to admit your mistakes (apologize –past-present-future)- don't apologize if only regrets are called for. A great leader knows when to be humble and admit a mistake. We are human beings and perfection is not a realizable attribute. We need to be honest with ourselves and others when we mess up. Accepting responsibility in a mature way is crucial to effective leadership.

In conclusion, leadership is made up of several components that must be present for an individual to be successful at this concept. Leadership is a work in progress. It is never fully achieved as there are always new challenges or situations just around the corner. An effective leader knows that he or she must continue to learn and practice this abstract construct called leadership.

As the journey of leadership begins for all of us in one way or another, it will be fundamental that we understand that we are all leaders, we are all able to effect change and we are all able to make a difference in someone's else life every single day.

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*Telling our Stories: Verbalising Written Reflections to Promote Self-Efficacy in  
Student Teachers*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

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## Introduction

In 2009, Sultan Hassanali Bolkiah Institute of Education launched a new Master's Degree Program in Education as part of its efforts to upgrade and promote the teaching profession in Brunei Darussalam. The Master of Teaching (MTeach) degree is a professional qualification for entry into the teaching profession and is designed to provide a comprehensive understanding of teaching and learning and to develop effective professional skills. Partnerships with schools allow for student teachers to undergo practical experience throughout the program; 2 days per week in schools for observation and/or teaching, a series of Professional Practice blocks whereby they are to teach assigned classes and a mentor-mentee arrangement of which students teachers receive mentorship by experienced teachers in the partner schools. An important feature in the MTeach program has to be a strong emphasis on reflective practice as a source for creating awareness, evaluating and decision making for classroom instructional and managerial decisions with trainee teachers especially during the practicum. However, while reflective practice have been synonymous with teacher training, the concept of the reflective practitioner (Schön, 1983) points to the problem that reflective inquiry in student teachers' learning can remain tacit and lead to idiosyncratic knowledge that is not open for scrutiny and development (Goodson & Hargreaves, 1996). Reflective practice in teacher training programs are more often than not denigrated to records of observations in journals – mere pieces of descriptive writing. As such, new approaches using reflection and self-regulation as vehicles for student teacher learning, need to be considered carefully. How does reflective practice for teacher preparation account for what Shuell (1990) calls 'active meaningful learning', denoting a constructive, cumulative and goal-directed learning process in which the student teachers build new knowledge upon existing conceptions and beliefs (Halliday, 1996)? In addition, student teachers' beliefs, lay theories, and observations of the school and its community teachers have to be considered of relevance as these form Funds of Knowledge (FoK) (Gonzalez, Moll and Amanti, 2005) that provide a more authentic context for student teacher learning, which in turn contributes to their sense self efficacy as they begin to evaluate teaching and learning and make decisions for classroom instructional and managerial decisions. In order to account for 'active meaningful learning' (Shuell, 1990), this paper focuses on one aspect of reflective practice - illustrates dialoguing reflections to help and challenge student teachers to direct their gaze at students' lives and consider how they may develop and build their knowledge base in order for best practices for teaching and learning.

## A framework for the underlying theoretical rationale and methodology

The underlying rationale for 'active meaningful learning' stems from the assumption that the educational process can be greatly enhanced when teachers learn about the everyday lived contexts of their students' lives otherwise known as the funds of knowledge (Gonzalez & Moll, 2002). For this module, student teacher venture as 'anthropological learners' or 'teacher-ethnographers', they acquainted themselves with their students', familiarised with the whole school community and sought to understand the ways in which the school community makes sense of their everyday lives.

## The Funds of Knowledge (FoK)

"Funds of knowledge (FoK) is based on a simple premise; *that people are competent and have knowledge, and their life experiences have given them that knowledge*" (Gonzalez & Moll, 2002, p. 625). It is centered on the principle that the best way to learn about lives and backgrounds is through a focus on households' everyday practices, by learning about "what people do and what they say about what they do" (Gonzalez, 2005, p. 40).Diverse definitions suggest the importance

of consideration of various FoK, with notions of FoK each highlighting and/or excluding different factors. For this paper, I make reference to FoK as the fluid collection of knowledge base, mainly derived from observations. FoK provides the basis for understanding/making sense of their beliefs, teaching philosophies in the development and building of knowledge base as they began to develop their own personal understanding of teaching and learning which contributes towards enabling them to be informed on best practices. This in turn could potentially help student teachers achieve self-efficacy which Bandura (1986) defines as “as people’s judgments of their capabilities to organize and execute courses of action required to attain designated types of performance” (p. 391).

### The concept of reflection

John Dewey (1933) defined the term reflection as “active, persistent and careful consideration of any belief or supposed form of knowledge” taking into consideration its origins and effects (as cited in Richards & Ho, 1998:153). Reflection, is today established as a key concept in discussions of teacher learning and involves teachers in thinking about their work, understanding what they and their learners do, and considering ways of improving the quality of teaching and learning. Research on effective teaching over the past two decades indicate that effective practice is linked to inquiry, reflection, and continuous professional growth (Harris, 1998). Teachers can improve their effectiveness in the classroom by gaining a better understanding of their own individual teaching styles through reflection on practice (Calderhead, 1989). However, reflection is also considered difficult due to a lack of understanding of reflection (Boud & Walker, 1998), thus, a range of methods for identifying the nature and quality of reflection have been developed to mitigate these concerns.

Typically used and studied in the context of pre-service teacher education programmes (Borg, 2006), reflective writing frequently takes the form of reflective journals (Hatton & Smith, 1995). Reflection can also be understood as a process of internal dialogue facilitated by thinking or writing and through an external dialogue and reflection together with others (Clarke, 2003). However, reflective dialogues are used to facilitate and support group learning whereby participants are responsible for personal reflections and committed to active participation. This paper looks at the benefits of dialoguing that participating student teachers derived from, over one semester of practicum and classes in session and reports on the learning outcomes through the construction of stories of three student teachers, gathered during the student teachers’ reflective dialogues.

### The dialogue sessions

The module in context had a primary focus, to provide support be it professional or otherwise, vis-à-vis dialoguing sessions, to student teachers as they underwent practicum for a 14 weeks (1 semester) in schools. The body of research on student stress in the practicum identifies and describes sources of practicum stress to be plenty as “teaching is considered to be among the professions in which employees are subject to high levels of stress...and is capable of exposing student teachers to situations that are similarly, if not more stressful than those experienced by practicing teachers” (Black-Branch & Lamont, 1998, p. 183 cited by Murray-Harvey, 1999). With reflective practice as the module’s approach for teaching and learning, student teachers were required to observe, note down in their reflective journals, reflect on what they have observed and then share these reflections when they attended classes weekly on campus. The goal was to create a climate of dialogue where student teachers professional (and sometimes personal) questions and thoughts were given due respect and attention and collectively explored. To

facilitate the development of their reflections systematically, a semi-structured check-list was provided, they were required to do the following:

- i. Observe moments (critical, significant, spontaneous) and describe them in their notebooks
- ii. Approach and become acquainted with the students (this could be after a class, recess, etc)
- iii. Become familiar with the school (in their notebook, they should describe the school's physical environment, teachers, principal, understand the school's policies, culture)

From the very start of these classes, trust and privacy were main priorities, a safe environment had to be ensured. There was very little, if at all, interference from the lecturer who had to be flexible with the structure of the classes – although lectures had been prepared, these had to be postponed if it was noticed that the student teachers required prolonged period of talk-time. Among questions/topics suggested for reflective purposes were questions that covered an array of topics that included perceptions and beliefs about teaching, classroom management, pedagogical decisions, these topics were usually based on their experiences/critical moments/incidents. The student teachers were encouraged to pursue the selected topics in whatever direction seemed most fitting and to diverge from the initial questions whenever necessary. Sometimes, digressions ensued, these may include, a rough day at school, class management problems, teaching methods that did not work, work relationship problems; however not all digressions were negative in nature.

During each of the reflection sessions, the student teachers were asked to identify and discuss successes and problems. The dialogue sessions appeared most helpful as the student teachers learned to reflect and talk through on their reflections and experiences, they also began understand see other perspectives. This resonates with Game & Metcalfe (2009) who said that people in dialogue, are able to hear the differences offered by others, because they are not personally affronted. They can imagine the experience of others and therefore understand how different perspectives can co-exist.

The following section presents case examples of 3 student teachers, Ros, Nana and Rina and the stories gathered from the dialogue sessions.

#### Student teacher 1:- Ros

Ros has been a trained speech therapist for more than 10 years and presents an image of the very committed professional with a strong sense of professional identity. Among her most rewarding instances are when the children she's helping are able to communicate coherently. When she decided on a mid-career change, she chose to become an early childhood educator. Ros wears many hats, she is a mother of 4 young boys, wife, part time actress and full time student. Ros is confident and unafraid to speak her mind, she very seldom allows herself to be 'bullied' into situations. However, she is also very soft hearted and compassionate, sometimes during class, she has been known to shed a few tears albeit tears of frustration, anger, sadness.

#### Ros' Story:- The supervisor – supervisee tension

During the initially stages of her practicum, conflicts arose between Ros and her practicum supervisor due to differences in teaching practices and/or perspectives. Ros's supervisor was trained in Primary Education while Ros was undergoing training as an Early Childhood practitioner. As pedagogical and methodological differed for the two areas of specialisation, Ros found herself in constant conflict with her supervisor. For example, during a class on campus,

Ros appeared quite upset. It seemed that she had been awarded a grade which to her opinion, was not justifiable and she was very frustrated and she talked about it. As she dialogued on her reflections on that incident, she had the opportunity to understand and retain her self efficacy; by the end of the semester, she had actually begun to see eye to eye with her supervisor. If she hadn't been able to dialogue with the rest of the student teachers and the lecturer, she could have eventually ended up being more frustrated and disheartened. Throughout the dialogue sessions, she grew increasingly aware of where to draw the middle-line – when to agree and when to disagree with her supervisor, she also reflected on ways to structure her lessons, so while she still stayed true to her training as an Early Childhood educator, she could still present lessons which met the necessary structures and requirements of a 'good' lesson. All these decisions eventually contributed to an improved supervisor-supervisee relationship by the end of the semester, and she even received a very good grade for her practicum.

#### Student teacher 2:- Nana

Nana is a young teacher who has been teaching the General Paper to pre-university students for 3 years. Educated abroad in English Language and Linguistics, she did not receive any formal teacher training, thus her admission into the Master of Teaching program. As most of Nana's students are about her age, she has always assumed that she has good rapport with them. While she is a highly motivated teacher and is constantly making every effort to ensure best practices in teaching, she does have some set ideas and beliefs which she has been 'collecting and building' in the 3 years of her teaching, particularly in the area of classroom management.

#### Nana's Story:-Through the reflective glass

Nana considered herself to be 'young, hip', and seemed to have no issues identifying with her young students. ...however, during one of the dialoguing sessions, as reflected on an incident during a classroom observation, she realised that she was not as approachable as she thought she was and that she had very set ideas on (un)acceptable behavior in a classroom. For example, she said *"the funny thing I encountered today was when the teacher was taking the students' attendance, the teacher asked the students to respond with animal sounds. To my surprise, none of them were reluctant... they were rather responsive and jolly."* From her comment, Nana appeared to be unaware of the types of activities her students would consider as fun, she said *"I didn't know they liked that sort of thing, I thought they would find it silly to make animal sounds cause they're you know, seventeen."* She later admitted that she seemed to be an 'old' person with little tolerance and had very little patience for 'young people's habits or behaviour, thus explaining her reaction to the students' enjoying the activity above. This 'revelation' proved quite surprising to her as she had always thought that she understood her students' Funds of Knowledge,

Nana also discovered that she never actually built relationships with her students. In one session, she talked about her observation of her mentor, and she said, *"...when the teacher mentioned smoking, the boys in the class gave a funny look to the teacher, and both (teacher + student) laughed. To be honest, I do not know what was funny about this. I could see that the teacher and students understood each other perfectly. They had a rule – we do not laugh at the person, we laugh with the person. Knowing that I once taught this class before, I could clearly tell that the students' performance have improved since the teacher took over."* She remarked of her reflection *"I liked the fact that the students were able to communicate easily with the teacher. Students*

*were more responsive and not entirely scared or shy.*” A stickler for rules, Nana, through reflection, began to see how other teachers’ implemented rules which empowered the students instead of disempowering. Also her dialogues helped her see that she was indeed not as flexible and approachable as she had always assumed to be. She once said, “*I have a younger sister in the school... and I’m very close to her... so I get along well with my students because they’re like my sister.*” By the end of the semester, she admitted... “*yeah, I never saw myself as strict or fussy.. I did wonder, why they never seemed to laugh during my classes, but they always seemed to have a good time with Mr Ravi.*” Nana’s reflective dialogues do not mean that she undergoes a total professional and personal transformation, rather, these reflections of authentic teaching experiences provide her the feedback from peers and the lecturer, which can potentially help in her development of a decision-making schema. Farrell’s (2001) description of reflective teaching explains that teachers learn to subject their own beliefs of teaching and learning to a critical analysis, and thus, take more responsibility for their actions in the classroom (p. 23).

### Student teacher 3:- Noni

Noni is another young teacher, educated abroad in the area of Applied Linguistics, however, she never received any formal teacher training. Having taught General Paper for A-Levels since graduation, she has had 3 years teaching experience. Self-admitting, she ‘envies’ her colleagues who appear to have close bonds with their students, she feels that she is ‘*not the kind to be friendly or close. I just do my work, that doesn’t mean I don’t like my students, I’m just incapable of being close to them*’.

### Noni’s Story: The ‘s’mothering mentor

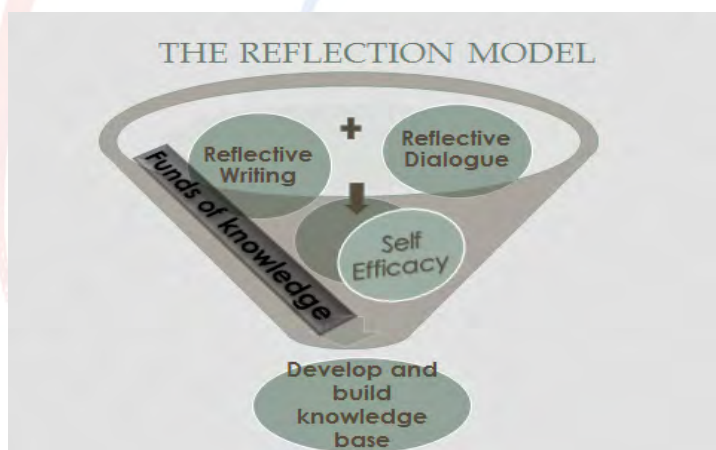
For her practicum, Noni was sent to an all girls’ school which is well known for its Language Arts Program. Unlike Noni who claimed that she was unable to be personable with her students, her mentor on the other hand, was very learner centred and his students’ wellbeing was considered above everything else, he referred to his students as “*my girls.*”

Being a very hands-on teacher and mentor, he observed all her classes, tracked her pace during class, pre-set her activities, she was kept on very ‘short leash’. To illustrate, he felt that one of her weakness was the ‘incapability’ to keep track of time so she was asked to write a script which she was to read aloud in class, so instead of spending time preparing her lesson, she was kept busy writing the script. Although she had the highest regards for him as the mentor and teacher, she felt very frustrated and unable to be herself. Often during the dialogue sessions, she would comment that “*if he wasn’t there, I would not have done that...*” For Noni, the dialogue sessions appeared to have helped her go through the entire practicum, these sessions were almost akin to therapy sessions and as she shared her frustrations, she began to make sense of who she had become and why she was like that. She remarked... “*I know many times I don’t want to do what he suggests, and now I won’t even look at him as he taps his watch. But I just keep quiet whenever he suggests something, I disagree inside but outwardly, I don’t. In my mind though, I’m just not listening to him.*” When Noni made this comment, her peer at the dialogue session remarked, “*why don’t you just tell him, why do you let him think you don’t have an opinion?*” This comment actually helped Noni re-think her reactions towards her mentor, although at the initial stages, Noni was unable to answer her peer, she had become too wrapped up in the bubble of incompetency which had been growing since the beginning of her practicum. Many of the sessions were filled with Noni venting her frustrations, however, being able to reflect on the

different incidents, for example, not being to make her own professional decisions, she eventually understood that she was in fact a teacher who have had 3 years teaching experience, and she was empowered to make professional decisions which in the best interest of her students. The dialogue sessions were not just for reflective purposes, they were sessions where she received support and validation from her other colleagues who spurred her on with encouraging words and courage to stand up for what she thought were good pedagogical decisions.

### Conclusion : The Reflection Model

Reflection is today, established as a key concept in discussions of teacher learning. Reflection can be understood as a process of internal dialogue facilitated by thinking or writing and through an external dialogue and reflection together with others (Clarke, 2003) However, reflection is considered difficult due to a lack of understanding of reflection (Boud & Walker, 1998), thus a range of methods for identifying the nature and quality of reflection have been developed to mitigate these concerns. In the context of this module, it was pertinent to make sense of the process of reflective practice and consider its reliability and validity as an approach in teacher education. From the outcomes of the dialoguing sessions, a model of reflection is proposed below to illustrate the key elements necessary for meaningful reflection.



### The Reflection Model

Through the sessions, it was apparent that in order for meaningful reflection instead of mere tacit practice to have the potential to develop and build an effective knowledge base for teaching and learning, the funds of knowledge which is extrapolated from ethnographical observations, written records of the observations (reflective writing) which is then turned into reflective dialogues were essential. These three elements collectively contribute towards self efficacy of the student teachers as they began to “belief in their capacity to organize and execute the courses of action required to produce given attainments” (Bandura, 1997, p. 3).

The stories in this paper highlight the role of collaborative dialogue as a key element in reflective practice. To reiterate Black-Branch and Lamont’s (1998) point that “teaching is considered to be among the professions in which employees are subject to high levels of stress”, reflective dialogues appear to encourage and enable teachers to operate in the affective domain. While reflecting alone may be beneficial, reflection may be "enhanced by communication and dialogue with others" Zeichner and Liston (1996 p. 22). Working with others to inquire has several benefits as described by Kasl and York (2002), a dialogical process can support teachers to see other perspectives and people in dialogue, are able to hear the differences offered by others,

because they are not personally affronted (Game & Metcalfe, 2009). They can imagine the experience of others and therefore understand how different perspectives can co-exist.

In conclusion, teacher educators must think of ways to incorporate all three elements, should they choose the reflective approach in their teaching and learning as these elements systematically present a structure for reflection of which neither should be indispensable.

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*Development of Local Wisdom Learning Management Model of ASEAN Focus  
School: A Case Study in Thailand*

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Official Conference Proceedings 2012

Abstracts

The research purposes were to study about local wisdom learning management of an ASEAN Focus School in Chachoengsao province in Thailand, to develop the local wisdom learning management model of ASEAN Focus School and to study the results of the model which considered from the result of local wisdom learning units integrated to ASEAN developed by teachers, asking teachers' opinions and students' opinions. It found that, teachers in each department of the school have taught local wisdom learning in different types and times in a semester. There were only two of eight departments (Thai language department and foreign language department) could be able to teach all ten types of local wisdom. The four models of local wisdom learning management of ASEAN Focus School were developed in this research and they were in a high level of consistency and appropriateness. It also found that teachers and students were satisfied in a high level of teaching and learning from the learning unit designed by the model, and they also revealed that every school in Thailand should implement the models for preparing students and other stakeholders to facing the ASEAN community by the year 2015.

**Key words:** Local Wisdom, Learning Management Model, ASEAN Focus School

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## Introduction

In October 2003 the Association of South East Asian Nations (ASEAN) announced its intention to create an ASEAN Community based upon three pillars: 1) ASEAN Security Community 2) ASEAN Economic Community and 3) ASEAN Socio-Cultural Community. A year later ASEAN established the Vientiane Action Programme to realise this goal. The process of [ASEAN community](#) building is a result of the considerable change in the association's mission in the recent two [decades](#). The end of the [Cold War](#), the advance of [globalization](#), the rise of [China](#) and [India](#) in economic size and political influence as well as the Asian financial crisis have forced ASEAN to shift from its original preventive diplomacy of maintaining peace and harmony among its members and in the region to the constructive diplomacy of community building to cope with increasing political and economic competition in a globalised world. In more details, one of the most notable threats to ASEAN members is China, whose robust economy is in direct competition with those of its Southeast Asian neighbours, especially in trade and foreign direct investment. Meanwhile, in recent years, China has also tried to enhance its economic and political influence and presence in the region, particularly in Myanmar, Laos, Vietnam and Cambodia. This important change has increasingly drawn ASEAN states, which share the common fear of intrusive outside powers, into the long-term strategic competition between the United States and China in Asia Pacific. In order to cope with China and avoid external intervention, Southeast Asian countries feel the need to act collectively and to lean on each other, so that they can have combined strengths as well as better bargaining power in both economic and political issues. The same will work when dealing with an amalgamated or regional community such as the United States and the European Union, or with international organizations such as the United Nations and the World Trade Organization. Besides, in the time of economic globalization and after it was hit hard by the Asian financial crisis, forming an economic community will help Southeast Asia boost its economic competitiveness and attractiveness to investors inside and outside the region (Almonte, 2006 cited in Wikipedia, 2012). In 2005, member countries agreed to establish an ASEAN Charter, which would serve as the legal and institutional framework for the regional organization and the ASEAN Community. Although it will not take on any supranational functions, with its ambitious goals, the ASEAN Community is believed to have far-reaching and important impacts on the lives of the people in Southeast Asia (Wikipedia, 2012). To response to the globalization and the regional economic and political development, in less than three short years the ASEAN 2015 will become a reality bringing with it enormous new opportunities for Thai companies to expand in the region and exploit the unprecedented new freedoms that the 10-country ASEAN Economic community will offer.

From the mentioned above influenced Thailand to enhance people to be educated and ready for facing the changed situation not only formal education but also informal and non-formal education as well. According to the Office of Basic Education Commission revealed that the office has been conducted a project called Spirit of ASEAN to prepare Thai students since 2011, there are three types of school model in the project which are Buffer School, Sister School and ASEAN Focus School.

Thailand should beware and also necessary to consider our role as one of the main founders of ASEAN. As a core leader in the ASEAN Community Thailand is aiming at the prosperity of its people through developing resources and economy building under the strategic vision of, "One Vision, One Identity and One Community". The main purpose of the Ministry of Education on educational readiness preparation is as follows: (Nipa Yamwagee.2010)

1. To build an ASEAN Community through education: Thailand will be an Education Hub with crucial concepts which focus on equipping Thai people with the essential awareness of being part of the ASEAN Community, through having the capacity to be able to live harmoniously in a multi-society, also in showing the ability to establish educational cooperation in the region. The latter will emphasize educational quality development, educational opportunity expansion and participatory enhancement on educational services and educational management.

2. To reinforce ASEAN Community building through education: This process will be highlighted through the understanding of inculcation regarding ASEAN neighboring countries, ethnic differences, human rights principles. Moreover, a high emphasis will also be given to teaching foreign languages. This is in order to develop efficient communication amongst ASEAN citizens. The Ministry will also allow English teachers to integrate the English language at every level. The aim is to encourage Thai students to communicate creatively. In addition, the private sector will assist in the support of volunteer teachers to teach foreign languages. In addition foreign languages volunteers should also teach cultural awareness in order for all to reach better understanding. With regards to ICT for education, development of this will be through 3 Ns principles, namely the Ned Net- National Education Networks, the NEIS- National Education Information System –A Center for gathering, collecting and linking educational information and data, and NLC – National Learning Center for life-long learning. The significant objectives embedded are to develop Thai students to become good ASEAN citizens. To develop Thai citizens who can live together with all other citizens of ASEAN in harmony, in a happy, caring and sharing atmosphere. Furthermore, students who graduate from vocational and technical colleges will be ready to enter the workplace as efficient staff members who are coupled with sufficient abilities to work in multicultural societies.

Finally, the Ministry of Education will set out to promote Thailand as being an education center of ASEAN in the areas of religion and culture. This policy will be implemented under the 6 months - 6 qualities strategy. This is in order to continually develop Thailand's move forward to both ASEAN and International Communities.

In addition to considering the change towards the ASEAN Community, Thailand Educational Act is another factor to consider, especially, chapter 4 : National Education Guidelines Section 23 : "Education through formal, non-formal, and informal approaches shall give emphases to knowledge, morality, learning process and integration of the following, depending on the appropriateness of each level of education". Especially, (3) Knowledge about religion, art, culture, sports, Thai wisdom, and the application of wisdom. (Office of the National Education Commission. 1999 : 10-11). As a role of a lecturer in the Faculty of Education, Rajabhat Rajanagarindra University (RRU), Chachoengsao Province Thailand, influenced the researcher to be interested in studying the ongoing of the Spirit of ASEAN project in Chachoengsao Province in the area of local wisdom learning management in school of the Spirit of ASEAN project. The researcher found from the preliminary study showed that a school in the project which is in ASEAN Focus School type model and located near by RRU is Wat Sothonwararam Worawiharn School. It is one of fourteen schools in ASEAN Focus School project, therefore this school was selected into this study. The aim of the research was to study the local wisdom learning management of an ASEAN Focus School in

Chachoengsao province in Thailand then develop the local wisdom learning management model of ASEAN Focus School and study the results of the model.

### **Research objectives**

The research objectives were:

1. to study the local wisdom learning management of Wat Sothonwararam Worawiharn School teachers.
2. to develop the local wisdom learning management model of ASEAN Focus School.
3. to study the results of the local wisdom learning management model, which considered from
  - 3.1) the result of local wisdom learning management unit integrated to ASEAN
  - 3.2) teachers' opinion toward using of the local wisdom learning management model.
  - 3.3) students' opinion toward learning by the local wisdom learning integrated to ASEAN learning unit.

### **Research Procedure**

#### **1. Sample**

Purposive selection was used in this research. The samples were school administrators, teachers, and students of Wat Sothonwararam Worawiharn School which selected according to the research process which consisted of ;1) 97 teachers in the process of studying the local wisdom learning management, 2) 10 teachers in the process of using the model and 3) 29 students in the process of studying the opinion of learning from local wisdom learning integrated to ASEAN learning unit.

#### **2. Method**

This research operated according to the following stages

**Stage 1 :** study the local wisdom learning management in school, this stage set up during September – October, 2011.

**Stage 2 :** develop and evaluate the local wisdom learning management model of ASEAN Focus School, this stage set up during November – December, 2011.

**Stage 3 :** study the results of using the local wisdom learning management model, this stage set up during January – April, 2012.

#### **3. Research tools**

Research tools consisted of :

- 1) questionnaire asking teachers about the local wisdom learning management of Wat Sothonwararam Worawiharn School
- 2) local wisdom learning management model assessment form
- 3) Semi structure interview
- 4) questionnaire asking students about learning of local wisdom learning integrated to ASEAN.

#### 4. Data collection

Data collection were as following :

- 1) The researcher surveyed and analyzed local wisdom learning management of the teachers in Wat Sothonwararam Worawiharn School after the process of documentary studied.
- 2) The researcher set up focus group together with school administrators and teachers then analyzed and constructed method of local wisdom learning management in school.
- 3) The re searcher developed local wisdom learning management together with the school teachers and curriculum and instruction experts.
- 4) The researcher evaluated the results of the model by interviewing the teachers in the project and asking opinion of students who learned the local wisdom integrated to ASEAN learning unit.

#### 5. Data analysis

1) Descriptive statistics were used to analyze the data collection which were mean ( $\bar{x}$ ), standard deviation (SD) and percentage (%).

2) For analyze satisfaction questionnaires data, rating scale of means were interpreted as follow :

4.51 – 5.00	mean	satisfaction at the highest level
3.51 – 4.50	mean	satisfaction at a high level
2.51 – 3.50	mean	satisfaction at a medium level
1.51 – 2.50	mean	satisfaction at a low level
1.00 – 1.50	mean	satisfaction at the lowest level

3) Content analysis was used to analyze the interview data collection.

#### Research Results

1. Kindergarten teachers and teachers in each department which were Thai language, Mathematics, Science, Social studies Religion and Culture, Health and Physical Education, Art, Occupations and Technology, and Foreign languages departments have taught local wisdom essential learning in different types and times in a semester. Teachers in Thai language department and foreign language department could be able to teach all of ten types of local wisdom which consist of (1) local wisdom of religion and belief, (2) local wisdom of tradition and rituals, (3) local wisdom of folk art, (4) local wisdom of food and vegetables, (5) local wisdom of folk dance, (6) local wisdom of cultural arts, (7) local wisdom of folk songs, (8) local wisdom of herbs and medicine, (9) local wisdom of fabrication, and (10) local wisdom of living under natural conditions. On the other hand teachers in health and physical education department could be able to teach two types of local wisdom which were local wisdom of folk art and local wisdom of folk dance.

2. There were four types of local wisdom learning management model of ASEAN Focus School, which were 1) local wisdom integrated to ASEAN learning management model in fundamental subjects group, 2) local wisdom integrated to ASEAN learning management model in selective subjects group, 3) local wisdom integrated to ASEAN learning management model in students activities and 4) local wisdom integrated to ASEAN learning management model in school special project. All four types model were in high level of consistency and appropriateness evaluated by the specialist in curriculum and instruction area as the following figure 1-4.

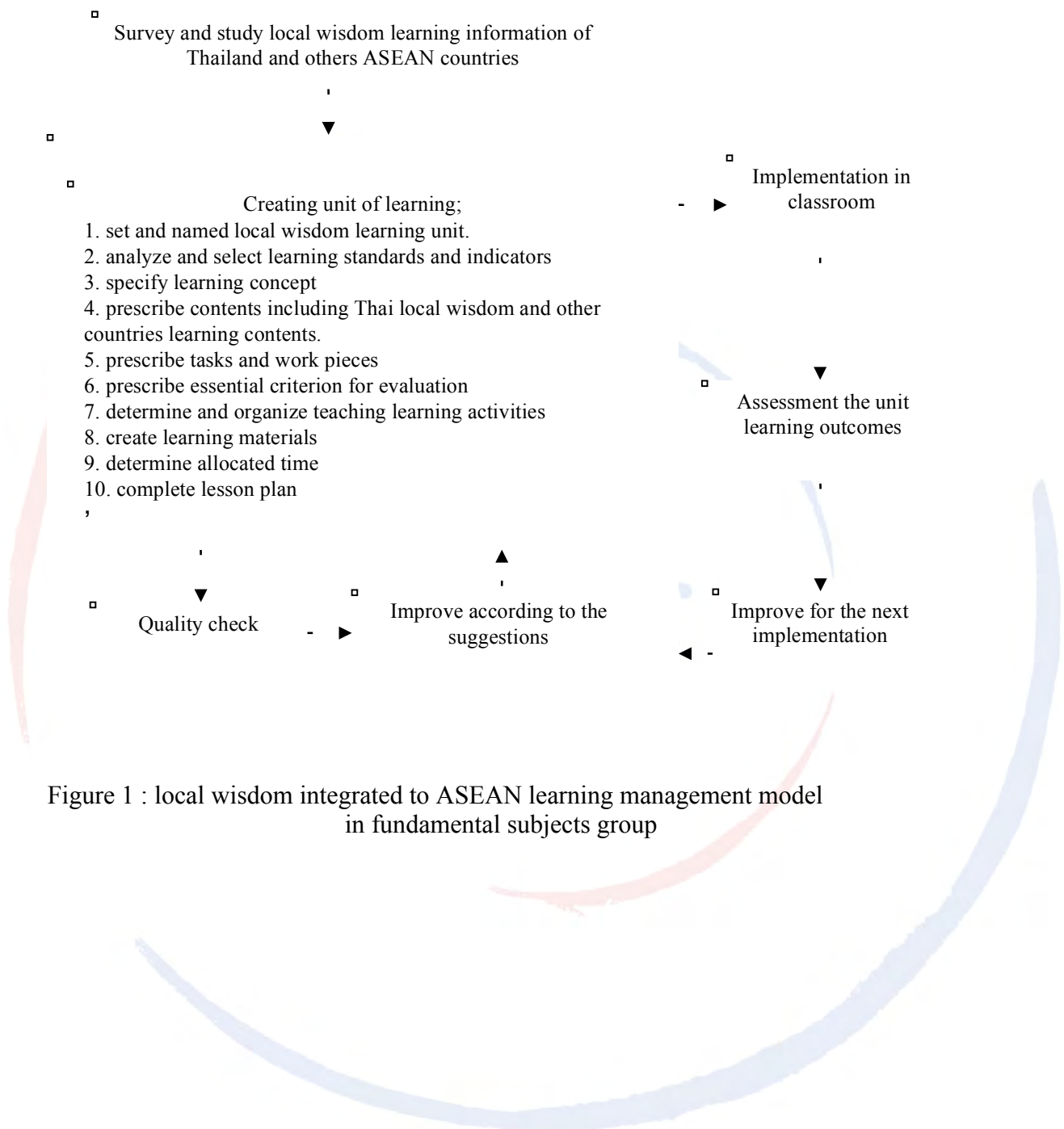


Figure 1 : local wisdom integrated to ASEAN learning management model in fundamental subjects group

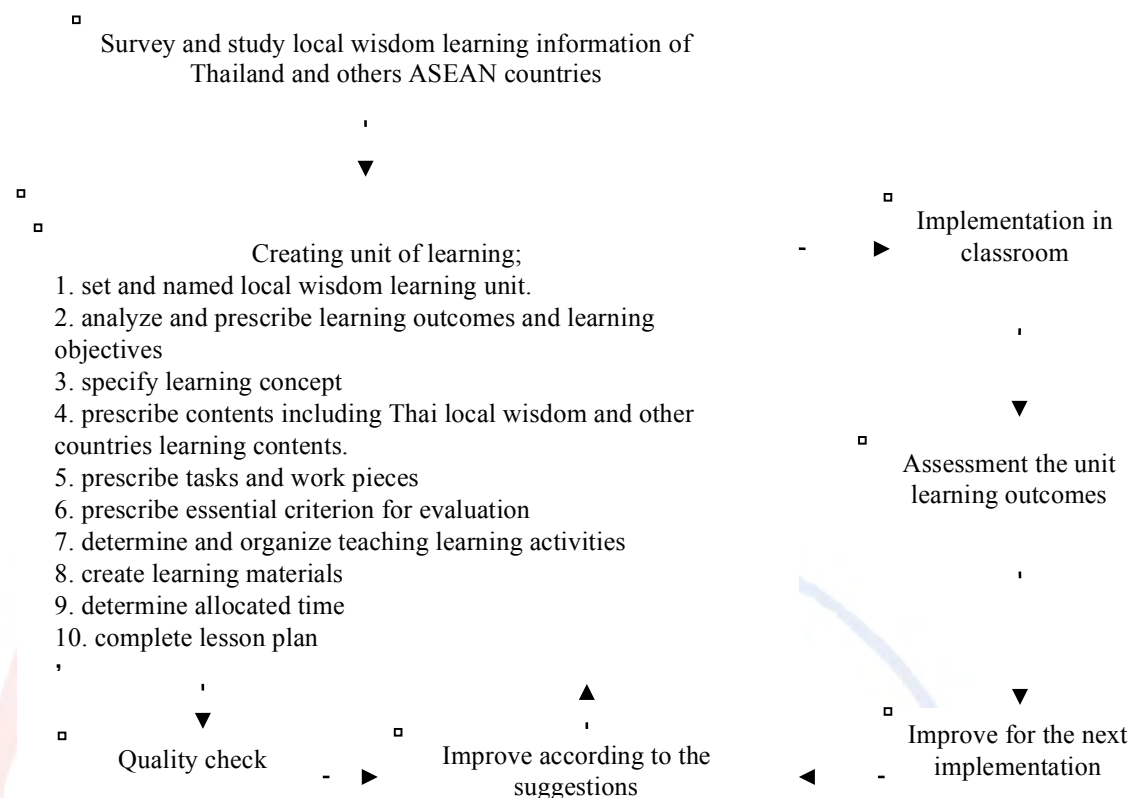


Figure 2 : local wisdom integrated to ASEAN learning management model in selective subjects group

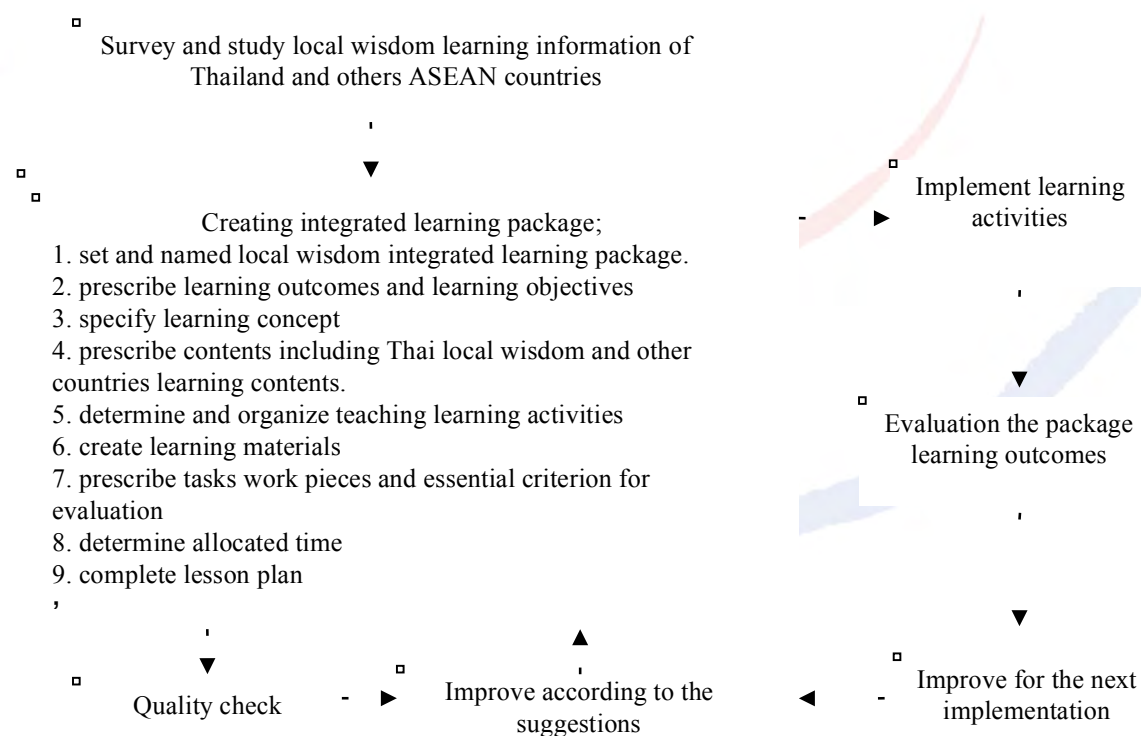


Figure 3 : local wisdom integrated to ASEAN learning management model in students activities

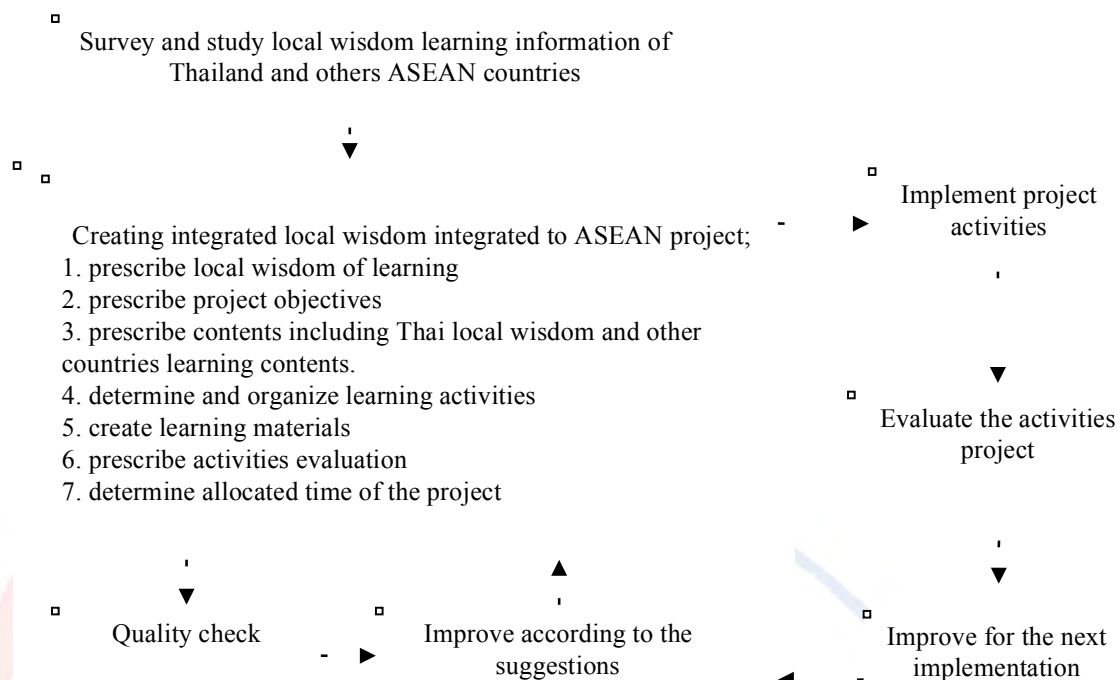


Figure 4 : local wisdom integrated to ASEAN learning management model in school special project

### 3. The results of implementing the model were as followed;

3.1 In this research there were 9 learning units developed according to the local wisdom integrated to ASEAN learning management model in fundamental subjects group; Unit 1 : Religion and Belief in ASEAN, Unit 2 : Tradition and Worship in ASEAN, Unit 3 : Thai and ASEAN Music, Unit 4 : Local Food in ASEAN, Unit 5 : Thai and ASEAN Folk Dances, Unit 6 : Enjoy in Literature, Unit 7 : Thai and ASEAN Herbs. Unit 8 : Thai and ASEAN Fabrication, Unit 9 : Wisdom in Living Naturally in ASEAN.

3.2 Teachers' opinion revealed that to prepare effective lesson plans it was necessary to consider and set up learning objectives which aligned to the curriculum indicators, selected suitable content, essential learning, teaching and learning materials and prepared alternative assessments. Besides learning objectives should be comprehensive altogether cognitive domain, psychomotor or process domain and effective domain which mainly enhancing local wisdom appreciation, tenacious, and conservation altogether with learning ASEAN local wisdom.

3.3 Students' satisfaction toward learning local wisdom integrated to ASEAN unit 6 : Enjoy in Literature as a whole and aspects were in high level of satisfaction as the following table 1 and table 2.

Table 1 : Mean, standard deviation and level of satisfaction of students (n=29)

Aspect	( $\bar{x}$ )	(SD)	Level of satisfaction
Learning materials	4.43	0.50	High
Learning activities and environment	4.47	0.50	High
Assessments	4.31	0.49	High
Learning Benefits	4.26	0.46	High
<b>Average</b>	<b>4.37</b>	<b>0.49</b>	<b>High</b>

Table 1 showed the students' satisfaction towards learning the local wisdom integrated to ASEAN unit 6 : Enjoy in Literature as a whole was in high level of satisfaction ( $\bar{x} = 4.37$ ). Classify by aspect it was found that the satisfaction towards learning materials, learning activities and environment, assessments and learning benefits were also in high level of satisfaction ( $\bar{x} = 4.43$ ,  $\bar{x} = 4.47$ ,  $\bar{x} = 4.31$ ,  $\bar{x} = 4.26$  in order).

Table 2 Mean, standard deviation and level of satisfaction of students in aspects and items (n=29)

Aspects / Items	$\bar{x}$	SD	Level of satisfaction
<b>Learning materials</b>			
1. interesting	4.48	0.51	High
2. difficulty	4.41	0.50	High
3. suitable for activities	4.38	0.49	High
average	4.43	0.50	High
<b>Learning activities and environment</b>			
4. learning objective informed	4.41	0.50	High
5. duration of learning activities	4.45	0.51	High
6. active participation by learners	4.41	0.50	High
7. learning activities are interesting	4.52	0.51	Very High
8. enjoy participated in learning activities	4.55	0.51	Very High
average	4.47	0.50	High
<b>Assessments</b>			
9. alternative assessment	4.41	0.50	High
10. suitability assessment and aligned to objectives	4.31	0.54	High
11. benefit of feedback to improve learning	4.21	0.41	High
average	<b>4.31</b>	<b>0.49</b>	High
<b>Learning Benefits</b>			
12. enhanced understanding of local wisdom	4.31	0.47	High
13. enhanced appreciation of local wisdom	4.34	0.48	High
14. valued Thai local wisdom and other countries knowledge	4.21	0.49	High
15. applied knowledge to daily life	4.17	0.38	High

Table 2 showed the satisfaction in items it was found that the two highest satisfaction average score were 4.52 and 4.55 in items; the learning activities are interesting and, students enjoy participated in learning activities. The lowest average score item was 4.17 showed in item of applying knowledge to daily life, nevertheless it still meant in high level of satisfaction.

## Conclusion and discussion

1. It found in the research that, teachers in each department of the school have taught local wisdom learning in different types and times in a semester. There were only two of eight departments (Thai language department and foreign language department) could be able to teach all ten types of local wisdom. This because of according to Thailand Educational Act which is an important factor for the educators especially teachers to consider the way to prepare their lessons, especially, chapter 4 : National Education Guidelines Section 23 (3) Knowledge about religion, art, culture, sports, Thai wisdom, and the application of wisdom. (Office of the National Education Commission. 1999 : 10-11). It is a main factor to influence teacher in the school prepared their lesson with local wisdom integration. And it can be explained by analysis the learning standard criterion in the curriculum, because of the learning standards of the two disciplines Thai discipline and foreign languages discipline are focus on the language skills, and grammar focus then the teachers in the two departments can be able to choose any content freely to teach their students including ten types of local wisdom learning contents.

2. The four models of local wisdom learning management of ASEAN Focus School were developed in this research and it was found from the implementation of one model which was local wisdom integrated to ASEAN learning management model in fundamental subjects group, the teachers' opinion revealed that to prepare effective lesson plans it was necessary to consider and set up learning objectives which aligned to the curriculum standard and curriculum indicators, selected suitable content, essential learning, teaching and learning materials and prepared alternative assessments. Besides learning objectives should be comprehensive altogether cognitive domain, psychomotor or process domain and effective domain which mainly enhancing local wisdom appreciation, tenacious, and conservation altogether with learning ASEAN local wisdom. And they also revealed that every school in Thailand should implement the models for preparing students and other stakeholders to facing the ASEAN community by the year 2015. From the founding it can be explain that because of the implemented model was for fundamental subject group so the teachers had to focus of the curriculum standard and curriculum indicators then they prepared the lesson. Also in Thailand teachers must prepare the objectives which covered all type of cognitive domain, psychomotor domain and affective domain so the teachers always remind themselves to set the learning objectives comprehensively of those three domains.

3. Students were satisfied in a high level of teaching and learning from the local wisdom learning unit integrated to ASEAN which designed by the model especially in the items of the learning activities are interesting, and students enjoy participated in learning activities were in very high satisfaction. It meant that students enjoyed their learning, this because the teacher had been prepared a valuable lessons for them, not only emphasized on the curriculum standard but also focus on the local wisdom and expanding to ASEAN knowledge, this design made students realized that they were the students of ASEAN Focus School which focus on preparing students in ASEAN knowledge, knowledge in science and technology, thinking skills, leadership and multicultural understanding to be ready for adjust themselves in any changed situation in the future. Anyway it was found that the lowest satisfaction was showed in item of applying knowledge to daily life, nevertheless it still meant in high level of

satisfaction. This probably because the students felt that the local wisdom which was immersed in the unit of Enjoy in Literature cannot be applied directly to daily life.

## Recommendations

1. Recommendation for implementing the local wisdom integrated to ASEAN learning management model were as follow :

- 1) Teachers and administrators should prepare themselves to know and have enough information about local wisdom not only about Thai but also of other countries.
- 2) Teachers should be skillfully on design curriculum and instruction and the lesson should be appropriate with students' age and be able to activate students interesting.
- 3) Not only teachers should skillful on knowledge and information retrieval but also necessary to be skillful on preparing learning materials for students to enhance the successfulness.

2. Recommendation for further research were as followed :

- 1) There should be a variety study of dependent variable to confirm the efficiency reliable of the local wisdom integrated to ASEAN both in learner dimension and management dimension
- 2) The results of implementation on other two models ; local wisdom integrated to ASEAN learning management model in students activities and local wisdom integrated to ASEAN learning management model in school special project should be studied.
- 3) There should be a comparison study between or among local wisdom learning management in Thailand and those other countries.
- 4) Should research and develop the suitable local wisdom bank for Thai students according to curriculum and instruction research methodology design.

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*Desirable Characteristics of Pre-Service Teacher Student, Department of Psychology  
and Guidance, Rajabhat Rajanagarindra University, Thailand*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

The research purposes are to 1) find out suitable factors for indicating desirable characteristics of guidance teachers and 2) propose indicators of undergraduate students' desirable characteristics by Eastern cultural principle. Survey research was conducted with 194 Chachoengsoa's guidance teachers, spread all school levels (elementary, secondary and high school). The participants were arranged to the study by purposive selected from teachers who attend in Thai Teacher Professional Development Program. Research instrument was a desirable characteristics of guidance teachers questionnaire developed from 7 factors of Kanlayanamitradham (7 qualities of a good friend) compound with 10 desirable characteristics of undergraduate student of Faculty of Education, Rajabhat Rajanagarindra University. Questionnaire content there were 2 parts included 4 items of general data and 25 items of desirable characteristics of guidance teacher. Reliability of questionnaire was 0.686. Data were analyzed by Principal Component Factor Analysis with orthogonal rotation, varimax technique.

The research results indicated that in the original 17 factors such as: lovable, respectable, adorable, being a counselor, being a patient listener, able to deliver deep discourses, never exhorting groundlessly. Those could group into new 6 factors include 1) Teaching competencies, with 8 indicators, factor loading between 0.71-0.77, 2) Good behave, with 9 indicators, factor loading between 0.61-0.68, 3) Teaching spiritual, with 5 indicators, factor loading between 0.50-0.59, 4) Democratism, with 1 indicator, factor loading was 0.60, 5) In-depth communication ability, with 1 indicator, factor loading was 0.72, and 6) Knowledge acquisition ability, with 1 indicator, factor loading was 0.58.

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## Introduction

The first wave of educational reform in Thailand had begun in 1999 with the obligation of the National Education Act, which had been revised in 2002 (Office of the National Education Commission, 2002). This reform impacted students, teachers, administrators, faculty staff, and educational personal throughout the country. It yielded some gratifying outcomes regarding education system, administration structures, and education quality assurance. Inevitably, several concerns were raised particularly on: "quality of learners, teachers, faculty staff, and educational personal; efficiency of administration and management; and need for increased educational opportunities" (Office of the Education Council, 2009). To deal with such concerns, Thailand has initiated the second wave of educational reform with the Proposals for the Second Decade of Educational Reform (2009-2018) (Office of the Education Council, 2009). The vision of the forthcoming reform is that "All Thai people are able to access high quality lifelong learning". Seven frameworks of the reform were proposed to the government; one of these explicitly deals with quality of teachers.

Teachers appear as an essential component of education. Teacher characteristics and teaching styles are related to the diversity of teaching and learning and, ultimately, the presence of effective classroom practice (Opdenakker & Damme, 2006). Teachers with effective characteristics and teaching styles indeed contribute to the success of educational reform in general and co student learning gains in particular (Stronge, Ward, Tueker, & Hindman, 2007). Thus, promoting effective teachers, or cultivating the characteristics of effective teachers in extant teachers, is a major responsibility of the government in the educational reform era.

Defining characteristics of effective teachers is not an easy task because several factors can be brought into consideration such as aim, focus, scope, policy, culture, and context. In the Thai literature, most of the teacher characteristic studies focused on the desirable characteristics of teachers in general rather than in specific area (i.e., school psychology, guidance) and circumstance (i.e., educational reform) (Boontapuan, 2005; Jogsatit, 2004; Kaneperm, 2002; Kompetpanee, 2005; Limprawat, 2002; Sawetnai, 1999; Suphatnanon, 2002; Watewong, 2002).

The present study aims to explore perspectives of teachers, and school administrators regarding the characteristics of guidance teachers for educational reform by using Kanlayanamitratham (7 qualities of a good friend) and 10 characteristics of undergraduate student of Faculty of Education, Rajabhat Rajanagarindra University. The combination of diverse perspectives taken from persons involved in educational reform may provide some useful and valid insights to potentially serve the government, policy makers, curriculum developers, and guidance teacher educators in improving guidance teaching and learning as well as guidance teacher education and professional development for educational reform.

## Research Question

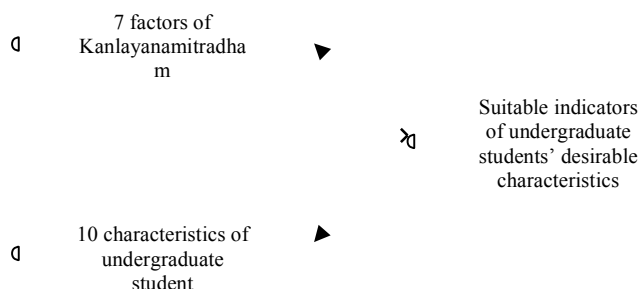
What are factors and indicators of guidance pre-service teacher's desirable characteristics?

## Objectives

Research objectives were 1) find out suitable factors for indicating desirable characteristics of guidance teachers and 2) propose indicators of undergraduate students' desirable characteristics of pre-service teacher student, department of Psychology and guidance, Rajabhat Rajanagarindra University by eastern cultural principle (7 factors of Kanlayanamitratham)

## Research Framework

□



## Methodology

### Research procedure

The documentary research was the first step for indicated good characteristics of guidance teacher. Researcher found 7 factors of Kanlayanamitradham (15 items) and 10 characteristics of undergraduate student, Faculty of Education, Rajabhat Rajanagarindra University were merged into good characteristics of guidance teacher (GCGT). Then, the researcher decided factor analysis criteria and determined by exploratory factor analysis (EFA) tested by performing a Principal Component Factor Analysis with orthogonal rotation, varimax technique. Finally, improved the desirable characteristics of guidance teachers indicators from expert's recommendations data for high efficiency items.

### Participants

Survey research was conducted with representativeness 194 Chachoengsoa's guidance teachers, spread all school levels (elementary, secondary, and high school) and office of Chachoengsoa educational service areas (primary service area 1, primary service area 2, and secondary service area 6). The participants were arranged to the study by purposive selected from all Chachoengsoa guidance teachers who attend in 2011 Thai Teacher Professional Development Program, the government project.

### Research Instrument

Research instrument was a desirable characteristics of guidance teachers questionnaire developed from 7 factors of Kanlayanamitradham (7 qualities of a good friend) compound with 10 desirable characteristics of undergraduate student of Faculty of Education, Rajabhat Rajanagarindra University. The questionnaire total consists of 29 items in the two parts of general data (4 items) and desirable characteristics of guidance teacher (25 items). The internal consistency reliability of questionnaire determined by Cronbach's alpha was 0.686. That's has been well above an acceptable alpha value of 0.60 in most studies (Hair et al., 1998). In administering the questionnaire, respondents are asked to answer their characteristics in five-point Likert-scale items from "(1) never or almost never true of me" to "(5) always or almost always true of me"

## Data collection and Analysis

The data were collected at the end of 2011 Thai Teacher Professional Development Program, the government project. When data collection was finished, a research assistant examined all the data, screened out missing data, and coded the data into the SPSS program for analysis. Then, researcher analyzed the general data by descriptive statistics, for instance, frequency, mean, standard deviation, and percentage. For the desirable characteristics of guidance teacher data correlations among the constructs were investigated by calculating Pearson product-moment correlations. Finally, the researcher determined exploratory factor analysis (EFA) tested by performing a Principal Component Factor Analysis with orthogonal rotation, varimax technique.

## Results

The results of general data analysis shown 90% of the participants were female. Range of age were over 50 years old mostly (about 60%), inferior to 40-49 years old (about 20%). All participants are from schools in Chachoengsoa Province that there were amount of students between 67 in minimum and 3915 maximum ( $\bar{x} = 761.17$ ,  $SD = 877.33$ ) and amount of teachers were 6 minimum to 170 maximum ( $\bar{x} = 37.61$ ,  $SD = 38.50$ ).

For the desirable characteristics of guidance teacher data correlations among the item were investigated by calculating Pearson product-moment correlations. As shown in table 1, the characteristics data correlations between .009 to .709

Table 1 Pearson product-moment correlations, means, and standard deviation

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25
Q1	1.000																								
Q2	.405**	1.000																							
Q3	-.064	-.021	1.000																						
Q4	.438**	.474**	-.079	1.000																					
Q5	.410**	.516**	-.114	.572**	1.000																				
Q6	.277**	.346**	.026	.389**	.459**	1.000																			
Q7	.347**	.283**	.011	.459**	.565**	.624**	1.000																		
Q8	.479**	.418**	-.010	.409**	.579**	.473**	.543**	1.000																	
Q9	.397**	.356**	-.138	.343**	.338**	.473**	.350**	.373**	1.000																
Q10	.383**	.428**	-.145	.415**	.558**	.505**	.580**	.510**	.457**	1.000															
Q11	.412**	.604**	-.028	.478**	.560**	.530**	.520**	.492**	.517**	.709**	1.000														
Q12	.390**	.407**	-.170	.475**	.525**	.501**	.565**	.510**	.450**	.600**	.603**	1.000													
Q13	.077	-.051	.009	.035	.005	.183	.182	-.037	.202*	.144	-.018	.145	1.000												
Q14	.199*	.304**	-.129	.286**	.292**	.207*	.325**	.327**	.129	.369**	.259**	.428**	.112	1.000											
Q15	.403**	.267**	.040	.260**	.269**	.384**	.342**	.403**	.397**	.305**	.271**	.155	-.092	.163	1.000										
Q16	.346**	.313**	-.052	.293**	.334**	.411**	.399**	.479**	.227*	.326**	.398**	.280**	-.047	.304**	.393**	1.000									
Q17	.314**	.385**	-.170	.410**	.569**	.449**	.477**	.422**	.337**	.401**	.419**	.380**	-.030	.347**	.362**	.468**	1.000								
Q18	.523**	.481**	-.066	.424**	.529**	.441**	.534**	.473**	.310**	.522**	.548**	.427**	.043	.461**	.361**	.504**	.549**	1.000							
Q19	.381**	.294**	.095	.218*	.367**	.333**	.372**	.442**	.355**	.396**	.242*	.278**	.102	.248**	.503**	.157	.195*	.282**	1.000						
Q20	.384**	.370**	-.013	.345**	.449**	.365**	.386**	.494**	.318**	.366**	.412**	.405**	.011	.339**	.345**	.387**	.367**	.335**	.314**	1.000					
Q21	.442**	.524**	.036	.524**	.526**	.349**	.540**	.429**	.272**	.405**	.411**	.485**	.017	.428**	.467**	.407**	.492**	.582**	.343**	.439**	1.000				
Q22	.469**	.548**	-.103	.548**	.622**	.425**	.487**	.465**	.463**	.470**	.506**	.419**	.050	.225*	.486**	.455**	.502**	.532**	.434**	.502**	.667**	1.000			
Q23	.511**	.364**	-.018	.392**	.525**	.433**	.413**	.525**	.215*	.281**	.394**	.379**	-.026	.188	.390**	.440**	.443**	.394**	.335**	.646**	.405**	.546**	1.000		
Q24	.310**	.269**	-.015	.317**	.443**	.381**	.441**	.495**	.215*	.462**	.345**	.374**	.118	.411**	.356**	.390**	.489**	.424**	.464**	.428**	.440**	.395**	.557**	1.000	
Q25	.131	.214*	-.075	-.077	.110	.102	.171	.243*	.192*	.167	.133	.094	.097	.223*	.295**	.398**	.320**	.204*	.281**	.302**	.190	.303**	.278**	.458**	1.000
M	4.019	4.629	4.811	4.252	4.425	4.261	4.429	4.542	4.296	4.523	4.592	4.546	4.654	4.425	4.169	4.611	4.448	4.196	3.813	4.333	4.398	4.308	4.429	4.527	4.607
SD	.733	.539	3.797	.7016	.6726	.6776	.6005	.5710	.6733	.6493	.5643	.6322	4.004	.6863	.7100	.5773	.5865	.7195	.7413	.6697	.6256	.6786	.6311	.5873	.5949

\* p<.05, \*\* p<.01

The results of exploratory factor analysis by determined KMO (Kaiser – Meyer-Olkin) was 0.882 higher than 0.5 and tend to 1.00 that mean the data are appropriate to analyze by factor analysis. Bartlett's of sphericity shown statistic significant that mean the data have high correlation enough to analyze by factor analysis either. The research results found 25 appropriate indicators and merged into new 6 factors by considered of the eigen value.

1. High academic achievement
2. High responsibility even on yourself and others

3. Be a good thinker and able to find new knowledge
4. Systematic working, planning, and managing
5. Able to motivate students and colleagues
6. Excellence in teaching and inspiring students
7. Able to impress the students in the school and community
8. Has a respected personality
9. Belief in potential of student and reduce inequality in society
10. Warmly and easy to communicate
11. Able to communicate with students, colleagues, and the general public
12. Be a good listener and adviser
13. Able to explain the difficult things easier
14. Was not induced in the unreasonable to student
15. Able to lead others
16. Faith in the teaching profession
17. Has ability to work in education field
18. Analysis, synthesis, critical thinking and creativity
19. Able to use of foreign languages, computers and technology in education as well
20. Exemplary moral values and to others
21. Assertive and reasonable solution
22. Able to adapt environment for benefit of the student learning
23. Balance of knowledge, mental, and health
24. Good personality
25. Behave as an effective democratic monarchy

The new 6 factors:

factor 1: Teaching competencies, with 8 indicators, factor loading between 0.71-0.77

factor 2: Good behave, with 9 indicators, factor loading between 0.61-0.68

factor 3: Teaching spiritual, with 5 indicators, factor loading between 0.50-0.59

factor 4: Democratism, with 1 indicator, factor loading was 0.60

factor 5: In-depth communication ability, with 1 indicator, factor loading was 0.72

factor 6: Knowledge acquisition ability, with 1 indicator, factor loading was 0.58.

The eigen value, % of variance, and Cumulative % of variance as shown in table 2

Table 2 Eigen value, % of variance, and Cumulative % of variance

Factor	Eigenvalue	% of variance	Cumulative % of variance
1	9.921	39.683	39.683
2	1.587	6.348	46.031
3	1.449	5.794	51.825
4	1.297	5.190	57.015
5	1.164	4.655	61.670
6	1.017	4.067	65.736

## Implications

The perspectives of stakeholders involved in pre-service teacher institute are indeed an important indicator that may drive the efficiency teacher. This study revealed indicators regarding desirable characteristics of guidance teacher. The perspectives emerged from this

study maybe beneficial for guidance teacher educators, curriculum developers, and policy maker in designing, planning, and implementing pre-service teacher education, professional development, and so on.

### Acknowledgements

This research was funded by the department of guidance and psychology, faculty of education, Rajabhat Rajanagarindra University, Thailand. Any opinions expressed in this article are solely of the author.

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*Conversation Analysis in Task-Based Instruction —  
A Pedagogical Activity Design Model*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

Research and theories in Second Language Acquisition and Applied Linguistics abound, but many language teachers find it difficult to apply research and theories to practice. To address this issue, the present paper proposes The Pedagogical Activity Design Model (PAD-Model) Prototype which is theoretically grounded and readily accessible to second language teachers. The model follows three steps: setting learning objective setting, choosing teaching materials, choosing a teaching framework. In the second part of the paper, the author proposes The Communication-Centered Pedagogical Activity Design Model (CC-Model), which is based on the PAD-model prototype. The CC-model sets communicative competence as its learning objective, uses conversation analysis as the resource of its teaching materials, and finally utilizes Task-Based Instruction as its teaching framework. The PAD-model aims to provide an easy plane on which second language teachers can design pedagogical activities based on their knowledge base and philosophy so that the disconnection from theory to practice can be bridged.

Keywords: Conversation Analysis, Task-Based Instruction, The Pedagogical Activity Design Model (PAD-Model) Prototype, The Communication-Centered Pedagogical Activity Design Model (CC-Model)

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## 1. Introduction

A great number of SLA theories have been proposed, attested, challenged, abandoned, revised, revived, and applied to practice, and therefore we are supposed to have a great synchronization and coordination of sound SLA theories and practice by now. However, the disconnection of theories from practice is still a serious issue.(Gloria Lo, 2005; Beaugrande,1997; Liu, 1999). Liu (1999) surveyed non-native English speakers with MA TESOL degrees from English speaking countries, and only one third of the surveyed participants considered the SLA theories they had learned in their MA TESOL programs to be useful.

The author of the present paper has experienced this disconnect from theory to practice prior to, during, and subsequent to her MA study in Applied Linguistics. Personal experience as an EFL teacher has alerted her to the fact that most EFL teachers in Taiwan lacking in SLA and Applied Linguistics knowledge tend to use teaching approaches and materials that are theoretically unsound. She was also well aware that even teachers familiar with Applied Linguistics and SLA theories find them very difficult to apply to practice.

Therefore, to address these issues, the present paper aims to propose a model of designing pedagogical activities that is not only theoretically grounded but also readily accessible to second language teachers. In the first part of the paper, the author will give an overview of the model prototype and a brief explanation of the model constructs. Since the model encompasses multiple theoretical arguments and pedagogical practice as its constructs, the second part of the paper will give a brief account of each theoretical argument and pedagogical practice. In the third part of the paper, the author will provide a detail account of how these elements are logically connected and bounded, and then suggest a sample activity whose design is based on this model.

## 2. The Communication-Centered Pedagogical Activity Design Model (CC-Model)

### 2.1 The model prototype and its constructs

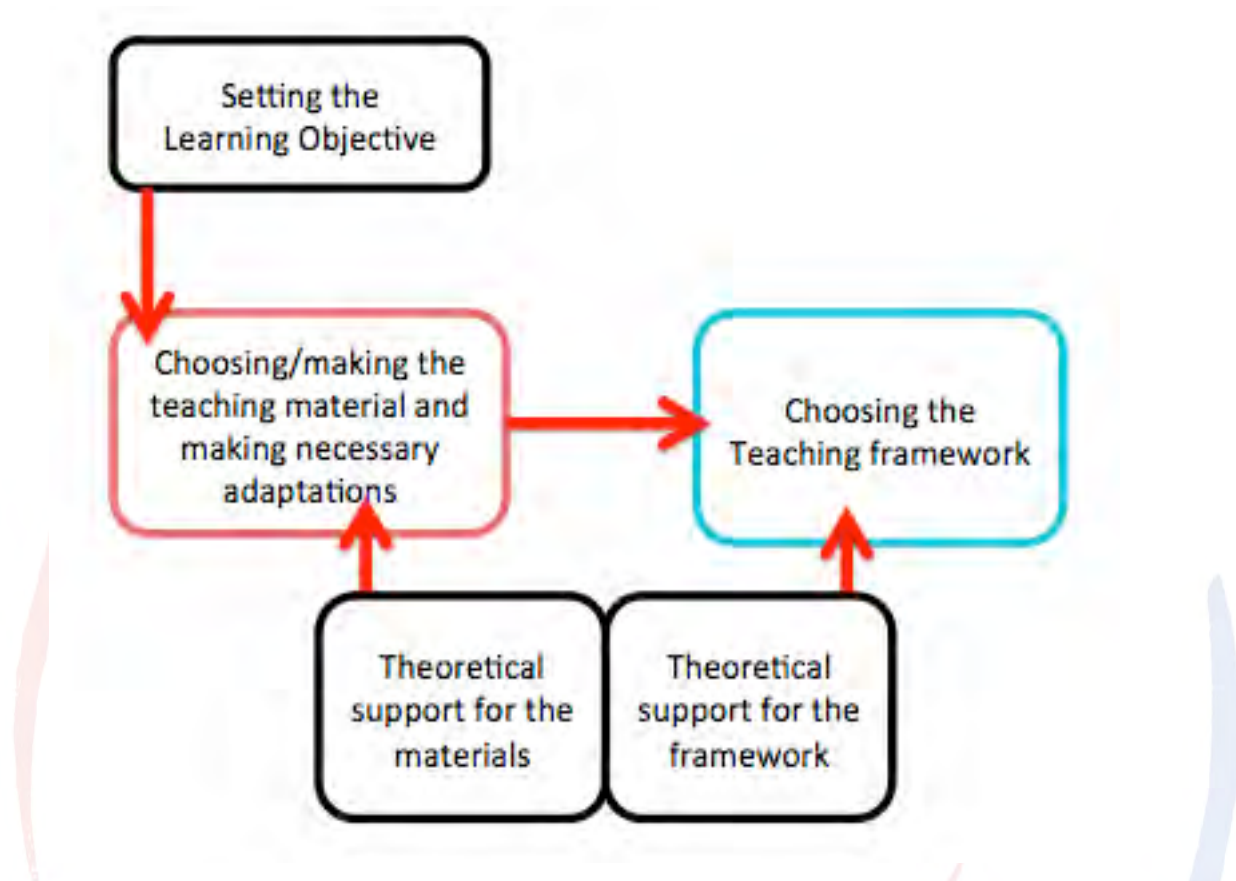


Figure 1. The Pedagogical Activity Design Model (PAD-Model) Prototype

First of all, setting the learning objective is the first step in every pedagogical activity design. Questions like, “What is the ultimate goal of this pedagogical activity?” and, “What do I want my students to learn?” are questions that teachers often ask when they plan their teaching, and this is the “objective setting”.

Secondly, teachers need to know what materials to use in the framework. Some questions asked are, “Where can I get the materials?”, “Do I buy or make the materials?”, “What format should the materials be?”, and “How can I tailor the materials to fit the learning objectives?”. Not only should teachers have access to materials, they also need to know how to tailor the materials to address the particular classes they are teaching.

Thirdly, teachers need to choose a teaching plan that can materialize the learning objectives, and also can accommodate the teaching materials we have chosen. Teachers need to be familiarized with different teaching frameworks/approaches in order to know which works with the learning objective that has been set.

At the bottom of the model are “theoretical supports”. It is very important to choose the framework and materials supported by theories and research that fit the teachers’ teaching philosophy and the local conditions (the set of conditions, concerns, and limits in the local, immediate environment). It is dangerous for teachers to design class activities (syllabus and courses alike) without theoretical support, since they may lag behind the current research and employ a teaching framework and materials that are unfit. Not keeping up with the research and theories may also cause the teachers to reinvent the wheels or repeat mistakes.

## 2.2 The Communication-Centered Pedagogical Activity Design Model (CC-Model)

The author of the present paper used the PAD-Model prototype to build a Communication-Centered Pedagogical Activity Design Model, which is developed with communication as its center. The following shows the plotting of the CC-model:

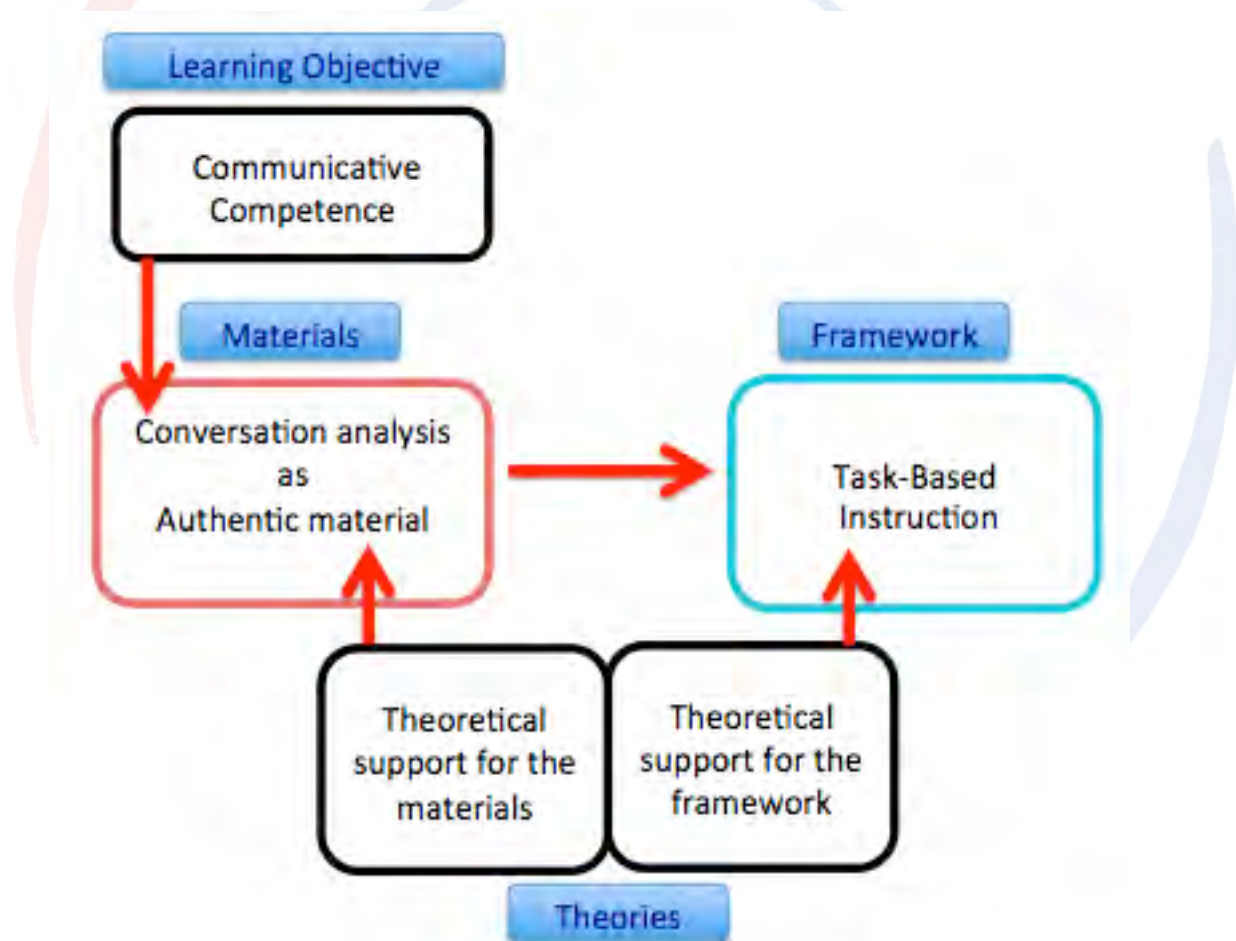


Figure 2. The Communication-Centered Pedagogical Activity Design Model (CC-Model)

First of all, we set the communicative competence as the learning objective. In the final section of the paper in which a sample activity is shown, the author will show how to evaluate and choose which competence to set as the learning objective.

In the second step, the CC-model uses the method of Conversation Analysis to produce authentic teaching materials. This choice is grounded in the desire to incorporate authentic materials focused on daily conversation, an aspect overlooked in the wide application of authentic materials. The author will again give a detail account of the conversation analysis and how to utilize it to create authentic materials, as well as its theoretical support in the next and the final section.

In the third step, the CC-model uses Task-Based Instruction (TBI) as its teaching framework. TBI has been widely used in second language teaching because of its capacity to stimulate genuine communication, believed to trigger acquisition and cognitive development. Details in regard to TBI and its theoretical support will be provided in the next section.

### 3. Conceptual framework and related literature in the CC-model

#### 3.1 Communicative competence

Setting objectives should be prioritized whether designing an entity as large as a language school or program, or as small as a single syllabus or pedagogical activity. Objectives (or learning outcomes, or learning goals) set the directions and in turn set the steps. In many syllabus or course design research, the first step is setting the objective and goals. Likewise, checking the goals/objective has also been considered the first step in language program evaluation (Griffie & Gevara, 2011). Even though the present paper focuses on pedagogical activity design (as opposed to entire program or course syllabus), setting learning objectives has to be the first step.

What to set as the learning objective, however, is another issue. Munby (1978) points out that validly specifying the target communicative competence is the most crucial problem facing a foreign language syllabus designer, and ultimately the one producing materials (Munby 1978, page vi). It has been widely agreed upon that learning a language does not only involve learning vocabulary and syntax (as previously believed), and in order to successfully communicate in the target language, one needs to possess communicative competence. Scholars in many fields have recognized the importance of communicative competence, and thus much research has been done to investigate communicative competence (e.g. Canale & Swain, 1980; Gumperz, 2000; Saville-Troike, 1989, 1996). Though communicative competence is mainly employed in language testing and assessment, it also works as a learning objective since tests and course contents should inform each other to form a positive “washback” effect (the teach-to-the-test effect). (J. Lee & VanPatten, 2003)

Many different categorizations and rationales of communicative competence have been proposed and adopted, but they are essentially similar, with slightly different naming and categorization systems.<sup>1</sup> In short, communicative competence encompasses all

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<sup>1</sup> Note that this is the case if we only look at the field of language teaching and learning, not other fields that also investigate communicative competence such as communication studies, which takes a very difference approach to probing communicative competence (e.g. Knapp & Antes, 2008).

competences one needs in order to be engaged in meaningful and successful communication in different social settings.

The following account of communicative competence is adopted and adapted from Bachman and Palmer (1996) and Wong and Waring (2005) for their easy accessibility for general language teachers.

- a. Organization competence: knowledge of linguistic elements in communication
  - (A) Grammatical competence concerns the organization of individual utterances or sentences and includes knowledge of vocabulary, syntax, morphology, graphology, and phonology.
  - (B) Textual competence concerns the organization of utterances or sentences to form texts and includes the cohesion and rhetoric of conversational organization.
- b. Interactional competence: the ability to use the various interactional resources to interact and communicate
  - (A) Socio-cultural competence enables interlocutors to create or interpret language that is appropriate to a particular language use setting. It includes knowledge of dialects and varieties, registers, natural or idiomatic expressions, cultural references, etc.
  - (B) Functional competence concerns how utterances and texts are related to the communicative goals of language users.
  - (C) Strategic competence refers to the metacognitive ability to use verbal and non-verbal communication strategies to compensate for breakdowns in communication or to improve the effectiveness of communication. It is thought of as a higher order executive process that provides a cognitive management function in language use.

It is crucial to know what types of communicative competence to set as the learning objective of each pedagogical activity, since only then can we integrate the instruction and the materials to serve one unified purpose.

### 3.2 Task-Based Instruction

#### 3.2.1 Brief introduction of Task-Based Instruction (TBI)

The CC-Model is built on TBI as its pedagogical framework. TBI outweighs other teaching approaches and methodologies because it fortifies important principles and practices in language teaching. These principles and practices include (but are not limited to): interaction-driven learning of communication in the target language, the use of authentic texts in the classroom situation, how well L2ers' learn the learning process itself (besides the learning of the language), a wider application of the learners' own experiences as an important contributing element to classroom learning, linking classroom language learning to the language used in real-life situations (Nunan, 2004, p.1), and the learner-centered classroom design (Willis, 2003).

Definitions of tasks abound, and most of them emphasize the exchange of information, the real purpose of communication, and the necessity of cooperation and interaction (e.g. Richards, Platt, & Weber, 1985; Long, 1985.) In Lee (1999), he reviews many definitions of tasks and provides a well-rounded definition of a task as "a classroom activity or

exercise that has (a) an objective attainable only by the interaction among participants, (b) a mechanism for structuring and sequencing interaction, and (c) a focus on meaning exchange; (2) a language learning endeavor that requires learners to comprehend, manipulate, and/or produce the target language as they perform some set of workplans” (Lee, 1999, p.32).

It is easy to see from the definition of task and the five criteria that a TBI aims for real-time, genuine communication, which promotes learner’s communicative competence beyond the lower level competence (i.e. grammatical and textual competence).

In the CC-model, we will adopt Lee’s (1999) criteria of structuring activities: (1) identify a desired informational outcome, (2) breakdown the topic into subtopics, (3) create and sequence concrete tasks for learners to do, and (4) build in linguistics support, either lexical or grammatical or both.

The first step is to set a learning outcome, and an informational outcome here refers to the end product of the learners’ discussion and collaboration, (e.g. a list, a chart, a spoken summary). In the second step, we need to divide the activities into smaller sub-tasks that are easier for learners to perform and will eventually add up to the completion of the target informational outcome. Third, we need to order the sub-tasks in a reasonable sequence. Finally, we need to provide the learners with linguistics support, which works as a plane on which the learners can collaborate and interact.

### 3.2.2. Theoretical support for the TBI- Socio-cultural Theory and the Zone of Proximal Development

As the PAD-Model suggests, all pedagogical decisions should be backed up by theories, and the author will introduce the theoretical support for the choice of TBI, which is Vygotsky’s Socio-cultural Theory (SCT).

Vygotsky’s (SCT), which originated as a psychological theory of learning and mental development, has been borrowed in the second language acquisition (SLA) research, and has created a broad line of research in SLA. Vygotsky maintains that humans use physical and psychological tools (or *cultural artifacts*) to mediate their interactions with the world. Language is considered the “most pervasive and powerful cultural artifact that humans possess to mediate their connection to the world, to each other, and to themselves”(Lantolf & Thorne, 2007). Through TBI, learners use language to connect to the world, to each other and to themselves, since TBI is a social setting in which the learners need to actively participate in the production of language for a social purpose. Moreover, Vygotsky maintains that human beings do not react automatically and mindlessly to stimuli, but rather are able to “consider possible actions (plan) on an ideal plane before realizing them on the objective plane.” The process of completing a task in TBI necessitates learners to engage themselves in the “planning” that Vygotsky describes; they cannot respond mindlessly to the stimuli because then they cannot complete the task. TBI provides a context for the learners to be involved in planning, which entails “memories of previous actions, attention to relevant aspects of the situation, rational thinking, and projected outcome” (Lantolf, 2008, p.205).

What has been mostly applied to SLA is the notion of the Zone of Proximal Development (ZPD) in the SCT. ZPD has been defined as “the distance between the actual development level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers” (Vygotsky, 1978, p. 86). ZPD has provided justification for TBI because TBI creates a context in which the learners can explore that difference and gain assistance from “more capable peers” or the instructor to reach their upper limit in the ZPD. van Lier (1996, p. 193) expanded the resource for development from only the “more capable peers” to also “interaction with equal peers”, “interaction with less capable peers (e.g. peer teaching)”, and “the inner resources (e.g. knowledge, experience, memory, strength)” which can all be realized in a well-designed TBI.

### 3.3 Authentic materials-Ties the framework and the materials into the CC-Model.

In TBI, the second crucial element besides interaction is authenticity. TBI not only promotes authentic communication but also supports using authentic materials.

The use of authentic materials (also called realia) has been applauded in the field of second language teaching because authentic materials are believed to abound with precious cultural, linguistic, and pragmatic knowledge that cannot be easily duplicated in pedagogically made materials; they are also believed to disabuse learners of stereotypes of the target cultures (Berwald, 1987). Research has not only favored the use of authentic materials in all level of L2 classrooms (e.g., Bacon & Finnemann, 1990; Tomlinson, Bao, Masuhara, & Rubdy, 2001) but has also attested to the positive effects of authentic materials. For example, Peacock (1997) reported the learners' increased motivation. Purcell-Gates, Degener, Jacobson, and Soler (2002) reported that participants engaged in more reading and writing outside classes, and they were reading and writing more complex texts as a result of using real-life materials and authentic activities in class.

However, there are some issues with authentic materials. First of all, when we talk about authentic materials, most of us think of printed, written texts: news article, novels, stories, magazine article, flyers, maps, menus, etc. Actually, even the definition of authentic materials mostly includes examples of written and printed texts. For example, Berwald (1987, p3) defines realia as “real objects, specimens or artifacts-not copies, models, or representations- from a particular culture. Indeed, authentic materials, such as newspaper, magazines, catalogs, timetables, files, etc., are designed for use in real-life situation, not for use as instructional used...Other examples include telephone book, menus, tickets and radio and television broadcast.” Moreover, Vaiciuniene and Uzpaliene's (2010) categorization of authentic materials has also manifested the inclination to printed and written materials. The categorizations are as follows: “daily objects such as business cards, bank leaflets, photographs, receipts, catalogues, currency, reports, financial statements, instructions, bank accounts, application forms, pictures, registration forms, letters/emails, diagrams, agreements, etc; broadcast texts such as newspapers, journals, TV and radio programmes, films, documentaries, general or special literature, etc.; and websites” (Vaiciuniene and Uzpaliene, 2010, p.95). Since written and printed texts are the most common authentic materials, pedagogical activities designed with these authentic materials are, unsurprisingly, mostly reading and writing activities.

The gap that we have observed here is the lack of using genuine daily conversations as authentic materials. Even though audio and video files have already been adopted (such as movies, ESL podcast, songs, YouTube videos), these audio/visual materials are usually made with pre-written scripts which eliminate much precious knowledge in genuine daily conversation.

Despite the need to use genuine daily conversation as authentic material, genuine daily conversation is not easy to adopt. The first problem is scarce resources. Unlike written texts, which can be easily stored and accessed in many formats, audio files are harder to store or access. Another potential issue is the difficulty of adapting daily conversations due to the seeming messiness of such conversations.

To address the two issues of authentic materials (lack of daily conversation as authentic materials and the difficulties of implementing daily conversation in the classroom), the author proposes using Conversation Analysis (CA) as a solution. The author will discuss CA briefly and justify the use of CA to address these issues in the next section.

### 3.4 Conversation Analysis

Conversation Analysis originated as a sociological research methodology and was later borrowed by the field of Applied Linguistics since the core of CA is the study of language. CA, in the most basic definition, is the “study of *recorded*,<sup>2</sup> *naturally occurring talk-in-action*,” and the aim of CA is the to provide “the systematic analysis of the talk produced in everyday situations of human interaction: *talk-in-interaction*” in order to “discover how participants understand and respond to one another in their turns of talk, with a central focus on how sequence of actions are generated” (Hutchby & Wooffitt, 1988, p.14). Markee (2000) deems CA to be a great methodology that complements the SLA research because CA helps us see how learners can gain understanding of the use of new language through the on-line, socially constructed conversation. Furthermore, CA analysis needs to be built upon contexts, including the relationship or the interlocutors, the local and immediate environment, the nature of the topic, etc.

The importance of CA can be revealed through the clarification of some misconceptions about *conversation*. First of all, despite what general people (language teachers and learners alike) believe, conversation is not easy or simple, and it does resemble textbook dialogue. Wong and Waring (2010) argue that engaging in simple daily conversation can be a very daunting task for second language learners. Many language teachers think that once learners acquire enough syntax and vocabulary, they can synthesize their knowledge and they can just go around talking to people. Such ignorance leads to insufficient instruction and practice for learners.

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<sup>2</sup> In Conversation Analysis, naturally occurring conversation needs to be recorded and then transcribed for further analysis. Recorded data can preserve all the important and minute details, as well as subconscious interlocutory choices that the interlocutors made that cannot otherwise be attained or preserved (Wong & Waring, 2010).

The complex sociolinguistic knowledge embedded in the conversation is almost inaccessible to second language learners without proper guidance. If we language teachers do not know how conversation in the target language works, there is no way for us to prepare our learners for daily conversation, which can be a key step in their acculturation.

Second of all, most people think that conversation is messy and does not follow any rules, and this fallacy has contributed to the marginalization of conversation in the field of materials design. CA analyses have contributed to our knowledge that conversation follows order at all points, and people in a certain cultural engage in conversations following a set of rules that differ from culture to culture. (Hutchby & Wooffitt, 1988)

Wong and Waring (2010) summarized the steps to follow in CA data analysis as follows: (1) collecting (recording) data; (2) transcribing data; and (3) analyzing data. Here the author would like to add a fourth step, which is (4) transforming data and findings to pedagogical activities, since the purpose of the PAD-model and the CC-model is to create pedagogical activities.

In the CC-Model, we adopt CA to make the authentic materials because this allows learners to be exposed to genuine daily conversation. Also, the systematic analysis can provide ample data for teachers to draw from to form unified pedagogical activities, such as “topic management strategies”, “repair strategies”, “how the invitations are given, taken, and decline”, etc.

In a word, CA can address the aforementioned two problems because CA requires naturally occurring conversation, and it also provides detailed and systematic analysis of the authentic materials. From this detailed analysis, the teacher can choose the topics that are adaptable and suit the needs of the class.

#### 4. A sample activity from the CC- Model

In the final section of the paper, the author provides a sample pedagogical activity made from the CC-Model.

##### 4.1 Step one: Setting the target communicative competence

Following the CC-model, we first set our learning objectives from the communicative competence. We will assume this is an intermediate Chinese class, and the teacher hopes to promote her students’ strategic competence in carrying out a conversation in the target language.

##### 4.2 Step two: Choosing/making and adapting the materials

Here we use a recorded and transcribed talk between two native Mandarin Chinese speakers. They are both female graduate students in their mid twenties, and they have been friends for more than two years. The recording was done in T’s house, and they

were chatting about their schoolwork, weather, mutual friends, and some other common daily topics.<sup>3</sup>

Since the learning objective is “strategic competence”, the teacher decides to focus on how native Chinese speaker deal with pauses and gaps<sup>4</sup> in their conversation. When dealing with gaps and pauses, interlocutors need to employ their strategic competence to continue the talk.

Before we move onto the next step to design a TBI activity, we will first look at sample excerpts from the transcript to get a better understanding of how Chinese speaker deals with gaps and pauses. We will focus on what triggers gaps and pauses during the talk, how interlocutors buffer the gaps and silence, and most importantly, how they remedy the gaps and silence.

1. What triggers gaps and pauses.

(T and S are talking about T’s PhD minor and her comprehension examinations)

- 7) T: (1.3) then can’t you finish that test and then come take this later? Can’t you?  
8) S : It must be simultaneous  
9) T : (1) oh  
10) (1.3)  
11) S : yeah:::: I thought about it (...) forget it, doesn’t matter  
12) (5)  
13) T : ridiculous:::::  
14) S : ((pouring water)) (3) nah:: depends on what minor you take hhhhhh  
15) T: hhhhhh<sup>5</sup>

We can observe in line 9, 10, and 12 that the lack of “termination practice” (Wong & Waring, 2010) from T has triggered the long series of pauses. Termination practice is a response to recognize receiving the message and signal the desire to terminate the topic. There are several similar excerpts in the original transcript that we can use as our teaching materials.

2. How interlocutors buffer the gaps and pauses

We have found the following buffering devices that the native Chinese speakers use when they are faced with gaps and pauses.

- a. Laughter (hhhhhhh)
- b. Sound prolonging (:::):
- c. Response tokens (that does not add to real meaning)
  - i. Yea, umm, anyways, really? Sure?
  - ii. Oh, that’s right, good, for real?

<sup>3</sup> The recording and transcription were done in 2011 by the author of the present paper, and the language was Chinese. We translated the excerpts into English in the present paper for the sake of serving language teachers in general, regardless of the language. The complete transcript is not provided here.

<sup>4</sup> A gap is defined as a between-turn silence, and a pause as a within-turn silence (Sacks, 2004).

<sup>5</sup> For a complete and detail explanation of the transcription symbols, please see Schegloff (2007).

- iii. Phatic function terms (e.g. Yea, yes, but, don't know)
- d. On-topic comments that add minimum meaningful value. e.g. so funny, ridiculous

### 3. How interlocutors remedy of pauses and gaps:

- a. Staying on the previous topic

133) T: I though he got into another school and then (...) why is he going to another school at this time of the year?

134) S : yea it doesn't make sense

135) T : (0.5) yea

136) S: umm

137) (3)

138) S : so:::

139) (3)

140) T: yea

141) S: anyways

142) T : that's right

143) S : yea, I think

144) T : and also they left so suddenly

- b. Change to a new topic

158) S : (1) some require more than just tests

159) T: oh I don't know but I think he, don't know::: yea:::

160) S: (2)umm::: (2) really::

161) T: (1) don't know::

162) (3)

163) S : huh then you now you now you now go to school must be convenient isn't it:::.<sup>6</sup>

### 4.3 Step three: Plotting the materials onto the TBI framework.

In the third step, we will apply the CA transcript and analysis to the TBI framework following Lee's (1999) criteria of structuring activities:

(1) Identify a desired informational outcome: The learners need to come up with a list of buffer devices that they use in their first language, and they need to make a list to compare the buffer devices of their target language and first language.

(2) Break down the topic into subtopics: We will break down the topic into 3 subtopics: pre-task, during-task, and post-task.

(3) Create and sequence concrete tasks for learners to do

(4) Build in linguistics support, either lexical, grammatical or both: We will list the "buffers" that we identified in the transcript analysis in the previous section, and ask learners to study them and guess their meaning. We will also provide the learners the transcripts to read.

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<sup>6</sup> The repetition of "you now" is original in the transcript.

### **Sample Task: Rescue the awkward moments!**

Pre-task: Awareness raising and world knowledge

#### **Brainstorming:**

Have you been caught in an awkward moment where no one can continue on the topic? What has triggered the silence, and how did you to hang on to the conversation?

#### **Step 1)**

Work in groups of 2, make a list of things you said or would say to help the conversation go on before you can come up with new topics or add meaningful comments to the topic.

**Step 2) Work in a group of 2. Look at the list of words or phrases, and guess what they mean and when Chinese speaker use them.**

- iv. Yea, umm, anyways, really? Sure?
- v. Oh, that's right, good, for real?
- vi. Yea, yes, but, don't know (at the beginning of a new turn)
- vii. So funny, ridiculous

#### **Step 3)**

Read the following conversation excerpts and identify the strategies that native Chinese speakers use to rescue the silent moment. Compare the techniques used in your L1 and those in Chinese; list similar and different techniques (each group will get one different excerpt).

- 158) S : (1) some require more than just tests  
159) T: oh I don't know but I think he, don't know::: yea:::  
160) S: (2)umm::: (2) really:::  
161) T: (1) don't know:::  
162) (3)  
163) S : huh then you now you now you now go to school must be convenient isn't it::::::

During task: Collaboration & communication

**Step 4)** Share what you found in step 3)

**Step 5)** Each group reads one excerpt and identifies the starting point of the silence, the ending point of the silence, and what happened in between.

**Step 6)** Act out excerpts with your group mates. Pay attention to the gaps and pauses.

**Step 7)** Take notes of other groups' acting and report what technique in saving conversations you have identified from them.

Post-task: Reflection & Application

#### **Homework:**

Please record your conversation with your native speaker friend and report your analysis to the class: Did the communication breakdown? Where? What did you or your native speaker friends do to keep the conversation going?

#### **4.4. Discussion:**

The sample activity uses transcript and data in Chinese, and if a teacher wants to adopt the CC-Model, it's important to record conversation in their target language and analyze

the recorded data to get the conversation features that are distinct to the target language and culture. There is some data done in English, but not in many other languages. It is suggested that language teachers initiate this work in the language that they teach. It is important to know that every culture follows a different set of rules in communication, and even though there are indeed similar practices employed in many different languages, it is usually the very subtle features that make or break a conversation. It takes systematic CA analysis to discern these subtle rules and apply them to teaching.

#### 5. Conclusion:

The PAD-model that the present paper proposed is a model that can be easily adopted by language teachers. Based on the teachers' knowledge base and their philosophy, they can set the learning objective and choose a framework and materials that can be woven into a soundly designed pedagogical activity. On the other hand, the CC-Model, which is built upon the PAD-model, reflects the importance of communication in SLA. The CC-model incorporates communicative competence as its learning objective, and then employs TBI as its framework, which emphasizes the communication, interaction, negotiation, and collaboration among learners. Finally, the CC-Model utilizes CA to create authentic materials because, on top of the conversation and interaction that TBI will make the learner produce, they are explicitly studying the features of native talk that may be otherwise overlooked by the learners. The author's purpose is to offer language teachers an easily understood and readily accessible model, and to demonstrate how to apply the PAD-Model to create a pedagogical activity.

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*People's Participation in the Activity of Pharmaceutical Development  
Project in Community, A Subject in Technical Pharmacy Study Program,  
Yala, Thailand*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

The purposes of this research were to study and compare participation levels of the general public in the Pharmaceutical Development Project in Community. The samples were 152 students studied in the Diploma of the Public Health Program (Technical Pharmacy). Data was collected in April to May 2012 by using a questionnaire with 5 rating scales and open-ended questionnaires. The reliability of this study was 0.79 (cronbach's alpha). The statistics employed to analyze the data were percentage, standard deviation, t-test and F-test.

The research findings revealed that:

1. Overall, public participation in the Pharmaceutical Development Community Project in Community was at a high level and the participation levels consisted of five components: participation in problem finding, project planning, project conduction, also project evaluation and project receiving benefits. Each component showed a high participation level.
2. By comparison with the participation levels via several kinds of personal factors such as gender, age, education level, administrative position in the community, the periods of living time in the community, and the project information obtaining. It can be seen that the samples' participation was not significantly different with those factors.

The suggestions from this students' project were that people required an increase of a health promotion project by cooperation with local organizations. Some people suggested that students' project should be more promoted widely to people in community and be set an appropriate time with local people's life style.

Key words: *Participation, Pharmaceutical Development in Community*

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## 1. Introduction

Sirindhorn College of Public Health, Yala is one of the public higher education institutions in Thailand. The main missions of the college are five areas as the following; 1) producing community health care workers for Thai health care system 2) developing health care worker's competencies 3) Researching and developing in health knowledge 4) Serving knowledge and several equipments to social responsibility and 5) caring and conserving Thai art and culture. The college aims to engross in quality learning system and improve straight forward to be a learning organization to produce high quality products.

The Diploma of Public Health Program (Technical Pharmacy) is one of the study programs in Sirindhorn College of Public health, Yala. This program aims to educate a pharmacy technician to be an assistant of a pharmacist and a health care team for promoting rational drug use in health care system, especially primary health care in community area. The teaching approaches in this program emphasize the students' experiences of working in a real situation and realize how to participate community. Pharmaceutical Development Project in Community is one subject in such program, which emphasizes to provide education for students by experiences and training to work in the sense of a community management in terms of health problem as pharmacy side. The study procedure is beneath participating of a community and a health team by using the principle of research methodology, data collection, problem specification, problem arrangement, project writing and conduction follow the project framework and systematically project evaluation.

Comments from this subject between 2010 and 2011 found that there were few people interested in the health care promotion approaches and also a low response for being participated with students provided the knowledge activities of chronic diseases for them in community. This study was investigated that people's participation and what factors has influenced this decision on this community pharmaceutical development project, a subject in Technical Pharmacy Study Program, Yala.

## 2. Research Methodology

This research was a survey study. The data from 152 samples was collected in April to May 2012 by using simple random sampling method from the label address of people lived in Ban-Nam-Yen, the community in Mueng, Yala, southern of Thailand. The research tool was a questionnaire consisting 3 parts as follows; 1) Independent variables 2) Dependents variables, and 3) Opened-end questions.

The independent variables were personal factors such as gender, age, education level, occupation, income, administrative position in community, a period of living time at the community and the information acknowledgement about the students' project.

The dependent variable was the people's participation in students' project. The questionnaire was 5 rating scales to collect data of the participation consisted of 5 components according to the problem finding, the project planning, the project conduction also project evaluation and project receiving benefits. The opened-end questionnaires were to explore any problem and suggest for the students' project.

The research tool was established by three experts for checking the validity of the questionnaires and analyzing the accuracy of the accordance by using the value of IOC (Index of item-objective concurrence). The questionnaires were used in accordance with at least 0.5 on average

accordance index from the three experts, then were led to change and check in order to try out with some people were not involving in a purposive sample of 30 people of this study. The results of reliability checking by accordance within the internal consistency method used Crinbach's alpha was 0.79.

Quantitative data was analysed by using a program. The statistics to describe personal factors were frequency and percentage. The participation levels in student's project were described by mean ( $\bar{X}$ ) and standard deviation (S.D.). The mean value was separated in 5 levels followed Best method (Best, 1977), presented in Table 1.

**Table1:** The translation of people participation level in student's project

<b>The mean value</b>	<b>The participation level</b>
4.50 – 5.00	Very high
3.50 – 4.49	High
2.50 – 3.49	Moderate
1.50 – 2.49	Low
1.00 – 1.49	Very low

The inferential statistic was used by t-test to compare the average of participation levels between the groups with two difference variables and was used by F-test to compare the average of participating levels between the groups with more than two variables.

The opinions and suggestions from open-end questionnaires were determined by using content analysis for finding the important project conduction of student project in community.

### 3. Result

The research results were summarized as follows:

1. Personal factors, the several variables of 152 samples were determined by frequency and percentage. The results were presented in Table 2.

**Table 2:** The personal factors of samples

N = 152

Personal factors	Frequency	Percent
<b>1. Gender</b>		
1.1 Male	71	46.7
1.2 Female	81	53.3
<b>2. Age</b>		
2.1 Less than 30 years	40	26.3
2.2 30-39 years	34	22.4
2.3 40-49 years	40	26.3
2.4 50-59 years	23	15.1
2.5 More than 60 years	15	9.9
<b>3. Education level</b>		
3.1 Lower the bachelor's degree	132	86.8
3.2 Bachelor's degree	20	13.2
3.3 Higher the bachelor's degree	-	-
<b>4. Occupation</b>		
4.1 General laborer	65	42.8
4.2 Farmer	55	36.2
4.3 Government servant	11	7.2
4.4 Private employee	4	2.6
4.5 Businessman	7	4.6
4.6 Others	10	6.6
<b>5. Average income</b>		
5.1 Less than 5,001 baht	56	36.8
5.2 5,001 – 10,000 baht	88	57.9
5.3 10,001 – 15,000 baht	6	3.9
5.4 15,001 – 20,000 baht	2	1.3
5.5 20,001 – 25,000 baht	-	-
5.6 More than 25,000 baht	-	-

**Table 2:** The personal factor of samples (Continuous)

Personal factors	Frequency	Percent
<b>6. Position in community</b>		
6.1 Community leader	6	3.9
6.2 Community committee	4	2.6
6.3 General people	137	90.1
6.4 Others	5	3.3
<b>7. Period of living time at community</b>		
7.1 Less than 1 year	1	0.7
7.2 1-3 years	-	-
7.3 3-5 years	-	-
7.4 More than 5 years	151	99.3
<b>8. Information receiving in the student project</b>		
<b>8.1 Source of information</b>		
8.1.1 Printing medias such as local newspaper, journal	4	2.6
8.1.2 Electronic medias such as E-mail	-	-
8.1.3 Audiovisual medias such as community radio	12	7.9
8.1.4 Project medias such as information board, exhibition	-	-
8.1.5 Personal medias such as community health volunteer	136	89.5
<b>8.2 Frequency of information receiving</b>		
8.2.1 Less than 2 times / week	17	11.2
8.2.2 2-3 times / week	117	77.0
8.2.3 More than 3 times / week	18	11.8

According Table 2, the majority samples were female, age was between 40-49 years old, education level of the samples was lower the bachelor's degree, occupation was general laborer, average income was 5,001 – 10,000 baht per month, administrative position in community was general people, a period of living time at the community was more than 5 years, information source providing a students projects was personal medias, and the frequency of information obtaining was were 2-3 times per week.

2. Overall of the results, the level of public participation in Pharmaceutical Development Project in Community was a high level, averaging on  $3.63 \pm 0.71$  (mean  $\pm$  S.D.). The participation was separated into five components presented in Table 3.

**Table 3:** The participation levels in Pharmaceutical Development of a Community Project

The participation components	mean	S.D.	Participation level
1. Participation in community problem finding	3.67	.85	High
2. Participation in project planning	3.51	.86	High
3. Participation in project conduction	3.61	.79	High
4. Participation in project evaluation	3.50	.90	High
5. Participation in project receiving benefits	3.78	.75	High
<b>Overall</b>	<b>3.63</b>	<b>.71</b>	High

Data from Table 3 was determined that the people's participation among 5 components was at high level ( $3.63 \pm 0.71$ ). The highest score of all components of participation level was "participation in project receiving benefits", this score was  $3.78 \pm 0.75$ . In addition, the lowest component was "participation in project evaluation", averaging on  $3.50 \pm 0.90$ .

3. The comparisons of the levels of sample's participation as Table 4 and 5, It indicated that the participation of the informants with difference personal factors were not significantly different.

**Table 4:** The comparisons of participation level for the groups with two difference variables

Test variables	mean	S.D.	t	Sig.
<b>Gender</b>				
Male	3.19	.78	.620	.536
Female	3.27	.63		
<b>Education level</b>				
Lower the bachelor's degree	3.23	.72	.022	.983
Bachelor's degree	3.23	.62		

**Table 5:** The comparisons of participation levels for the groups with more than two variables

Test variables	mean	S.D.	F	Sig.
<b>Age</b>				
1 Less than 30years	3.32	.67	.848	.497
2 30-39 years	3.36	.64		
3 40-49 years	3.10	.79		
4 50-59 years	3.17	.80		
5 More than 60years	3.19	.55		
<b>Occupation</b>				
1 General laborer	3.26	.61	3.108	.051
2 Farmer	3.39	.77		
3 Government servant	3.34	.36		
4 Private employee	2.75	1.21		
5 Businessman	2.67	.74		
6 Others	2.72	.56		
<b>Average income</b>				
1 Less than 5,001 baht	3.04	.63	5.590	.061
2 5,001 – 10,000 baht	3.41	.68		
3 10,001 – 15,000 baht	2.57	.99		
4 15,001 – 20,000 baht	2.90	.00		
5 20,001 – 25,000 baht	-	-		
6 More than 25,000 baht	-	-		
<b>Administrative position in community</b>				
1 Community leader	3.77	.51	1.623	.187
2 Community committee	3.37	.62		
3 General people	3.20	.70		
4 Others	3.53	1.08		

**Table 5:** The comparison of participation levels for the groups with more than two variables (Continuous)

Test variables	Mean	S.D.	F	Sig.
<b>Information receiving in the student project</b>				
<b>1. Source of information</b>				
1.1 Printing medias such as local newspaper, journal	3.51	.28	.513	.600
1.2 Audiovisual medias such as community radio	3.35	.63		
1.3 Personal medias such as community health volunteer	3.21	.72		
<b>2. Frequency of information receiving</b>				
2.1 Less than 2 times / week	2.79	.54	3.969	.052
2.2 2-3 times / week	3.30	.74		
2.3 More than 3 times / week	3.21	.47		

#### 4. Conclusion

The following research results were summarized the objectives of study.

1. The overall public participation in the pharmaceutical Development Project in Community was at a high level and for each participation level among 5 different components were also high levels.
2. By comparison with the participation levels via several kinds of personal factors such as gender, age, education level, administrative position in the community, the periods of living time in the community, and the project information obtaining. It can be seen that the samples' participation was not significantly different with those factors.
3. The suggestions from this students' project were that people required an increase of a health promotion project by cooperation with local organizations. Some people suggested that students' project should be more promoted widely to people in community and be set an appropriate time with local people's life style.

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*The Internal Quality Assurance System and Formative Evaluation of Thai Teacher TV Project*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

The objectives of these studies were to describe the internal quality assurance system and synthesize for self assessment report (SAR) of Thai teacher TV project and to analyze the satisfaction of the project audiences in past two years . The subject from 5 documents (SAR) and 1,370 samples from the project target groups, the collecting data from questionnaire . The research found that the satisfaction in general were at good levels. The most satisfaction is a worthiness of watching , but the lowest satisfaction is channel to approach. Age of target groups has a negative relation with satisfaction in channel to approach. Age of the target group has a positive relation with satisfaction in the content of presentation. The strength of this project was an effective website. The product of this project was an important source for teacher and other educational staff, many channels to approach, and the project has a good internal quality assurance system for quality control. Finally, the main suggestion for proceeding project were emphasis in website approach . Free TV should be fine suitable time for target groups and activity of this project increate an encourage for more satisfaction .

**Keywords:** internal quality assurance, self assessment reports , Thai teacher TV project

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## **Introduction**

Thai teacher TV project is the important project of Thai education. The aim for teacher training and developing, to encourage a development vocation teacher continuously. There are teacher vocation improving high class vocation actively by high technology in high quality television programs. The production concern with the instruction includes teaching technique of teacher by the best practice and to improve or change teacher by high quality program television. This project can spread variously to target group and throughout teachers.

Thai Teacher TV project has managed for over 2 years. We used an internal quality assurance to guarantee the quality. We did project assessments continuously and self assessment reports are 5 reports for more information. Next, we synthesized a self assessment report to the overall image to show the development of the project from tangible and continuous assessment. This research is important steps to get information for project development. The result of this project had many advantages for project executive and project inventor for the next steps.

## **Materials and Methods**

This research used self assessment report (SAR) of project 1-5 (April 2010 to September 2011) and the audiences of teacher TV project in the Education International Conference EDUCA 2011, the amount was 30,329 audience members. Data was collected by implementing a questionnaire, the amount was 1,370 samples. The data was analyzed by frequency distribution, percentage, mean( $M$ ) and standard deviation (SD). Then, we compared the mean of teachers' satisfaction by independent t-test, analysis of variance (One-way ANOVA), Pearson's product moment correlation and content analysis.

## **Results of the studies**

### **1. Internal Quality Assurance System (IQA)**

#### **1.1. system and mechanical internal quality assurance of teacher TV project**

The system and mechanical internal quality assurance of teacher TV project composed with quality control, quality audit, quality assessment such as:

#### **system of internal quality assurance**

**Quality control** Consist of master plan, operating plan in project level, and the action plan in function level.

**Quality audit** Consist of actively checking by subcommittee to checks each of the activities appointed by project director.

**Quality assessment** Are the assesses procedure follows by IQA plan by assesses subcommittee , continuously 4 times per year.

### **mechanical of internal quality assurance**

The process of internal quality assurance mechanical composted of the following :

IQA assessor subcommittee appointed 4 assessor per time by project director for internal assessment , this procedure 4 time per year, each of group assessors consist of 1 representative from the faction of IQA project , and 3 experts from outside.

IQA auditor subcommittee appointed 1 auditor by project director for auditing , this procedure occurred 4 times per year and to coordinate quality assessment within of the project.

#### **1.2. An evaluation of internal quality assurance of teacher TV project**

An evaluation of internal quality assurance of teacher TV project was processed by IQA assessor subcommittee appointed 4 assessors per time by project director for internal assessment . This procedure occurred 4 times per year their role is as follows :

- 1) set a policy of internal quality assurance
- 2) teacher TV projects fix the trend of internal quality assurance process
- 3) teacher TV projects fix the system to audit and assess the IQA sub organizing.
- 4) to develop internal quality assurance for teacher TV projects.
- 5) to continue assessing internal quality assurance for teacher TV projects.

The IQA project committee processing an internal quality assurance for teacher TV projects coverage correctness , and lead the assessment to improve the system for modernization , the effectiveness , long lasting continuity by trends to assessed as follows:

- 1) standard of production
- 2) standard of expanding
- 3) standard of promoting
- 4) standard of public activity relations and participate
- 5) standard of IQA
- 6) standard of risk management system
- 7) standard of project impact

### **1.3 The internal quality assurance for teacher TV projects(IQA)**

The auditor and assessor committee of project was an important mechanism for internal quality assurance (IQA) for teacher TV projects system, that was appointed by director. Roles of the project auditor and assessor were internal quality assessment checked each part of the project by themselves.

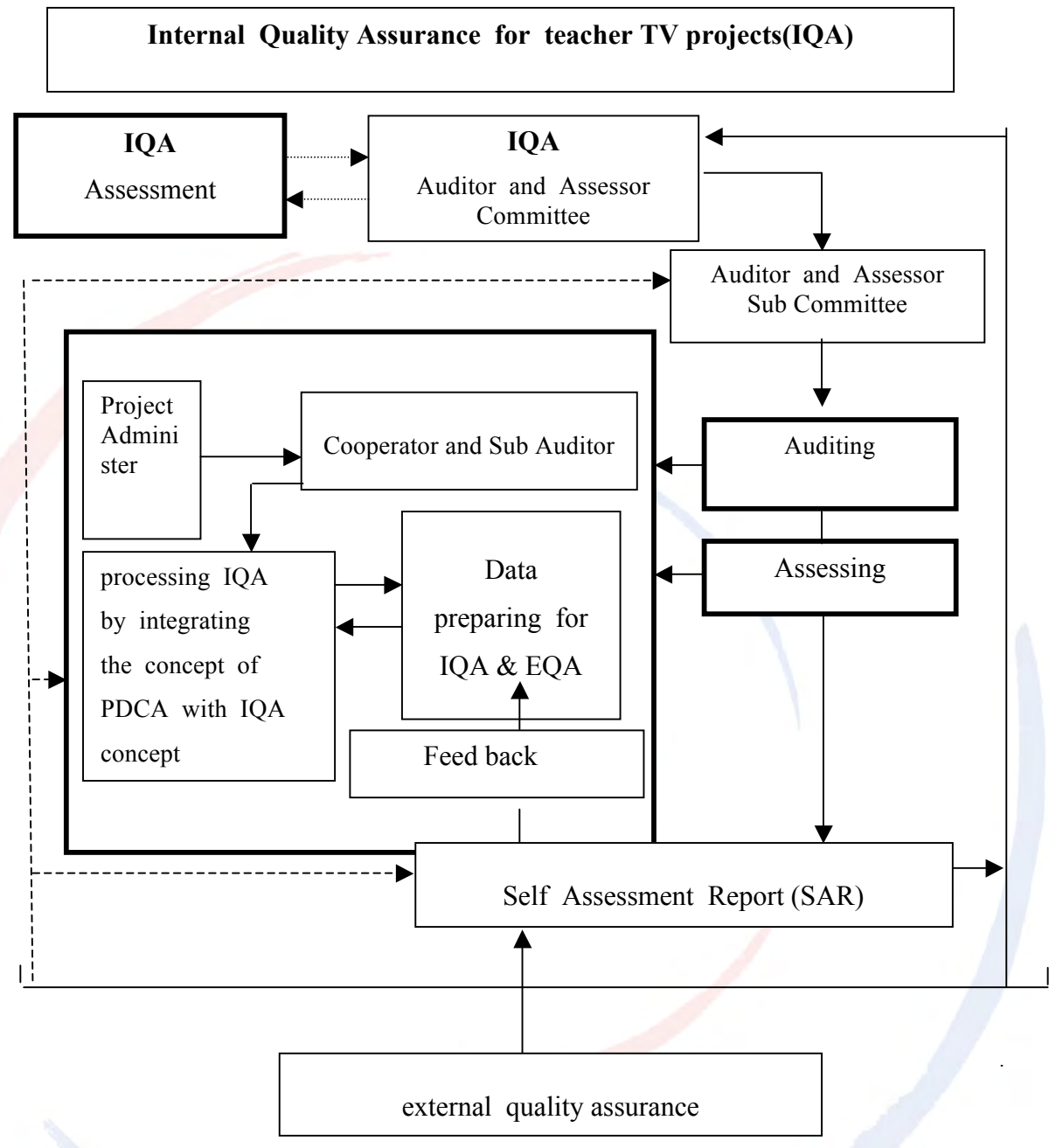
### **1.4 The internal quality assurance for teacher TV projects auditing**

The auditor and assessor committee of project was the IQA auditing. The objective of these were:

- 1) for listen to operating of IQA
- 2) for suggestion and advise, follow operating progress of IQA
- 3) for prepare the readiness of the project for external quality assurance (EQA).

### **1.5 The internal quality assurance for the part of teacher TV projects**

The internal quality assurance for the part of teacher TV projects was processed 4 times per year. So, part of the project on processing IQA by integrating the concept of PDCA with IQA concept has consisted of quality control, quality audit, quality assessment and quality improvement.



Internal Quality Assurance for Thai Teacher TV Projects(IQA)

## 2. Results of formative evaluation

**Table 1** A comparison of teachers' satisfaction for teacher TV project for two years in different teachers' education background by one-way ANOVA

variable name	source of variance	SS	df	MS	F	Sig
Satisfaction of approach channel	Between Groups	3.160	3	1.053	1.879	.131
	Within Groups	765.093	1365	.561		
	Total	768.252	1368			
List of the presentations	Between Groups	6.246	3	2.082	6.396***	.000
	Within Groups	444.650	1366	.326		
	Total	450.896	1369			
Worthiness of watching	Between Groups	4.839	3	1.613	4.362**	.005
	Within Groups	505.172	1366	.370		
	Total	510.012	1369			
Activity of Teacher TV Network	Between Groups	8.607	3	2.869	6.165***	.000
	Within Groups	635.186	1365	.465		
	Total	643.793	1368			
Impact by this project	Between Groups	6.068	3	2.023	3.576*	.014
	Within Groups	772.192	1365	.566		
	Total	778.261	1368			
totally satisfaction	Between Groups	4.919	3	1.640	5.976***	.000
	Within Groups	374.786	1366	.274		
	Total	379.705	1369			

\*  $P < .05$  , \*\*  $P < .01$  , \*\*\*  $P < .001$

**Table 2** Mean (*M*) and standard deviation(*SD*) of Satisfaction of approach channel follow with part of satisfaction and total

part of satisfaction	Statement	<i>M</i>	<i>SD</i>	Satisfaction
1	Satisfaction of approach channel	3.6177	.74939	Good
2	List of the presentations	4.0055	.57390	Good
3	Worthiness of watching	4.0975	.61036	Good
4	Activity of Teacher TV Network	4.0774	.68601	Good
5	Impact by this project	4.0368	.75426	Good
total satisfaction		3.9518	.52665	Good

The satisfaction for the content of presentations from Teacher TV Project totally is good levels ( $M = 3.95$ ,  $S.D. = 0.53$ ), by the worthiness of watching was the highest satisfaction, ( $M = 4.10$ ,  $S.D. = 0.61$ ), but by approach channel is the lowest ( $M = 3.62$ ,  $S.D. = 0.75$ ).

A comparison of presentation content of the audience differently by education in totally finding that, the satisfaction of master's degree higher than bachelor's degree and lower the bachelor's degree (.05 significance level). The list of the presentations finding that, person have the qualification lowers the bachelor's degree, there is the a little satisfaction more than bachelor's degree, master's degree, doctorate, and master's degree were higher than the bachelor's degree(.05 significance level). The activity of Teacher TV Network lowers the bachelor's degree, there is a lower satisfaction. The bachelor's degree, master's degree was higher than the bachelor's degree (.05 significance level). The worthiness of watching, the satisfaction of the lowers bachelor's degree is the a little satisfaction more, bachelor's degree, master's degree, and master's degree more satisfaction than bachelor's degree(.05 significance level) .05. The impact by this project, the satisfaction of lowers bachelor's degree, and the bachelor's degree are the little satisfaction more than master's degree(.05 significance level) .05. The status differently for impact by this project, the satisfaction of the executive higher than undergraduate, teacher, and a parent(.05 significance level).

The coefficient is related of the satisfaction with, age finding that, age of the target group has the relation in approach channel in the minus (.05 significance level), and finding that, age of the target group has the positive relation with satisfaction on the presentation list (.05 significance level).

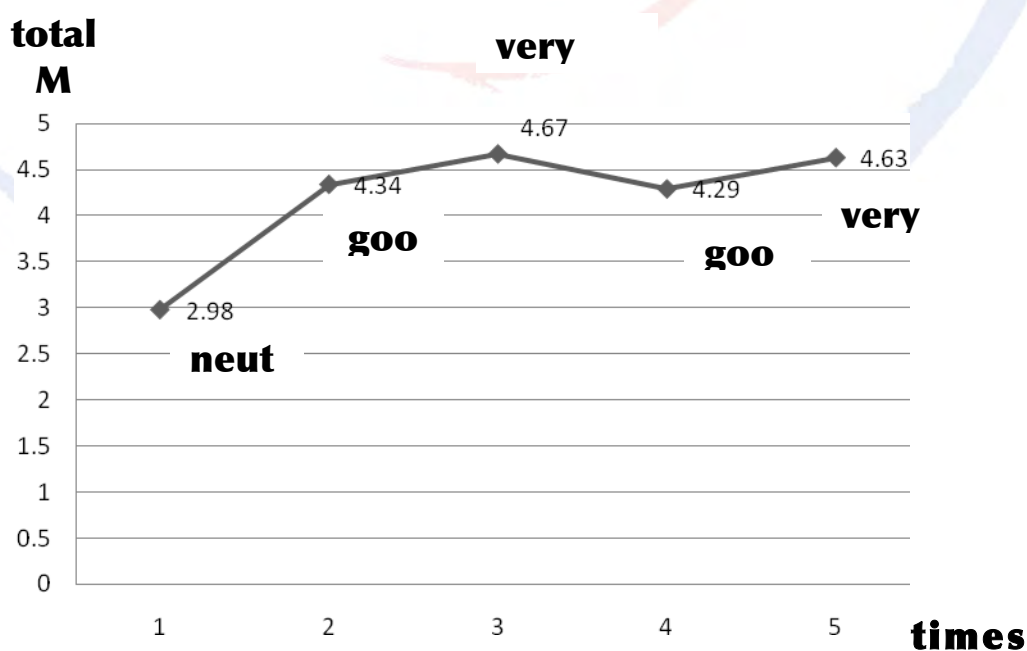
The concluding of internal quality assessment of Teacher TV project the past 2 year by Self Assessment Report(SAR) finding that , the proceeding of Teacher TV project , it has continue developed , in the only first time was so fair level , after that the result be between good to excellent in finally of past two years.

The strength of the project is the effective website , the product of the project is an important knowledge source for a teacher and education staffs , there is the various presents content , the project systematically of internal quality assurance was continual, the project has many of readiness by input of project , there is administrative project development is in high-level.

The weakness of this project in Self Assessment Report , the summarize the weakness of the project in the following , the satisfaction of the project that still doesn't arrive at excellent level , administration risk system of the project lacks the continuity in the activity develops , the lower training to the staff in the project , and the satisfaction of a member in attending activity of the Teacher TV project still not high satisfaction as expected , the data feed back a few development and still don't become visible , and still not continual as expected.

Diagram 1

A development of self assessment result  
of teacher TV project for two years



## Discussion

The total satisfaction was good. The worthiness of watching was the highest satisfaction, but the approach channel is the lowest because the presentation in project was worthwhile to cause the idea or trend in the routine work for them, but however still get into trouble the lead presents by free TV which majority likes and can appreciate easy but the presents while inappropriate suit is the cause of the lowest approach channel.

Every total satisfaction cause who have higher educate qualification will more satisfaction than other, particularly the master's degree in education has higher satisfaction than other because more Thai teachers get master's degree because of level master's degree education has higher possibility master's degree can synthetic and analysis well. Teacher TV project effect was good for audience should must have advanced stage skill in synthetic and analysis about something for integrating or applying. Then, the project made many advantages for teacher and teachers' satisfaction.

In different status of audiences, the impact of this project found that the satisfaction of the executive higher than undergraduate teacher and parents because the executive is an advantage from the project most because of the list of Teacher TV project emphasizes to develops a teacher throughout both of substance that covers every substance group and limitation development teacher reduction and they can do all of provincial time throughout no limited by local. This project can develop teachers. The executive can go to one level. Moreover, the executive has still the trend or the substance or the way from the list in the project can develop teachers. The results show that master's degree qualification has more satisfaction teacher TV project than other because of the executive has important property assembles a position must master's degree everybody qualification before reaches a position that the official has noted for the confidence system to administrates the education and a parents who use education of the school service that who come to the executive of master's degree at least.

The coefficient is related of the satisfaction with age finding that age of target group has relation in approach channel. In the minus show that old age are lower satisfied in approach channel than the young age and the young age more satisfied than older because of old people will more like from free the TV. They do not like high technology such as, a television changes the artificial satellite or from the Internet but free TV cannot finding because of don't wish the profit. Then the time for the presentation inappropriate to suit as expected, such as late at night or present time everybody can not open can

watch it so satisfaction is low but the lower old age higher easiness and convenient in using technology assemble with the project has the completeness network , Internet ,and so convenient in reaching or download can keep to study when they needs. So, the younger get higher satisfaction than the another.

The result show that age of the target group positive relation with satisfaction on the presentation list show than the old age higher satisfied the present than other and in younger will lower satisfied because a younger audience tends that the qualification is uneducated more and lack analysis or synthetic skill and without expertise applicability hoping will apply immediately the substance that correspond the younger requirement make to have the lower satisfaction for the older are higher correspond education and advanced stage level ,so they high satisfied because of this project has already can induce applied or analysis and synthetic more than other so it higher satisfaction than other , correspond with the result of the research above.

### **Suggestion**

1. The revelation spreads the project should encourage appreciate with internet or website too much because this way can accept everywhere and all time.
2. The public television should fine the time that the suitability to should for a teacher that they can reach to see at a house or their residence .
3. The project should develop an administration risk system of the project about passing on knowledge understanding and builds good attitude of the project continuity in the activity develops the officer by the training. The seminar to gives the knowledge to the staff within the project.
4. The project should to encourage the audience who attend Teacher TV network for the higher satisfaction more and more .

### **Policy Suggestion**

1. After , there is completed innovation by first already, an institute should manage the next by where is responsible affiliated with education foundation organization.
2. Teacher education foundation developments should fix to the policy , there is the official letter from education foundation or local education to go to still , secondary education , and due to the school .

3. The public information should show in two ways. One is follow by government service system. Another one is the privacy advertising.
4. The project should join with the institute produces an undergraduate , Science of Education student , education science , and government officer institute emphasizes undergraduate development , teacher student , have applying has from the project.
5. The project should supposed affecting with the human developing in primary education, by might apply it to claim as same as the part of staff training and can apply to the property of a teacher who has training.
6. The project should bring to the part of school quality assurance for the development of teacher .

### **Acknowledgements**

Grateful acknowledgement is given to department of research and applied psychology, faculty of education , Burapha University.

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*English Language Teaching Textbooks in Iran: A Critical Analysis from Cultural Perspective*

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## Acknowledgement

The authors would like to acknowledge the financial support of the University of Tehran for this research under grant number 27320/1/1.

## Introduction

Expanding and the development of the English language has been increased dramatically while number of those who speak English as their mother tongue is far below who use it as a foreign or second language. Experts like Crystal (2004) believe that the English language is not belonged to English speaking countries anymore. As Kachru (1997) suggests, the educational programmes must enjoy Inner Circles as well as Outer and Expanding Circles. For the same reason, according to Alptekin (1984), teaching culture must initiate from familiar to unfamiliar and not the other way around. Moreover, in teaching English as an international language, it is very important to teach international culture or the world culture instead of teaching culture of some particular countries. Latest experiments have shown that increasing the intercultural competence is one of the main skills in learning a language.

This article is a report on a research that critically analysed one of the best sellers of English Language Teaching books in Iran called Top Notch series which is being employed by a good many institutes in Iran, according to cultural perspective based on latest research. It has to be stated that the study was carried out by investigating from two angles: Behavioural Aspect (which divides target culture into positive, neutral and negative) and Frequency (which divides target culture into high, middle and less). It is recommended then that the cultural matters which are within the negative aspect and less frequent should not be included within textbooks or they should be taught cautiously or figuratively.

## Culture

To date culture has been viewed from different vantage points, but the enigmatic nature of culture has remained obscure. There is virtually no general consensus over the definition of culture. According to some references, there are over 164 definitions of culture. Moreover, there is a host of studies on culture, but these potpourris of studies the nature of culture is disappearing. Since there is no consensus over it, its characteristics and impacts have remained vague too.

To date, it might be argued that no one can define culture in a way that some criticisms are not levelled at. To Chastain (1988) culture means different things to different walks of people. She differentiates small c culture from big C culture. The former refers to the culture the students of language are dealing with and try to grasp while; the latter refers to major effect of it.

In what follows, a few definitions of culture are listed.

Culture can be used to refer to the literature, arts, history and similar concepts of a certain people (Hinkle, 2001).

Rivers (1981) in his book preferred to consider culture an umbrella concept which covers all aspects of life in a society or community.

Culture is a distinctly human means of adapting to circumstances and transmitting this coping skill and knowledge to subsequent generations. Culture gives people a sense of who they are, of belonging, of how they should behave, and of what they should be doing. Culture impacts

behaviour, morale, and productivity at work, and includes values and patterns that influence company attitudes and actions. (Harris, Moran and Moran 2004, p. 4)

Allmeh Jafari who was one of the greatest Islamic scholars presented one of the most comprehensive definitions of culture. According to him (2000),

Culture consists of a necessary and suitable quality or style for those kinds of mundane and spiritual human activities based on right thinking and feeling in a logical evolving life. (p. 10)

He (2000) further argues culture can be classified into four major groups:

The first one, *remaining culture*, refers to justification and manipulation of life behaviour and manner with a number of fixed racial and psychological rules and customs. This kind of culture tries to benefit from all changes or to remove them. It also tries to make stable its own ideas and activities through the environmental forces and or through the psychological inability of the society members.

The second one, *liquid and colourless culture*, refers to justifications and colouring of ideas without basing on any well-established grounds. Of course, in those societies with long history such a culture seldom happens.

The third one, *pursuant culture*, refers to activities and ideas which describe the real nature of culture are in themselves important, and this kind of culture was prominent during 18<sup>th</sup> and 19<sup>th</sup> centuries.

The last one, *pioneer culture*, refers to those activities and ideas which are resistant to transient social and environmental conditions. The reason lies in the fact that the ideas of this culture stem from the frequent realities of nature and dimensions of noble humans. Its aim consists of relative goals which motivate humans to go through the ultimate purpose of life.

It goes without saying that culture has an important role on thought and language. Fotos (2001) suggests that there are four major views concerning the relation between thought and language and thought. The first one is that of Sapir-Whorf suggesting that “both thought and language are determined by culture (p. 269)”. This view is known as linguistic determinism. Although the strong version of this view is not popular, the weak version, language relativity, has an important role in intercultural communication. The second one, Piaget’s view, sheds light on the fact that cognitive development in a child occurs in a predetermined way. Moreover, it states that cognitive development precedes language. The third one, Chomsky’s view, states that language and cognition are separate. The last one, Vygotsky’s view, states that from scratch, thought and language are separate but become interdependent as people go through communication and interaction.

The above classifications show the importance of culture. As it was mentioned in the first view, culture determines thought and language.

### **Role of Culture in ESL/EFL**

Culture has a significant role in language learning from three perspectives: *sociolinguistic theory*, *schema learning theory* and *cultivation theory*. According to Swain and Canale (1980), communicative competence comprises grammatical competence, discourse competence, strategic competence and sociolinguistic competence. Sociolinguistic competence stresses the appropriate use of language in specific cultural contexts. Likewise,

schema learning theory highlights the appropriate culture schema as an essential factor in language learning without which learning will be incomplete (Tseng 2002). Cultivation theory focuses on the effect of culture on changes in individual perception which is of utmost importance in expanding an individual's perspective of the world, and according to this theory, culture is crucial in language learning for at least two reasons: First, achieving perspective consciousness and Second, cross-cultural awareness (Tseng 2002).

As Piller (2011) puts:

Culture is not something that exists outside of and precedes intercultural communication. Instead, intercultural communication is one domain where 'culture' as concerned with the specific – and different – ways of life of different national and ethnic group is constructed.

Culture is an ideological construct called into play by social actors to produce and reproduce social categories and boundaries, and it must be the central research aim of a critical approach to intercultural communication to understand the reasons, forms and consequences of calling cultural difference into play. (p. 16)

Guest (2002) argues that culture should be taught indirectly while emphasising pragmatic and linguistic universals. Alptekin & Alptekin (1984) claim that there should be a balance between the target culture and students' native culture. According to Alptekin (1993), teaching culture in EFL books should move from familiar to unfamiliar and in this case unfamiliar could even be the international culture and not necessarily American or British culture.

### **Caveats**

As already mentioned, culture is a generic concept but Atkinson (1999) believes that this overarching concept has been reduced to terms such as *difference*, *identity*, or some other notions of that ilk. In a similar vein, Tseng (2002) states that culture is consigned to oblivion while deserving to be one the highlighted elements in language.

### **Statement of the Problem**

Nowadays, culture can be considered as the fifth skill in teaching a language. Many of students from different country try to swallow it. They are not aware that this food can be poisonous. They think it is tantamount to other skill and has to be committed to memory by a hook or a crook. In this humdrum of learning, books play an important role.

### **Significance of the Project**

Investigating the fifth skill in second language learning, the researchers try to examine Top Notch series from a cultural perspective. That is to say this project is meant to uncover the covering of the culture introduced in English as a Foreign Language (EFL) / English as a Second Language (ESL) books. Furthermore, it is an attempt to introduce a new paradigm based on which culture and its ethical effect could be measured.

## Research Design & Methodology

This is a qualitative based project which is complemented by quantitative data analyses. Put another way, to strengthen the findings and to mitigate the subjectivity of the study, quantitative data analyses have been employed.

The textbooks that were considered for the purpose of this study is called Top Notch and have been developed by Pearson Longman in 6 levels mostly for EFL learners, composed of Top Notch Fundamentals, Top Notch 1, Top Notch 2 and Top Notch 3. There are other books for the advanced learners called Summit 1 and 2. Like any other EFL books, each level includes a student book, a workbook, an audio CD and a Video DVD. So, the whole series of Top Notch have been employed in this project. Moreover, this series has been investigated from two angles, one ethical and the other cultural, in one new perspective.

The ethical view of the series is a qualitative, whereas the cultural view of the series is both qualitative and quantitative.

## Data Analysis and Discussion

The researchers employed an inductive, bottom up, approach for data collection and analysis. Thus, the entire series of Top Notch, including the videos, course books, and workbooks, were examined. Then all the topics and ideas which were particularly pertinent whether directly or indirectly to culture and ethics were pinpointed and consequently six pronounced themes were abstracted. Finally, the frequency of the six pronounced themes were obtained and qualitatively studied. These six themes seem to threaten Asian ethics and deviate from both geocultural approach to ethics and four basic principles of biomedical ethics.

**Violence** is a trend in these series which obviously promotes violence in societies. Violence and superstition could be considered somehow relative from among these six themes in relation to Asian ethics. Some countries may not consider violence as a threat since martial arts were born in these countries and what is regarded in Iran as violence may be practised in those countries as well.

As with violence, **superstition** is somewhat relative from among different countries in Asia. It goes without saying that many cultures are abundant with legends and superstitions; whereas in Islamic countries superstitions are regarded with circumspection. Strictly speaking, Muslims try to differentiate between superstitions and real premises of religions and thoughts. This differentiation reaches its zenith when it comes to religion. As far as there is a clear-cut borderline between religion and superstition, nothing goes wrong, but once superstition tries to masquerade itself as part of religion it becomes Muslims' anathema, a sinister threat, and has to be uprooted.

The next theme, **modesty**, is a highly respectable value in oriental cultures which does not devalue over time. This definition runs contrary to the alleged negative concept of modesty, portrayed in Top Notch series, which is viewed as an old-fashioned notion and thus needing to be changed by immodesty. This theme has a strong tie with modernity in this study.

**Modernity** is depicted as a strong willingness towards the blind obedience of new-fangled events and thoughts which are mundane and valueless, if not anti-ethical, by nature. Apparently, modesty could be considered under the wide concept of modernity, but what differentiates modesty from modernity lies in its root in religion.

**Religion**, here, does not lend itself to any specific religion; rather it is generic and seeks to commonalities between religions. Thus, any notions or ideas trying to either capture religion or stand against it or even give rise to anti-religion are included in this theme. Broadly speaking, modesty could be part of religion, but the point is the latter refers to some general and holistic concepts, whereas the former seems to be rather a peripheral concept, yet widespread and frequent.

The last theme which is **individualised ethics**, unlike the others, does not nominally stand against the divine concept of ethics rather it tries to devalue that under the guise of ethics by making some ungrounded new-fangled notions. Strictly speaking, this very last theme views ethics from alleged modern vantage points, psychological or psychoanalytical, for example.

The table below shows the frequency of six pronounced themes of ethics existing in the series.

Ethical trends

Themes	Violence	Superstition	Modesty	Individualised Ethics	Religion	Modernity
Frequency	3	3	4	5	4	6

In the sitcoms of Top notch, at pre-intermediate and intermediate levels, violence has been introduced as a controversial issue. The interviewer asked the interviewees about their ideas regarding censorship of the movies, books and of that type. Since the interviewees had different opinions towards the issue of censorship it seems to be something quite debatable. The same goes with Top notch book, 2A, which reiterates the same idea that violent movies are debatable “one popular filmmaker asks why violent images on the screen are a problem since we live in such a violent world (p. 22)”. Of course in the Workbook at level 2A, some statistics about violence are given which alleviates the aforementioned points to a small extent.

# Can Violent Movies Be Dangerous?

**B**efore the 1960s, most movies did not show much graphic violence. When fighting or shooting occurred on the screen, it was clean: Bang! You're dead! The victim fell to the ground and died, perhaps after speaking a few final words. The viewer never saw blood or suffering. But in the late '60s, filmmakers Arthur Penn and Sam Peckinpah began making movies with more graphic violence, such as *Bonnie and Clyde* and *The Wild Bunch*. They believed that if audiences could see how truly horrible real violence

was, people would be less violent in their own lives.

Today, special effects technology has made it possible to create very realistic images of bloodshed and violence. Steven Prince, author of *Savage Cinema: Sam Peckinpah and the Rise of Ultraviolent Movies*, describes the difference between early movies and the movies of today "...filmmakers can create any image that they can dream up." So, Prince believes, because of the technology, movies today have become more and more violent and bloody.

Some people are worried that viewing a lot of violence in movies and video games can be dangerous. They feel that it can make violence seem normal and can cause people to imitate the violent behavior, to do the same thing themselves. Other people disagree. They believe that showing violence is honest and can even be helpful.

One popular filmmaker asks why violent images on the screen

are a problem since we live in such a violent world. "Just open any newspaper," he says. "Any newspaper is much more violent. And those are true stories about what happens in real life. Or open any history book and read about what happens when a people are conquered."

"There's so much violence right now," says a well-known European actress. "And maybe this is the way that filmmakers speak against violence: by making violent movies."



The Wild Bunch



Bonnie & Clyde

Regarding superstition, three major pronounced examples can be found in the series. First, astrology has been introduced controversial, at level 2B in the Workbook. Birth order relationships predicting different characters is another point that can be mentioned here, which stresses the role of superstition in one way or another. The Chinese zodiac has been introduced, on page 62 Summit1, and students are asked to find their animal signs of their birthdays according to the Chinese zodiac.

## UNIT 6

# Animals

**A Topic Preview.** Find your birth year on the Chinese Zodiac. What's your animal sign?

### UNIT GOALS

- 1 Exchange opinions about the treatment of animals
- 2 Discuss the benefits of certain pets
- 3 Compare animal characters
- 4 Debate the value of animal conservation

**RABBIT**

1939 1951 1963  
1975 1987 1999

Intelligent, kind, and helpful. You are also traditional and somewhat conservative. You tend to tell people what's on your mind.

**TIGER**

1938 1950 1962  
1974 1986 1998

Self-confident, independent, and emotional. Sometimes you tend to be inconsiderate and selfish.

**OX**

1937 1949 1961  
1973 1985 1997

Hardworking, serious, and responsible. You can sometimes be a workaholic. It's difficult to get you to change your opinions and beliefs, and you get angry easily.

**DRAGON**

1940 1952 1964  
1976 1988 2000

Fun loving, artistic, and truthful. You don't always feel confident in yourself or your abilities. You are also a little eccentric at times.

**RAT**

1932 1944 1956  
1972 1984 1996

Generous, honest, and imaginative. You are usually careful, and sometimes you are a perfectionist.

**BOAR**

1947 1959 1971  
1983 1995 2007

Generally quiet and honest. You work hard toward your goals. You don't have many friends, but you are very considerate to the friends you have.

**SNAKE**

1941 1953 1965  
1977 1989 2001

Attractive and very calm. You are able to make good decisions and give good advice. Sometimes you can be self-centered.

**DOG**

1946 1958 1970  
1982 1994 2006

Honest, caring, and modest. You are always there for your friends. You may at times seem cold and unfriendly to people who don't know you.

**HORSE**

1942 1954 1966  
1978 1990 2002

Popular, outgoing, and cheerful. You are a real people person. Sometimes you are too talkative.

**GOAT**

1943 1955 1967  
1979 1991 2003

Passionate, very artistic, and a bit shy. You are good at understanding other people's problems. Sometimes you are too willing to believe what other people say.

**MONKEY**

1944 1956 1968  
1980 1992 2004

Clever and likable. You have new and interesting ideas, and you learn very quickly. Sometimes you can also be a little egotistical.

**ROOSTER**

1945 1957 1969  
1981 1993 2005

Attractive and self-confident. You want to be very successful. Sometimes you say things just to make people look up to you.

Source: [silverdragonstudio.com](http://silverdragonstudio.com)

**B Discussion.**

1. How well do the adjectives for your sign describe your personality? How are you different from the description?
2. Do you think the descriptions match the animals in any way? Why or why not?

Not only has Modesty been introduced controversially in this series but also old-fashioned and to some extent backward. At level 2B, a father who thinks modesty is necessary for women, has been labelled as old-fashioned. In a similar vein, at the same level on page 116 there is a radical viewpoint labelling the following commonsensical belief as sexist: “a lot of people think it’s ok for men to wear shorts, but not for women”. Oddly enough, the word *sexist* is tantamount to a person who thinks men and women are not the same in terms of

wearing clothes. For instance, a man believing shorts are appropriate for men and not for women in public is labelled as a sexist.

LESSON

3

## Express Personal Values

**A LISTENING COMPREHENSION.** Listen to the conversations. Check true (T) or false (F).

	T	F	
1.	<input type="checkbox"/>	<input type="checkbox"/>	a. Beth thinks it's OK for Luke to wear an earring to the office. b. Luke agrees with Beth.
2.	<input type="checkbox"/>	<input type="checkbox"/>	a. Celia's husband has a tattoo. b. Celia's husband likes Celia's tattoo.
3.	<input type="checkbox"/>	<input type="checkbox"/>	a. His daughter married a lawyer. b. He wants his daughter to stay home and have children.
4.	<input type="checkbox"/>	<input type="checkbox"/>	a. Kate's dad likes the way Kate is dressed. b. Kate's dad thinks girls don't have to be modest.




**B** Read the following quotations from the conversations. Then choose the correct definition for the underlined word or phrase. Listen again if necessary.

- "But lots of people are old-fashioned, and they don't think men should wear earrings."  
a. have ideas from the past  
b. don't like traditions
- "What a double standard!"  
a. the same rules for all people  
b. different rules for different people
- "That's a little sexist, if you ask me!"  
a. the idea that men and women are not equal  
b. the idea that men and women are equal
- "But modesty is very important for girls."  
a. wearing clothes that cover their bodies  
b. wearing clothes that show their bodies

**C PAIR WORK.** Think of an example for each word or phrase. Write your ideas in the chart. Share your ideas with a partner.

old-fashioned	
a double standard	
sexist	
modesty	

☞ A lot of people think it's OK for men to wear shorts, but not for women. ☞

Finally, at the same level, on page 117, there is a statement based on which there are two standpoints on modernity, namely being modern and old-fashioned. In fact, the word *modest* has been accompanied by old-fashioned, double standard, and sexist.

**TOP NOTCH INTERACTION • What do YOU think?**

**STEP 1. Fill out the Values Self-Test. Then discuss with your partner.**

## VALUES SELF-TEST

**Check the boxes that best describe your values. Include a specific example.**

☐ I'm modern in my attitudes about modesty.  
☐ I'm old-fashioned in my attitudes about modesty.

**Explain** \_\_\_\_\_

☐ I think tattoos and body piercing are OK for men.  
☐ I think tattoos and body piercing are OK for women.

**Explain** \_\_\_\_\_

☐ I think it's OK to have a double standard for different people.  
☐ I think the rules should be the same for everyone.

**Explain** \_\_\_\_\_


☐ Some people might say I'm sexist.  
☐ Nobody would say I'm sexist.

**Explain** \_\_\_\_\_

**STEP 2. DISCUSSION. Discuss one or more of the following questions. Give reasons and examples.**

1. Is it sometimes OK to have a double standard for men and women?
2. Can people be sexist when they talk about men, or only about women?
3. Are old-fashioned ideas usually better or worse than modern ideas?

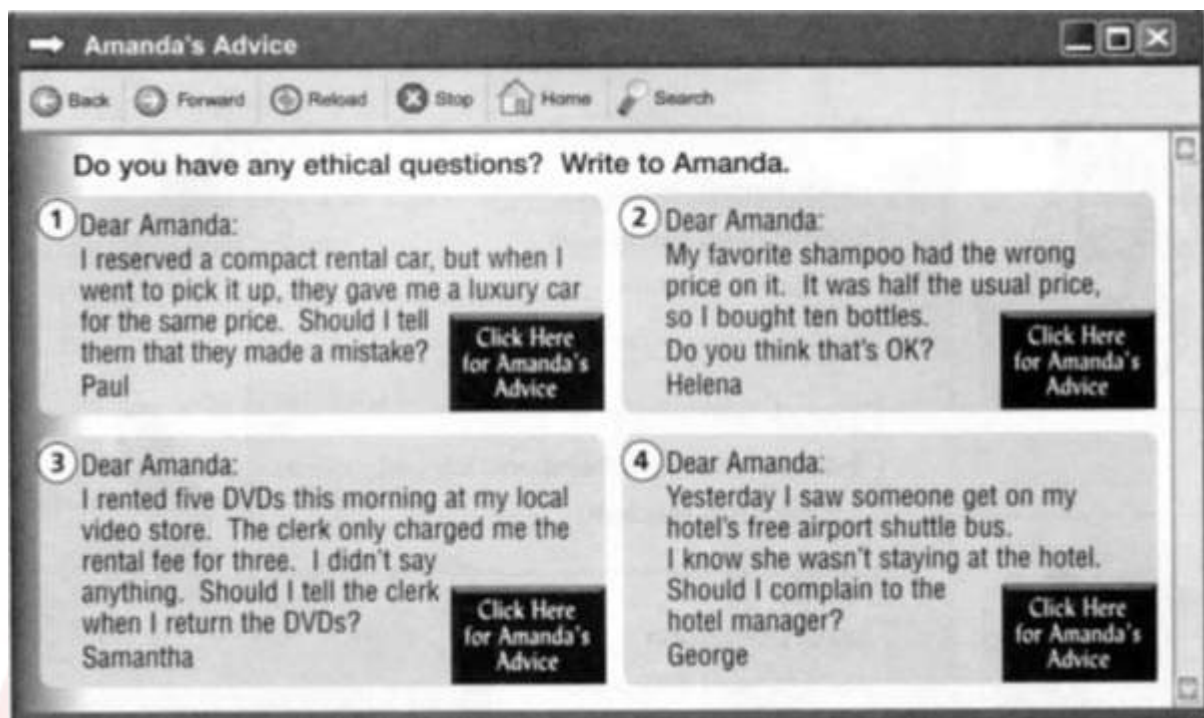
**STEP 3. WRITING. On a separate sheet of paper, write your ideas about modesty and personal appearance. How should men dress? How should women dress?**



117

Man measuring the length of woman's swimsuit in the 1920s (U.S.)

Individualised ethics is the other theme which can be the crux of ethics in the series. Telling lies and stealing are the examples introduced in Top Notch videos at Pre-intermediate level. At level 2B, in the workbook, page 85, there is a passage entitled *Ethics and Values* and there is a question which reads: “do you have any ethical questions? Write to Amanda...” which in fact regards ethics as something like psychology which can be quite different among people. Then, it is followed by five questions resting on the fact that it is plausible to steal in one way or another. For instance, a person who reserved five DVDs but was being charged only for three asks for a solution. It goes without saying that the topic tries to make ethics relative by hook or by crook.



Likewise, there is another topic, at 3A on page 11, which says whether dating customs have changed a lot or a little, and whether the change is for the better. There is little doubt that the western notion of dating has been taken for granted and accepted as the world-wide norm. Moreover, it suggests that it has considerably been changed since now almost there is no traditional marriage and the like.

**STEP 1. Have cultural features changed a little or a lot in the last fifty years?**  
Complete the survey.

<b>Culture Survey</b>	have changed a little	have changed a lot	Is the change for the better? (YES or NO)	
1. Table manners	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Musical tastes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Dating customs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Clothing customs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Rules about formal behavior	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Rules about punctuality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Forms of address	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Male / female roles in the workplace	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Male / female roles in the home	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Total YES answers: _____		

**Are you a dinosaur or a chameleon?**

How many times did you check YES in the third column?

**0-3 = Definitely a dinosaur.**  
You prefer to stick with tradition. Your motto: "If it isn't broken, don't fix it!"

**4-6 = A little of both.** You're willing to adapt to change, but not too fast. Your motto: "Easy does it!"

**7-9 = Definitely a chameleon.**  
You adapt to change easily. Your motto: "Out with the old, in with the new!"

At the same level on page 80, there is a piece of writing about comics based on which comics may be rather immoral but the conclusion, to a large extent, eerily inculcates morality to be subdued by popularity. That is to say, although some are immoral, they are good because of their popularity. Again at the same level on page 104, there is a discussion on four major problems of the current world in a global survey but once more there is no name of ethics and spirituality. Of course, the validity of the survey and the generalisability can be called into question as there is no piece of evidence regarding the validity of the survey. Fortunately, unlike the statement above, these days, lots of people are hungry for ethics.

Religion is the next theme which has a lot in common with ethics and of course has an important role in it. In the movies of Summit 2, unit seven, there is a part about Simpson animation series, in response to the critics based on the fact that in this animation, more or less, religion has been overlooked and people have been never shown in church, one of the producers says we even show God in our animation. Then there is a picture showing a huge animate to some extent vaguely as God. As a matter of fact, in this way they scoff at God. On page 56 level 3A, Ramadan has been down played as holidays around the world and accompanied with some festivals. Please kindly bear it in mind that we're talking about an Islamic country called Iran where it's a very religious country and everything is considered under the umbrella of religion. Furthermore, in 3A, page 104, there is a discussion regarding four major problems of the current world in a global survey but again there is no name of religion and spirituality, which has been already mentioned regarding ethics.

**C Pair Work.** Use the expressions in the vocabulary to discuss the talents of the following people.



1. Irish writer James Joyce spoke thirteen languages.



2. The work of Chilean poet Gabriela Mistral, a Nobel Prize winner, conveyed profound feelings about common human experiences.



3. Indian genius Srinivasa Ramanujan astonished people by solving complex numerical problems instantly in his head.



4. U.S. industrialist Henry Ford built an early gasoline engine and one of the first automobiles.



5. Austrian physician Sigmund Freud, the founder of psychoanalysis, showed an immense capacity for understanding human behavior and feelings.



6. U.S. sculptor Louise Nevelson's abstract arrangements of wood, metal, and other materials demonstrated her artistic vision.



7. Joseph Dunninger was an American magician famous for reading people's minds and guessing their thoughts.

Modernity is the last theme that has been put under the heading of ethics. By modernity, we chiefly underscore the trend towards a modern life with little or no celebration of ethics. Put it simply, here, the interplay between modern life and ethics is dubbed modernity. In the provided videos for the Pre-intermediate level, it has been tried to suggest that make up is appropriate for men. Moreover, it is regarded as something more or less modern and consequently better. At the same level in the videos, a so-called modern woman says to another woman now we live in the 21<sup>st</sup> century and these days women can invite men for dinner, of course by dinner she meant dating. In the Workbook of 2A, page 44, *cosmetic surgery vacation* is introduced and has been defined as: Going to another country which is cheaper than your country in terms of the cost of cosmetic surgery and returning to your country without mentioning the surgery. Therefore, your neighbours may think your changes are due to your vacation.

**14** Read the online article. Then read the statements and check true or false.

**→ Cosmetic Surgery Vacations**

Cosmetic surgery vacations are the latest trend in cosmetic surgery. These holidays can take you to foreign lands, sometimes save you money, and offer you privacy.

But be careful—all surgery is serious. Here are some of the reasons for a cosmetic surgery vacation—and some important things to keep in mind.

**PRIVACY**

Cosmetic vacations are great if you want to keep your surgery private. You don't have to tell anyone where you're going, or why. When you return home, friends and family will think you look great because you've just had a relaxing vacation.

**SAVING MONEY**

Many cosmetic surgery vacations take you to countries where costs for surgery can be relatively inexpensive. But in many places, surgery prices can be high for foreigners. So be sure to check before you go.

**QUALIFIED DOCTORS**

There are excellent surgeons throughout the world, but if you decide on a cosmetic holiday, be sure to ask a lot of questions. Here are some things to think about. Find out the qualifications of your doctor. Where did he or she study? Where has he or she worked? Ask how long he or she has been a doctor. Also, if possible, speak to past patients. Were they happy with their new appearance?

The above research is very important. After all, you will be placing your life in the surgeon's hands.

In 2B on page 117, there is a sentence stating: "I am modern in my attitude about modesty". The implication is ethics is not fixed and modernity changes everything in one way or another. In Summit1 on page 45, there is a question reading "who do you think should spend more time making themselves attractive, men or women? Why?". The point is why such a question should be raised, is there any doubt about it? or because we live in a new age everything should be different, good should be bad and bad should be good, the same goes for beauty, ugly should be beautiful and beautiful should be ugly.





**DISCUSSION BUILDER • Now evaluate ways to change one's appearance.**




**Step 1. Pair Work.** Discuss and complete the checklist.

**Ways people spend time and money to make themselves more attractive**

Which do you think are good ideas for women? How about for men? Which do you think are good for both? Check the appropriate box.

	men	women		men	women
skin lightening	<input type="checkbox"/>	<input type="checkbox"/>	contact lenses	<input type="checkbox"/>	<input type="checkbox"/>
skin tanning	<input type="checkbox"/>	<input type="checkbox"/>	false eyelashes	<input type="checkbox"/>	<input type="checkbox"/>
body piercing	<input type="checkbox"/>	<input type="checkbox"/>	makeup	<input type="checkbox"/>	<input type="checkbox"/>
tattoos	<input type="checkbox"/>	<input type="checkbox"/>	hair coloring	<input type="checkbox"/>	<input type="checkbox"/>
facials	<input type="checkbox"/>	<input type="checkbox"/>	permanents (perms)	<input type="checkbox"/>	<input type="checkbox"/>
manicures	<input type="checkbox"/>	<input type="checkbox"/>	hair transplants	<input type="checkbox"/>	<input type="checkbox"/>
nail extensions	<input type="checkbox"/>	<input type="checkbox"/>	wigs	<input type="checkbox"/>	<input type="checkbox"/>
nail polishing	<input type="checkbox"/>	<input type="checkbox"/>	hair removal	<input type="checkbox"/>	<input type="checkbox"/>
cosmetic surgery	<input type="checkbox"/>	<input type="checkbox"/>	other	<input type="checkbox"/>	<input type="checkbox"/>

**Step 2. Discussion.**

- Who do you think should spend more time making themselves attractive—men or women? Why?
- Can people do too much to try to make themselves attractive? If so, what do you think is "too much"?

Finally, in the Workbook of Summit 1 on page 34, there is a weird idea based on which "ninety per cent [of women] are afraid of being conspicuous and of what people will say. So they buy a grey suit. They should dare to buy different." It simply implies women should wear a different colour at any cost.

**9 Challenge. Read the quote from 1930s fashion designer Elsa Schiaparelli. Then answer the questions.**

**“** *Ninety percent [of women] are afraid of being conspicuous and of what people will say. So they buy a gray suit. They should dare to be different.* **”**

1. Rewrite Ms. Schiaparelli's fashion advice in your own words.

2. Do you think this is good fashion advice for people (not just women) today? Why or why not?

The above points just shed little light on the reality we are dealing with these days. What should we expect when in books scientists have been replaced by western celebrities? The students will follow whoever they see in books and unfortunately, the western celebrities being mostly actors and actresses regarding ethics are virtually infamous for good deeds and behaviour. To Alptekin (1993), teaching culture in EFL books should move from familiar to unfamiliar and in this case unfamiliar could even be the international culture and not necessarily American culture. But what we observe in this series is miles away from what it should be. This series focuses on some specific English culture like playing up the celebrities and luxury and playing down scientists and simplicity. Alptekin & Alptekin (1984) claim that we should strike a balance between the target culture and students' native culture. Put it simply, it seems that one particular culture should not be dominant in books. Unfortunately, such an idea is hardly observed in this series.

The section below shows the various analyses employed in this study. The first three tables reveal the nationalities of the people employed in the sitcoms and the visual interviews.

**The countries of the actors in to notch sitcoms**

country	America	France	Total
<b>Number of actors</b>	4	1	5

**The countries of the interviewees in to notch sitcoms**

country	America	Austria	India	Italy	Japan	Greece	Taiwan	Britain	Chile	Germany	Grenada	total
<b>frequency</b>	1345	5	4	3	10	5	6	5	4	4	2	182
<b>Number of interviewees</b>	19	1	1	1	2	1	1	1	1	1	1	30

### The countries of the guests in Top Notch sitcoms

country	Asia	Western English	Western non-English	Total
frequency	3	16	2	21
Number of visitors	1	5	1	7

The Top Notch series were also being studied on the perspective aspect of culture, which has already been adopted by Ka-Ming (2011). Every single books and videos was analysed based on this table:

Perspectives	English speaking countries	European countries	Asian countries	Latin American countries	African countries
Inspirations					
World view					
Myth					

The following table revealed the frequency of each category plus the total number at the end of the analysis.

### The frequency of each category

Perspectives	English speaking countries	European countries	Asian countries	Latin American countries	African countries	Total
Inspirations	10	3	4	0	2	19
World view	96	6	9	0	1	112
Myth	61	3	10	3	0	77
Total	167	12	23	3	3	208

As can be seen, the high frequency of the cases related to English speaking countries is quite obvious. In other words, the other four categories: European, Asian, Latin American, African countries were not addressed as equally as English speaking countries. This finding runs contrary to the alleged idea of generating cultural fluency, which has been stated by the Top Notch producers. Thus the writers unlike what have claimed have not equally represented the cultural cases of different countries in the world, even tentatively.

### Frequency results of the cultural cases in Top Notch Series

	Observed N	Expected N	Residual
<b>English speaking countries</b>	167	41.6	125.4
<b>European countries</b>	12	41.6	-29.6
<b>Asian countries</b>	23	41.6	-18.6
<b>Latin American</b>	3	41.6	-38.6
<b>African countries</b>	3	41.6	-38.6

### The Chi-square results for the cultural cases in Top Notch Series

Chi-square	497
Degree of freedom	4

As can be seen, the results (Chi-square=497, df=4,  $p < 0.01$ ) revealed a significant proportion of the cultural cases embedded in Top Notch series. In other words, these results indicated cultural bias in favour of English-speaking countries.

### Conclusion

According to Guest (2002), culture should be taught indirectly while emphasising pragmatic and linguistic universals. In the same vein, he suggests that the focus should not be on the differences as it works like a Pandora's Box. As matter of fact, EFL/ESL syllabus designers can include those ideas, customs, and ethics which are widely accepted by both occidental and oriental people. Moreover, ethics should not be consigned to oblivion. Put another word, ethics should be the cornerstone on which a book is designed rather than as desultory and peripheral ideas which are added to a book. This project suggests that culture should not be considered in isolation. Put it simply, culture and ethics are inextricable concepts, which necessitates the study of their interplay. More importantly, teaching some particular concepts directly without any consensus may cause some troubles. Instead, we can find the middle ground, and teach those concepts with high agreement around the world.

All in all, mudding the water of violence, playing up superstitions, playing down religions, compromising modesty, dubbing individualised ethics, and surging to modernity is the disease of this age, which circulates from one country to another, from one continent to another through an airplane called the book. In conclusion, this study suggests that it stands to reason to view culture from the ethical point of view as ethics provides an eagle eye to look through culture. Moreover, ethics should not be confined to just a set of new-fangled terms such as ethics in research and likewise. Ethics is the heritage of humanity if it is compromised, humanity will be forsaken.

### **Pedagogical Implications**

1. Syllabus designers can consider ethics while designing books.
2. Teachers can devote some time to teach culture and its relation to ethics.
3. The frame obtained in this project may help the syllabus designers, in that it helps them what to include and exclude from their books regarding ethics.
4. It might be an avant-garde study regarding the relation between culture and ethics in the field of TEFL.
5. It may give rise to emergence of an interdisciplinary study on the philosophy of ethics and language.

### **Suggestions for Further Research**

1. It is highly recommended that a study be carried out on a different series with the same line of thinking to confirm this project.
2. The paradigm created in this project might need to be investigated from different points of view.
3. This study needs to be carried out in different countries with different cultures to see what the commonalities are.
4. It is of paramount importance to know whether the observed culture and ethics in this series has been done on purpose or inadvertently. Put another way, do the series designers have some guidelines based on which different ethics and cultures are presented?

iafor

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*Instrumental Motivation and CET Band 4*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

The paper, inspired by Gardner and his associates' research on instrumental motivation, mainly discusses what kind of effect it will have on students' performances, with particular reference to CET Band 4 in China. CET Band 4 stands for College English Test Band 4, the certificate of which used to be essential to the awarding of bachelor's degree in China before 2006. Driven by this strong instrumental motivation, the students tend to be willing to put more efforts and time into the study of vocabulary, grammar, listening, reading etc. Then the paper analyses the negative backwash of CET and describes the features of the students motivated by it. In the year 2006, the link between the certificate of passing CET Band 4 and bachelor's degree was cut off. This consequently has influenced instrumental motivation in English learning. Students' motivation went down to a large extent. But some desirable results appeared. English teachers changed their syllabus, courses and teaching approaches, while students' English are improved in a more balanced way and they are more willing to participate in classroom activities. The most important thing is that their motivation has no significant drop after they pass the CET-4. It can be explained by their increased intrinsic motivation during the two years of English learning. The paper finally discusses what language teachers can do to enhance motivation.

Keywords: instrumental motivation, CET, validity, intrinsic motivation.

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The paper, inspired by Gardner and his associates' research on instrumental motivation (language learning for more immediate or practical goals) (Lightbown and Spada, 2006: 64), mainly discusses what kind of effect it will have on students' performances, with particular reference to CET Band 4 in China. The research made in Philippines by Gardner and Lambert in 1972 shows that instrumental motivation appears to be much powerful to the learners who have little or no interest in the target-language culture and few or no opportunities to interact with its members (from Ellis, 1994: 514), which accounts for our choosing this as the final topic. The research subject consists of some non-English majors in Nanjing University of Aeronautics and Astronautics who precisely fit the description of the above.

CET Band 4 stands for College English Test Band 4, the certificate of which used to be essential to the awarding of bachelor's degree in China before 2006. Driven by this strong instrumental motivation, the students tend to be willing to put more efforts and time into the study of vocabulary, grammar, listening, reading etc. For example, before the coming of the examination there seems to be no need to worry about the rate of attendance. And instead of being absent-minded, the students become more absorbed in the class. Therefore, approximately 90 percent of the sophomores in our university will pass the examination.

CET has been very popular in China. It does have positive effect on college English teaching, but with the development of society, the negative backwash has been reflected.

In the first place, because many companies regard CET band 4 or 6 certificates as one of the qualifications to recruit new employees, colleges and universities tend to put too much emphasis on it. They even link the certificate of passing CET band 4 to bachelor's degree. Students feel under pressure when learning English. At some colleges and universities English teachers are evaluated according to the scores their students get in CET. In such environment English teachers have to focus their teaching on test instead of communicative competence in English. They are forced to discard those texts of vivid and pure English articles but concentrate on explaining answers to those so-called model tests.

Secondly, the validity of CET is doubtful. CET is supposed to test students' communicative

language ability. But the communicative competence can hardly be reflected in CET. It has been proved by the fact that many students who have passed the exam cannot utter a complete English sentence. Also, linguistic competence includes receptive skills and productive skills. But many testing questions in CET are recognition test instead of recall test. Thus CET cannot well reflect students' productive skills. Moreover, the authenticity of testing material is an important factor of testing validity. Yet the testing material in CET is not so authentic. For example, there is no background noise in any listening material and no title in any reading material in CET. So though CET has high reliability, its validity has to be improved.

Thirdly, types of test items in CET are too limited. Multiple-choice items account for 75%-85% of the whole test. Of course, they are reliable, economic, practical and objective. Because of these advantages they are often used in large-scale exams. But they also have some unavoidable shortcomings. First of all, multiple-choice items only test receptive skills, which cannot reflect students' whole linguistic competence. For example, when doing cloze items, students needn't recall what has been stored in their mind. All they have to do is to fill four options into a blank to see which is suitable. Then multiple-choice items can make it hard to test what the designer wants to test. For example, listening comprehension is designed to test students' listening skills; yet four options give them too much information by reading. Also the backwash of multiple-choice items tends to be negative. Students neglect to develop their linguistic productive ability. They may put their textbooks aside and devote themselves to model exercises. And then it is hard to design good distractors. Sometimes two of the four options are reasonable answers to the problem. Sometimes, especially in reading comprehension, distractors can be excluded out by common sense without any information from the reading material. What's more, guessing accounts for part of the scores in multiple-choice items and it is impossible to decide how much. Theoretically the chance of guessing right is 25%. Yet after some training the percentage can be increased greatly and students get higher scores with no improvement in linguistic competence. In addition, multiple-choice items encourage cheating in exams.

Composition is another indispensable type of test items in CET. But it also has problems. The

worst one may be its low reliability. The rating criteria of composition is too global, which leads to arbitrary and subjectiveness in scoring.

To our joy, the CET organizer has recognized the existing problems and made some reforms, like introducing compound dictation and short-answer questions.

Motivated by CET, the students in our university have their features. As Krashen and Terrell state, “written input alone will not result in spoken fluency, due to the phonological factor as well as differences in spoken and written language”.(1983) So, students’ capabilities that can’t be reflected directly through the examination, like the ability to express fluently and accurately, are weak. To make things worse, the students have a tendency to attach less importance to the input not closely related to CET. For instance, they are reluctant to engage in group discussions in the class, showing no interest in any introduction about the cultural background unless the chance of its appearance in the examination is emphasized. After the examination, as Gardner and MacIntyre claimed in the study made in 1991, once any chance for receiving a reward is eliminated, learners may cease applying extra effort, which is seen as a major disadvantage of instrumental motivation (from Ellis, 1994: 514). As mentioned above, 90 percent of sophomores’ passing CET Band 4 leads to nothing but a sharp drop in their instrumental motivation, which is reflected through their attitude to English study after the examination. Many of the students begin to be absent from the class, or be unwilling to finish their assignments.

But things have changed. In the year 2006, the link between the certificate of passing CET Band 4 and bachelor’s degree was cut off. Students are not forced to take the exam. This consequently has influenced those non-English majors’ instrumental motivation in English learning. Their motivation went down to a large extent. It can be seen from many aspects. For example, students’ attendance to English class dropped, especially in classes of large size. They spent less time in memorizing new words and did less exercises of close, reading comprehension, and some other exercises which are similar to those in the CET-4. Their performance in the CET-4 also became worse, which in turn explains students’ low

motivation, if other conditions are equal.

But not all the changes are bad. Some desirable results appeared as the authority had expected. English teachers changed their syllabus, courses and teaching approaches as a response to the new policy. They added oral English course to non-English majors which was set only to English majors in the past. And they also employed the functional and task-based approaches in the class hoping that their students can say appropriate words in different situations. There were no longer mock test done or discussed in the class time. Therefore whether or not students pass the CET-4 becomes their own business and a natural reflect of their English proficiency. Even whether or not they take the exam is their own choice.

On the other hand, students' competence and performance of English are improved in a more balanced way during the two years' learning. Their productive skills ---speaking and writing skills develop together with their listening and reading skills, which makes a sharp contract to the past when they couldn't say a complete sentence even though they passed the CET-4. They are more willing to participate in classroom activities such as group discussion and role play which they had viewed as a waste of time because these activities had no direct relation to the exam.

The most important thing is that their motivation has no significant drop after they passed the CET-4, which can also be seen in their attendance to the class and how well they do their homework. It can be explained by their increased intrinsic motivation during the two years of English learning. Csikszentmihalyi and Nakamura (1989) defined the intrinsic motivation this way. When the experience of doing something generates interest and enjoyment, and the reason for performing the activity lies within the activity itself, then the motivation is likely to be intrinsic. In comparison, when the only reason for performing an act is to gain something outside the activity itself, such as passing an exam, or obtaining financial rewards, the motivation is likely to be extrinsic.

So what can language teachers do to enhance motivation?

1. Be aware of both initiating and sustaining motivation.(Williams and Burden,1997)
2. Recognize people as individual.
3. Help learners to be self-directed(Ellis,1994).
4. Give them optimal degree of challenge(Zone of proximal development(Williams and Burden,1997)).
5. Build up individuals' beliefs in themselves.
6. Generate learners' interest and curiosity.
7. Give feedback that is informational and in time.
8. Set a supportive learning context.

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*"A Life-Changing Experience": Second Life as a Transformative Learning Space*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

Higher education teaching traditionally occurred, and to some extent still does, in face-to-face physical settings (often lecture theatres) with an academic and a group of students. In recent decades, the emphasis has shifted to learning communities and the mode of delivery has evolved from traditional face-to-face to online. This occurs either blended with face-to-face or exclusively online, most commonly through the medium of a learning management system. For students who have been studying by distance education, this has frequently been an isolating, if not alienating, experience. At the University of New England, Australia, transformative learning spaces have been created in the virtual world of Second Life. These spaces have proven to engage students in their learning and provide opportunities for interaction that can span both time and space. In doing this, learning communities and a sense of belonging have been fostered. Data from four research projects are presented in this paper, demonstrating how virtual world learning spaces have transformed learning for students. From the data, it is argued that learning in a virtual world lessens the sense of isolation and heightens the sense of belonging to a learning community. It is also argued that virtual world learning increases engagement and provides opportunities for students removed from each other geographically to work together to meet learning outcomes. The paper is concluded with a discussion of how virtual world learning spaces have the capacity to provide for global sharing of both learning and teaching.

**Keywords:**

*Second Life*, virtual worlds, experiential learning, teacher education

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## **Introduction:**

Higher education institutions (HEIs) are important centres of learning, continuing a long tradition of tertiary education. Traditionally, this learning has occurred face-to-face and the learning spaces have been lecture theatres and tutorial rooms or laboratories. Much of the teaching in the lecture theatres has been direct transmission from 'expert' to 'novice'. However, this more traditional way of learning and teaching has changed. Online learning has gained momentum in HEIs around the world (Gutierrez, 2010; Hiltz & Turoff, 2005; Puzziferro & Shelton, 2009) and this is dramatically demonstrated by the current exponential growth in the exploration into and delivery of what are described as massive open online courses (MOOCs). These MOOCs have the capacity to deliver education on a large scale to thousands participants who may be anywhere around the world. These courses are pushing the envelope of distance education and creating new kinds of online learning spaces.

Accompanying a change in the learning spaces in HEIs (from physical to online), there is greater accountability and HEIs are being measured against a range of indicators including retention and student satisfaction as well as success rates (Shillington et al., 2012). In Australia, most HEIs are government funded and the success of and satisfaction with the learning experience provided is publicly reported via a government website (Simpson, 2009) and in New Zealand government funding for HEIs is performance based with retention, course completion and achievement as key indicators (Marshall, 2012; Shillington et al., 2012). Engaging students in their learning and the university community is thus vital and predicates the need for effective learning spaces, particularly for distance education students. Simpson (2009) has argued that too often HEIs have tried what he describes as a 'goulash' approach to supporting and engaging distance education students, providing a toolbox of as many strategies as possible rather than developing spaces that work. This occurs in spite of the research outlining the importance of the learning space to student engagement and success (Bennett, 2011; Dugdale, 2009; JISC, 2006).

In this paper, the authors discuss their research about a virtual world learning space that demonstrates the capacity of this environment to engage students in their learning and to transform how online learning, particularly for distance education students, has been transformed.

## **Distance Education and Virtual World Learning Spaces:**

As long ago as 1995 Keegan outlined the possibility of students being able to engage in education that was "face-to-face at a distance" (p. 109), in this case education via satellite. However, the capacity to study from a distance has earned its share of critics. While the development of a range of information and communication technologies such as learning managements systems, blogs, wikis and other Web 2.0 tools have been argued as impacting online learning (Beldarrain, 2006; Bower, 2011; Buck, 2009; Peters, 2010), distance education is still seen as needing to overcome the view that it is a "second rate, impersonal educational option" (Baggaley, 2008, p. 41). Research suggests that what is lacking is a sense of social presence and accompanying student engagement. Social presence (Short, Williams, & Christie, 1976), a feeling of belonging to a community, has been shown to have positive impact on student satisfaction and "students' perceptions of social presence overall ... contribute[d] significantly to the predictor equation for students' perceived learning overall" (Richardson & Swan, 2003, p. 68). Dow (2008) argues that the quality of student and academic interactions that occur impact on social presence and that high quality interactions require strategies that "effectively facilitate online socialization and engagement" (p. 240).

Engagement is closely linked to social presence and its development is essential. Student engagement means that they “have a sense of energetic and effective connection with the activities they are undertaking” (Schaufeli, Bakker, & Salanova, 2006, p. 702). Linked with social presence, engagement has been shown to improve student outcomes (Tu, 2002).

The literature on distance education reporting student feelings of isolation, feelings that have been shown to contribute to high attrition rates and reduced student satisfaction (Alston et al., 2005; Buchanan, Myers, & Hardin, 2005) prompted the authors to explore alternative learning spaces from those already available. They work at the University of New England in Australia which has a long tradition of distance education delivery. It has more than 80% of its students studying in this external mode (UNE Corporate Intelligence Unit, 2011) and e-learning is one of its strategic goals. While acknowledging that Web 2.0 tools, UNE’s main delivery mode, have been shown to assist in student interaction online (Guri-Rosenblit, 2009; Lee & Chan, 2007; Peters, 2010; Veletsianos, 2010) enhance interaction, an environment that could better help to overcome isolation and enhance social presence was seen as crucial. Research into the use of a virtual world environment began.

Virtual worlds are “richly immersive and highly scalable 3D environments” (New Media Consortium and EDUCAUSE Learning Initiative, 2007, p. 18) and they have affordances such as their capacity for immersion, simulations and extended interactions (Warburton, 2009) that suit them to educational purposes. Indeed, a research project conducted by McKerlich, Riis, Anderson and Eastman (2011) examining student perceptions of a teaching, social and cognitive presence in virtual worlds demonstrated that “learning in a virtual world is often perceived as a rich educational experience that includes elements of all three presences” (p. 334) and they concluded that:

learning is taking place in virtual worlds and this medium will continue to grow. The days of presence deprived online learning could be limited; virtual worlds have the potential to provide a rich learning experience overflowing with presence (McKerlich et al., 2011, p. 334).

The use of virtual worlds as learning spaces is growing and, in Australia and New Zealand, they are being used in innovative ways for teaching and learning across a range of disciplines (Dalgarno, Lee, Carlson, Gregory, & Tynan, 2010; B. Gregory et al., 2011; Gregory et al., 2012). *Second Life*, although losing some traction in the educational field, is still the virtual world that is most used by educational institutions worldwide (Liu, Kalk, Kinney, & Orr, 2012). For this reason the authors commenced researching in *Second Life* in 2008.

### **The Research Studies in Brief:**

#### *Study 1: 2008*

The first study commenced in 2008 when Gregory built a custom learning environment, Education Online Headquarters to provide her participants with somewhere they could feel a sense of belonging and where they could meet both formally for class sessions and also informally, outside of ‘class’ time. In this way, social presence could be enhanced. The aim of the research was to explore the potential of virtual worlds as an effective environment to engage students in their learning. Gregory had created her avatar, Jass Easterman, 12 months before data collection began and honed her skills in the use of *Second Life*. Each week, for a two-hour tutorial period, participants met in *Second Life*: in the first hour the meeting was held at Education Online Headquarters to consider issues they were having with their learning and to discuss the focus topics for the week. In the second hour, they visited a range of virtual national and international institutions where they were given tours of the facilities

and the virtual guest academic introduced them to how s/he was using the environment for education. Data was collected through surveys, recording of the in-world sessions (where text rather than audio was used to avoid some bandwidth issues) and questioning. The data supported the contention that a virtual world is an effective teaching and learning environment (Gregory & Tynan, 2009).

#### *Study 2: 2009/2010*

In 2009 the authors began researching together and were particularly interested in the possibilities inherent in the use of a virtual world for role-play. A long term goal was to use a virtual world learning space for teaching practice, but this first research into role-play was more modest and aimed to explore whether a role-play that was practised by teacher education students in face-to-face sessions could be replicated in a virtual world. To assist in the verisimilitude of a classroom, a new learning space was custom-built by Gregory which was interactive and could later be used for other purposes. A playground was also created again for verisimilitude, but also to provide a space for later research. Traditional face-to-face workshops were conducted and then, to permit comparison, repeat sessions occurred in *Second Life*. De Bono's (de Bono, 1985) six thinking hats strategy was the focus of the role-play for two reasons: it was relatively easy to replicate in *Second Life* and it was an integral component of the unit of study of the first year participants. Data was again collected in a range of forms: observation of the participants both by the authors and another academic occurred in all role-play sessions; all online dialogue (which took the form of typed chat) was recorded for analysis; and, at the end of each workshop, surveys were completed. The overall finding was that role-play in a virtual world could be effective and engaging (Gregory & Masters, 2012). This finding is supported by Inman, Wright and Hartman (2010) who, after reviewing other role-play research in *Second Life*, stated that "*Second Life* has the capacity to facilitate role-play activities that are equally effective as role-play activities in the real world" (p. 53).

#### *Study 3: 2010/2011*

While the earlier projects demonstrated that engagement in virtual world learning was high, affirming the use of this learning space, the authors were also interested in whether such learning had any effect on performance. While enhancing social presence and engagement is a plus, it is important that any innovative learning space does not detract from the acquisition of skills and knowledge and possibly have a negative impact on performance. To explore this aspect of learning in a virtual world space, the authors researched the performance (as measured by final grade results at the end of units of study) of participants across seven units in 2010 and another three units in 2011. Those students who studied via the university learning management system had access to chat rooms, discussion forums, blogs, etc. Those who met for discussions in *Second Life* did so in the rooms available at Australis 4 Learning, the island where our classroom and playground had been built and which now included a library space and a staffroom. One particular mini-project within the larger project was the exploration by masters of her students' performance where she was fully responsible for teaching and marking the assessments for 50 students, 20 of whom used *Second Life* and the other 30 interacted with her in the online chat room for an hour per week. The results of this mini-project are discussed later and information regarding the entire cohort can be found at <http://www.une.edu.au/altc/ult-futures/documents/ULT-Futures-2010-Masters.pdf> (Masters & Gregory, 2010). The general finding was that there was no detrimental effect on performance and persuasive evidence that a virtual world learning space could positively affect performance.

#### *Study 4: 2011/2012*

The positive response to a role-play situation in 2009 and 2010 encouraged the authors to seek funding at the end of 2010 for the project which was their long term goal when they commenced researching together. They had demonstrated that a virtual world learning space was effective and innovative and they believed that this research could now be extended in new to benefit teacher preparation. This project, which was concluded at the end of 2012, was undertaken by the authors in collaboration with five other researchers from different institutions as part of an Office of Learning and Teaching grant. VirtualPREX (Virtual Professional Experience) was developed to enhance teacher preparation by providing a virtual world space for students to practise their teaching without risk. Students have been able to role-play teaching scenarios with their peers acting as primary school students. Further developments of the synchronous role-plays are possible as bots (robot avatars) are developed to interact with the student playing the role of teacher. This will facilitate asynchronous practice permitting anytime anywhere access to a teaching practice environment. Data collected through observation, recording and survey demonstrated that this role-play activity had the capacity to add to the repertoire of learning experiences for pre-service teacher preparation.

#### **Discussion of the Results:**

##### *Student Engagement and Presence*

The results of the 2008 project demonstrated that “the virtual world of *Second Life* is an engaging environment for the students” (Gregory & Tynan, 2009, p. 379). This is supported by the data from several re-iterations of this early project. Student comments from the surveys revealed evidence of both engagement and social presence. One convincing example from the many is:

*I had a defining experience last week when we sat down in that open-air lecture space and I sat on one side and the rest of you sat on the other side. Suddenly I felt lonely and, without thinking, got up and moved to where you were all sitting. And then, I thought, that felt so real!*

Again, distance education students, after undertaking the role-play in the de Bono project, informed us that:

*For an external student, you can feel very isolated and alone whilst studying. I find that SL provides an opportunity to ‘pretend’ that we are all sitting around a table throwing around ideas. I find SL engaging as opposed to chat rooms and I love wearing a ball gown to lectures each week!;*

and

*The use of Second Life is a great way to motivate and engage students, especially those studying off campus. I find that I am more absorbed in this unit (and ICT last semester) because of the interaction with the lecturer(s) and the visual stimulus of actually seeing the other students (avatars). In doing this I feel like I am actually part of the University, being involved in a tutorial and learning from others.*

These comments indicate that learning in a virtual world is engaging and that it also enhances social presence. Several of the comments reported also indicate that the students were able to articulate what it was about their experiences that created this engagement.

### *Enhancing Learning*

As reported in the section on the research projects, while engagement is important, engagement without learning is not constructive. Gregory's early project suggested that learning was effective, with all of the students scoring 80% or more on their assessment tasks with 71.45% of students reporting that *Second Life* supported their learning "quite a lot" and 28.58% reported the support level as a "fair amount". These were the highest two choices on the scale.

The de Bono research project also had students comment about their learning with one student, who had learned the theory from a recorded lecture and textbooks, commenting after the in-world role-play that:

*The opportunity to use Six Thinking Hats strategies in a group situation to guide discussion was deeply beneficial. It gave me a clearer understanding of how to use the hats, and provided an insight into how it may be used in a classroom (something that up until the Second Life session had eluded me).*

Skill transfer occurred from the experiential learning possible in the virtual world learning space. There was also a comment made by a student who used virtual world learning in an ICT and an EDLT unit) that:

*From looking at my results in other units, I can see an improvement in results for both ICT and EDLT, compared to my other two units that had no chat option at all.*

This latter comment suggests that learning is enhanced through the use of a virtual world learning space and this suggestion is supported by the data from the research on performance grades. The mini-project previously described, where Masters had groups in both *Second Life* and the learning management system, again has persuasive results about the efficacy of virtual world learning. Based on the final results of all students (rather than task by task) the two groups in *Second Life* performed significantly better than the three using the LMS as shown in Table 1.

**Table 1: Student Grades - Comparison of *Second Life* and LMS**

*Adapted (Masters & Gregory, 2010, p. 6)*

<b>Result</b>	<b>Blackboard n=30</b>	<b>Second Life n=20</b>
High Distinction	0%	17%
Distinction	46%	72%
Credit	46%	11%
Pass	8%	0%
Fail	0%	0%

These figures suggest that learning in a virtual world is not detrimental to learning and also that learning in a virtual world environment had a positive effect on results.

### *Opportunities for Practice*

As previously described, role-play is seen as one of the positive affordances of virtual worlds (Inman et al., 2010) and the opportunity to role-play de Bono's six thinking hats was

beneficial as indicated by the quoted student comment explaining that it allowed her to understand a concept which ‘*up until the Second Life session had eluded me*’. The VirtualPREX project revealed similar views regarding the benefits of role-play:

*Being able to consider unexpected occurrences within the classroom and approaches in how they can be overcome*

and

*Experiencing a classroom environment without a classroom*

and

*I liked how effective the role-play situation was, and how it relates back to teaching in real life. It helped me see and experience what happens within the classroom with the students.*

These comments demonstrate that the students felt the teaching environment in the virtual world was authentic and that they were able to practise their teaching skills, including management of, and interaction with, the students. One other comment was particularly insightful, with the student able to articulate why a virtual learning space might be so beneficial:

*Enjoyable to see what others did and how they coped with the situation in a safe environment where you could make mistakes and learn from them.*

The risk-free aspect of this form of preparation, where students can practise teaching with no possible detrimental effects on the learning and well-being of real children in a physical classroom was a key driver for this project. Further discussion of this research project can be found in other literature (S. Gregory et al., 2011; Masters, Gregory, Dalgarno, Reiners, & Knox, 2012).

### **Conclusion:**

We are not the only researchers in the arena of virtual world learning spaces. The Virtual Worlds Working group began in 2009 in Australia with ten members from 4 institutions: it now has over 190 members from 54 institutions across both Australia and New Zealand. Research also covers many disciplines and the kinds of learning spaces are diverse. In 2008, Kelton wrote that “the movement toward the virtual realm as a viable teaching and learning environment seems unstoppable” (p. 16) and the literature on virtual world research supports this. Jarmon, Lim and Carpenter argue that a shift has occurred and virtual worlds “are no longer the preserve of the stereotypical geek, nor are they just technical or social curiosities that educators ... can safely ignore” (2009, p. 3). Importantly, they claim that the research has moved away from a “focus on the actual teaching and learning practices and on their assessment in the virtual learning environment” (Jarmon et al., 2009, p. 4).

While virtual world learning spaces have proven to be engaging and effective there is still more research to be done, particularly in the area of how these spaces can transform the way in which higher education institutions support and teach their distance education students. As research commences into the effectiveness of massive open online courses, it is also possible that virtual world learning spaces will have a place in the debate.

Are virtual world learning spaces transformative learning spaces? The authors believe that their research demonstrates that capacity. In terms of transformation, the last word should be left to one of the student participants commenting on her experience of learning in *Second Life*:

*It has been one of the highlights of my entire uni life! This is my 7th year of uni.... and only performing in operas has been better. This has been a life-changing experience!*

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### **Acknowledgements:**

The authors would like to acknowledge the School of Education, UNE, which provided internal research grant funding which permitted the earlier research projects reported here to occur. They also acknowledge the contribution of the following to the VirtualPREX project: Barney Dalgarno (Charles Sturt University), Torsten Reiners (Curtin University) Geoff Crisp (RMIT), Heinz Dreher (Curtin University), Deanne Gannaway (University of Queensland). Support for part of this publication has been provided by the Australian Government Office for Learning and Teaching (OLT) and the Australian Government Department of Industry, Innovation, Science, Research and Tertiary Education through the DEHub Project. The views expressed in this publication do not necessarily reflect the views of the Australian Government Office for Learning and Teaching.

*Using Digital Literacies to Foster Globally and Culturally Sensitive Adolescents:  
Speaking Up About Injustice*

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University of Ontario Institute of Technology, Canada

The Asian Conference on Education 2012

Official Conference Proceedings 2012

A large, faint watermark of the iafor logo is centered on the page. It consists of two concentric, hand-drawn style arcs, one in light red and one in light blue, with the lowercase text 'iafor' in a light blue serif font in the center.

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Through the immersive use of personal mobile devices such as smart phones, tablets, and traditional laptops and desktop computers, adolescents inhabit an out-of-school world of burgeoning new media. Using a multiliteracies pedagogy, mobile devices, social networking platforms and digital applications can give students voice and agency in the context of their learning communities, and thus provide opportunities for them not only to learn subject matter but also to explore issues of identity and their places in the world around them. Using a mixed method research approach of qualitative case study analysis and quantitative surveying, this research investigates the relationship between a multiliteracies pedagogy and the development of adolescent digital literacy and social justice. More specifically, this paper focuses on how two classes of adolescents ages 11-12, reflected on issues of injustice related to First Nations communities in Canada, specifically related to poverty, housing and water crises and residential schooling. The students explored these issues while immersed in a rich media setting, using a social networking site and a combination of print text in traditional book form and a variety of digital texts that they accessed via Mac iBook laptops that were provided to them by their classroom teachers. They also created their own digital and multimodal texts to be shared with a wider community as a way of representing their understandings about the issues and communicating their concerns.

### **Context of the Study**

The research was conducted in two grade 6 classrooms at an elementary school located in Toronto, Ontario. This specific area has a high concentration of immigrants and refugees of mid-lower income status - as a result, the student body of the school reflected this surrounding community. All of the students were New Canadians and some were English Language Learners - a large proportion from middle-eastern countries like Afghanistan, Pakistan, and Syria. Many of these students had witnessed atrocities and suffered hardships that no child should have to experience. Their teachers felt that, even though some of the topics we would explore might be difficult for 11 and 12 year old students to grasp, they would be able to relate to the subject matter as they also were in the position of trying to hold on to their first languages and cultures - even though many students indicated a limited knowledge of First Nations issues in Canada in a pre-project survey.

At this research site, the grade 6 students explored Aboriginal rights to preserve their cultures, languages, customs and knowledge because these are protected under the Canadian Constitution. The overarching research question for the project is, how can we use digital texts to critically engage learners to become socially and globally conscious of the plight of others in our world? Our research team working with the participating teachers collaborated to select the theme, which tied in with their Social Studies and Language Arts curricular goals.

Prior to the study, the two participating grade six teachers had limited experience incorporating technology and the laptops into the learning process, daily routine, and/or the curriculum expectations. The teachers had some basic knowledge of key programs, like iMovie and Garage Band from Professional Development days with the school board, so they were able to provide additional support. However, they also shared that they did

not integrate the laptops as much as they would like to in the classroom as the greatest difficulty was in knowing how to incorporate them.

The site where the research was being conducted is one of the TDSBs inner-city schools. The Principal's vision for the school is one that draws heavily on technology for teaching and learning. Because it is designated as "model school" one of the primary goals is to employ innovative teaching and learning practices.. The Principal chose to intervene with technology, as he sees access and home exposure to technology generally lacking in the community. Furthermore, he sees technology as part of the solution for innovative teaching and learning practices – the kind of projects students can produce and the type of learning (inquiry-based) can potentially raise the quality of education, relevancy and interest in the learning process. The Principal also strongly believes that technology is a positive tool for engaging the community, by sharing student work through the school website and YouTube.

## **Theoretical Framework**

### ***Critical Literacy***

Christensen (2000) reminds us that educators must teach students how to "read" not only "novels and science texts, but cartoons, politicians, schools, workplaces, welfare offices, and Jenny Craig ads" (p. vii). Due to the "sheer volume and varying formats" of digital texts, Stevens & Bean (2007) argue that readers must read more critically, as available texts "demand sharper uses of critical lenses" (p. 17). The plethora of new and emerging digital texts, and the affordances that come with them, need to be taken into account in the literacy classroom. Affordances provided through digital texts offer the potential to assert agency, action and change, offering a different experience. Teaching adolescents to 'rise up' and become aware of the world in which they make meaning requires an "emancipatory act" and development of skills in which their voice and actions have both meaning and consequence at the same time (Christensen, 2000, p.vii). Understanding what this means is an essential component of being a part of a community. Learning what it means to be a "justice-oriented citizen," which moves beyond the notion of a "personally responsible citizen" (Lewison, Leland & Harste, 2008, p. 4), requires the development of a literacy community which focuses on open communication, the exchange of viewpoints, the sharing of opinions, as well as the ability to listen attentively to others and demonstrate empathy. Understanding how positive choices contribute to a social consciousness, and how negative choices lead to misunderstandings and conflict, we can help adolescents to embrace our global society.

### ***Multiliteracies***

The New London Group's (1996) concept of multiliteracies highlights the relevance of new forms of literacy associated with emerging multimedia, multimodal technologies. A multiliteracies framework takes into consideration "the wide variety of culturally specific forms of literacy evident in complex pluralistic societies" (Cummins, Brown & Sayers, 2007, p. 46). Traditional forms of literacy that focus solely on reading and writing in the dominant language, typically fail to recognize the impact of digital media in adolescents' lives, or take into account students' multilingual and multicultural backgrounds and

experiences. It is important to better understand how adolescents, who have grown up in a digital age, use and interact with digital media in the context of their writing. This would help develop a theoretical basis for teaching practices that aim to draw and build upon the digital literacies that students already possess, albeit in a nascent form, and which remain largely untapped in classroom contexts. Prior to the study, students indicated on the pre-project survey that they used technology primarily for Facebook, watching YouTube videos, email, Google searches, Wikipedia and online gaming. Thus, the students had some previous technology skills; however, they had not used their skills in an educational setting.

The argument for a pedagogy that takes into account, not only traditional print and oral literacies, but also visual and multimodal representations, has been well established in the literature (Alvermann, 2004; Cope & Kalantzis, 2000; Kress, 2003; Kress & Van Leeuwen, 2001; New London Group, 1996). The potential role of digital media in education is only beginning to be explored and although scholarly discussion surrounding this new field is growing, there is much work to be done if we are to understand how emerging technologies are changing the literacy and learning practices of today's adolescents. What happens when students are given opportunities to construct knowledge and understanding using the kinds of digital media that figure largely in their out-of-school lives? More importantly, within the context of a knowledge economy, what does it mean when school communities' acts of citizenship accessed through digital texts, can reach out to the global community to affect social, cultural and political change? The Internet has offered youth of today the capacity to affect change in the lives of others; however, many school boards are taking a protectionist stance by banning cell phones and iPods and blocking many of the websites that could be used for their educational potential. A multiliteracies pedagogy responds to this capacity to affect change through embracing a collaborative learning and teaching community through recognition of the pluralities in literacies and learning within our global society.

### ***Communities of Practice***

We extend Wenger's (2009, 1998) notion of communities of practice to school and classroom communities that use an inquiry approach as they strive to have students see themselves within a larger world and what that means within a diverse society. As learners develop socially, cognitively, and emotionally, it is necessary that they understand that everyone has rights and responsibilities within a given community and this understanding needs to be extended to other global situations. Developing adolescents' emotional maturity and understanding of others globally can happen with acceptance and taking responsibility for each other. Peterson (2007) suggests that there are five characteristics essential in the development of a critical/social justice classroom. These include focusing on a curriculum grounded in the lives of the students, facilitating dialogue within and among communities, advocating a questioning or problem-posing approach, emphasizing critical literacy skills such as detecting and critiquing bias and attitudes, and teaching activism for social justice. Peterson insists that a symbiotic relationship exists between teaching through inquiry and teaching for social responsibility

because “with inquiry-based teaching, the process becomes part of the content” (p. 28). No longer is the curriculum simply the novel or the facts to be learned but, rather, the students and their teacher together using books, other authentic resources, and their own opinions and experiences to create the “living curriculum” as a true community of learners.

### **Research Design**

This mixed-methods study employed a combination of quantitative surveying and case study methodology. The bulk of the study is primarily qualitative in nature, in keeping with the established practice of in-depth studies of classroom-based learning and case studies in general (Stake, 2000). As Bruce points out, case studies “provide the best articulation of adolescents’ media literacy processes, especially as much of the emergent forms of their use has not been studied” (Bruce, 2009, p. 302). Case study data consists of (a) detailed field notes; (b) students’ writing; (c) transcribed interviews with students and teachers; (d) the digital texts created by students; and (e) video recordings of selected learning/authoring activities.

Prior to the commencement of the project, the students completed an online pre-project survey. Using MacBooks, students read and critiqued a variety of digital texts in literacy centres, which focused on the UN Convention on the Rights of the Child and the UN Declaration on the Rights of Indigenous Peoples. In each of the literacy centres students were required to read print and digital texts related to the issues of concern in First Nations Communities. As a response to what they read, the students created their own digital and multimodal texts to be shared with a wider community as a way of taking action. After the unit was completed, the students completed an online post-project survey and the research team conducted open-ended interviews with the Principal, the teachers and selected student participants. These interviews were transcribed and analyzed in order to determine best practices in the use of digital media to teach social justice/critical literacy. Student generated artifacts were also analyzed based on their effectiveness to communicate a social justice message through a digital text (one in which image, text, sound, graphics, etc. converge to make meaning).

Because of the complex blending of multimodal data elements, we use the digital visual literacy analysis method of Hull and Katz (2006) of developing a “pictorial and textual representation of those elements” (p.41) - that is, columns of the spoken words from recordings juxtaposed with original written text, the images from digital texts, and data from interviews, field notes and video recordings. This facilitates the “qualitative analysis of patterns” (p.41). The analytic methods will include thematic coding (Miles, 1994) and critical discourse analysis (Fairclough, 1995). The data was read and coded for major themes and sub-themes across data sources, and the codes were revised and expanded as more themes emerged. In the authoring of the digital texts, we were particularly interested in moments that might be interpreted as “turning points” (Bruner, 1994) in the conceptual understanding of inequities related to Indigenous peoples.

In 2007 the UN General Assembly adopted the UN Declaration on the Rights of Indigenous Peoples. There are over 370 million Indigenous peoples in Africa, the Americas, Asia, Europe and the Pacific and many of them are among the most impoverished, marginalized and frequently victimized people in the world. At the time we were planning the research activities, information about the housing crisis and general living conditions in Attawapiskat, a northern Ontario First Nations community, was all over the media. The teachers wanted to extend the traditional unit of study based on First Nations history and culture to include an examination of some of the current issues facing First Nations people today. Some of these issues include the impact of colonization, low levels of educational attainment, high unemployment rates and extreme poverty in some areas, mental and physical health issues, such as depression, suicide, type II diabetes, and fetal alcohol syndrome, substance abuse, incarceration rates, family or community separation as a result of residential schooling policies, and the loss of traditional ways of life, specifically related to culture and language.

The students were each provided with a MacBook laptop and divided into groups of 4 – 5 with whom they would circulate to each of the seven mandatory digital learning centres. Each centre were based on the following topics and addressed a major political, social and/or economic issue in the Indigenous community (past or present): Impact of Colonization; Current Events: Focus on Attawapiskat; Residential Schools; Rights of the Child; Child Poverty; Endangered Aboriginal Languages; Indigenous Culture and the Arts. In each centre, students read a text/watched a video clip and responded to the information by producing a piece of digital media. After students completed the digital literacy centres they created digital poems in small groups

### ***The Digital Poems***

As the culminating activity for the First Nations unit, students wrote poems from the perspective of a Residential School survivor – either individually or as a group - and then put their poem to music or created a multimodal video of their poem using music, images and text. This was done in order to give the poem and message more impact and to make it easier to share with the school and community.

The students were engaged by the digital format and social justice element of the culminating tasks - the element of novelty when cutting the iMovie videos and recording the music ignited students' creativity as they were able to choose the images, sounds and structure that best reflected their poems. In the age of YouTube and information sharing, the video format - with the ability to share it - appealed to the students. Additionally, the social justice element allowed students to develop an emotional connection to the content. They talked about wanting to share their poems with residential school survivors so that the survivors would know they are not alone and that others empathized with them. One of the students said, "I think that I would share this poem with probably more residential school survivors because I would want to share it with them just to let them know that they are not alone and they are not the only ones feeling sorry for themselves. I want them to feel that they are not alone." Another student mirrored these sentiments in saying: "I would do the same, uh, I would give it to most residential schools because

they are the ones who actually inspired us to make this poem. You know to show them that um, that they don't have to feel alone about where ever they are. If they are feeling sad, we can always help them and we are always a part of their society."

Finally, after completing the digital poems, one student saw a greater application as she said: "I wanted to share it to children, like maybe if there are children out there who are still racist or mean or leaving people out because of a really rude, mean reason, I would want to share with them to tell them that life can be worse for other people and you can't just, you like have to think of the other person's feelings."

### ***Community Outreach***

An important component of the research project is involving community. We invited two award-winning First Nations musicians into the classroom to share their music and experiences growing up on a reservation in Manitoba – Tracy Bone and JC Campbell. We also had an elder, Cliff StandingReady, who is a residential school survivor come in to talk to the students about his turbulent experience in a residential school.

This dialogue with community members brought the project to life for most students. One explained: "He actually brought it out and when you talk to a person, well, he's actually a man expressing his experience about it happened. And while on the web you can read it out but you don't feel any expression or any feelings. But when you talk to a real person you can actually understand it." Similarly, another student shared: "Cliff was a real person from, like a residential school survivor, and after, when the survivor was talking, we understand more about it and have more feelings about it." Integrating the community in the learning process moved the learning beyond the classroom walls thus, breathing life into the content and adding a necessary emotional connection.

### ***The Project of Heart***

Throughout the project, which included the digital literacy centres and the culminating tasks, students simultaneously worked on 'The Project of Heart'. POH is a multi-school art project to commemorate the lives of the Aboriginal children who died as a result of the Residential School system. Each participating student received one tile to decorate to represent a child. When the tiles were completed, an Aboriginal elder visited the school to perform a 'Smudging Ceremony' where the tiles were 'blessed' by the elder, and the 'souls' of the children were lifted up to the sky. After the ceremony, the students were encouraged to ask the elder additional questions about the ceremony, the children, his personal residential school experience and the First Nations' experience with the Canadian government in recent history. Through the Smudging Ceremony, students were able to witness first hand some of the sacred rituals introduced earlier in the project.

In terms of the research findings, we found that students made gains in both their understanding of aboriginal issues, and their development of digital literacy and critical literacy skills. Prior to the study, the students' knowledge of First Nations issues was varied – the residential schools system, access to housing and healthy food/water, and

drug and alcohol abuse were the least understood. On the pre-survey, one student wrote, “to be honest, I thought that First Nations were more like a [*sic*] extinct community...” After the study, 98% of students indicated their awareness of historical and current issues had risen. When asked how, one student responded, “Now I know what Colonialism is, and more about Residential Schools.”

### *Creativity and Innovation*

The teachers found that students were eager to use the technology to create their own digital texts and that students who typically struggled with paper and pencil tasks excelled when using the technology. One teacher reflected:

There was this one boy who, he wasn't getting through the centres and he is somewhat more slow with tasks anyway. So I wasn't surprised by that, I was a little frustrated with him and I was thinking, oh here we go again. Like, he isn't getting his work done and when I went over to look at; you know he had spent five or six days on one thing, I realized that he was so engaged with doing this amazing job and was having so much fun getting this task to be the absolute best, it didn't matter that he maybe didn't complete some of the other tasks. Because some of the other kids were all about, okay, I want to have all of the tasks completed. There are seven: I need to have seven done. He was more engaged in getting at the depth within that activity and that we really showed me a different side of him and I was kind of like, that was really neat. I didn't think that he could sustain that much energy but he enjoyed the technology and I could see that there were other aspects to him that technology would bring out in school where as the regular pencil, paper doesn't engage him.

The creative and multi-modal affordances technology introduces in the learning process was crucial in getting this particular student engaged.

One of the students shared: “I thought that the process was interesting because it was different from our original school lives and it was fun to do something different and more creative than writing on a piece of paper.” The majority of students interviewed shared similar sentiments regarding the ‘interesting’ ‘fun’ and ‘more creative’ elements that arise when technology is integrated into the learning and application processes.

### *Communication and Collaboration*

One of the key findings was how students collaborated and shared their expertise. The teachers found that they were no longer the “experts” in the room. The inquiry based approach proved to be very successful in terms of empowering the students and promoting independence. One of the teachers observed:

...once someone figured out how to solve a problem or get something done, they became the experts in the room. And I kept saying, “I am not going to be an expert in any one of these things, I am here to oversee things and you guys are going to have to become the experts yourself.” That was neat to see and I

would say, “You need to go and see Omar for that and you need to go and see Fifa, she knows how to do that” and they ran themselves without me having to be constantly on them. They knew how many they had to do, which ones were done, who they could get help from. They became independent, which is really the goal. We set up the learning challenges, the success criteria, then let them go and they did it...[it] was really exciting to see them helping each other and coming up with great solutions to technological problems.

It was clear that the laptops leveled the learning ‘playing field’ and that the teacher-student hierarchy was put on pause during these sessions. The level of engagement, empowerment and confidence rose dramatically in some students

#### *Research and Information Fluency*

For many of the students, being able to access current information from their desks was a highlight of the project. The teachers found that the novelty of using laptops didn’t last long and the focus became the learning. One of them commented:

It’s noticeable now that the technology in the room is a tool. It’s not this thing that is housed over there and we only take it out a few times. Now when someone takes a laptop out and someone is using an atlas, or someone takes a book out, or someone is talking to a partner working, it’s not like everyone is crowding around like it’s this special thing anymore. It’s just a tool that we use and then you can get on with learning when it’s no longer that novelty. And I am becoming that much more comfortable and I am now looking for ways- I go there first. How can I use them to introduce this lesson or this topic and what can they use that to show me. Now I am not looking only for going to the library to do this, where we pull out the books, right; we pull out the laptops.

By integrating the laptops, the teachers and students learned to rely on them as sources of information and as educational tools rather than as novelty items. Additionally, the teachers discovered there was learning happening on multiple levels throughout the project – both skills-based and content-based:

I think there was a fair amount of learning in terms of their computer skills, their ease of working with the laptops, their ease of working with software on the particular websites. And, I think that’s where the biggest learning happened and also in the content area, learning about modern day First Nation’s issues, so that’s where the information learning was and the skills learning was the technology.

As a result, the biggest challenge for the unit was not potential student distractibility with the computers, but rather, finding the materials for the unit.

#### *Critical Thinking, Problem-Solving and Decision-Making*

The teachers also noted that the students all made gains in terms of their problem-solving skills and ability to “trouble-shoot” – with 37 students in each classroom, they had to learn to rely on each other or find another way to do something or they would have been waiting a long time for help. One teacher noted, “Definitely trouble-shooting became an issue, so some of them got stronger at it. It was obvious which kids do a lot of computer trouble shooting at home and I felt there was a lot of helping of people.” The project gave students the opportunity to practice their problem solving skills as there was often multiple solutions to one problem; for example, saving an image to the desktop. Furthermore, the leveling of knowledge in the classroom allowed some quieter students to shine when they discovered answers to questions posed by their peers.

Finally, in the culminating tasks, students were challenged to make difficult decisions when it came to choosing the most appropriate images, sounds, fonts and transitions to reflect the tone, mood and message of their piece. At times, students were asked why they had chosen a particular image or transition and asked to reflect on whether or not this truly served the function of their piece. The decision they had to make encouraged them to think deeply about how these tools affected the overall piece – something some of them had not previously considered. Participating in the digital learning centres and the culminating project, and listening to the guest speakers helped the students critically examine the First Nations’ role in Canada both past and present.

#### *Critical Literacy Development*

Most notably, the students made gains in terms of their critical literacy skills. They asked important and hard questions about inequities and injustices. The elder that came in said that they asked better questions than his typical university audiences. And they became, as one teacher commented, “more motivated by social activism as the result of this project” – in a subsequent initiative unrelated to the project, most of the participants and organizers were from these two grade 6 classes. The other teacher was surprised by how moved to action her 11 and 12 year old students became: “I think for eleven and twelve year olds to be able to do that, it’s a big deal because they are very self-centered.” One student responded in her post-project survey, “at first I thought it wasn’t such a big issue. But this project made me realize what First Nations have been through.” It was clear the students had engaged with the content on a critical level that caused them to internalize the content and opened them up to social justice activism.

When questioned what type of action one student could take to raise awareness about the issue of residential schools in Canada, he explained he would use the digital tools from the project to, “spread the message so that more people are aware...” and that he would use, “media, internet, Glogster and Facebook.” Having the students internalize these social issues and view the digital programs as tools of social activism and change was significant. This student concluded by adding that learning the tech tools was necessary for their future as, “...we are growing up in a world of technology, so when we grow up, we can process this technology.” He understood that without access to, and knowledge of how to use these tools, the students would be at a disadvantage later in life. Furthermore, it was through the critical thinking tasks in the digital learning centres – like the

comparisons and critiques of different modes of media – that the students learned to be critical of what media is the most effective.

## Conclusion

By tapping into students out-of-school reality – one heavily immersed in the digital world with personal computing and handheld devices and the internet – and using a multiliteracies pedagogy, students were able to quickly connect with the First Nations' content, the technology-based teaching tools and the multimodal final project. Furthermore, the exploration of First Nations' issues in this type of critical and tech-based environment ignited a greater interest for the students in what it means to develop critical literacy skills and to become a socially engaged member of society. The mixed method research using qualitative case study analysis and quantitative surveying concluded in a clear link between a multiliteracies pedagogy and the development of adolescent digital literacy skills and social justice activism.

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*Enhancing Chemistry Learning with Moodle Application among Foundation  
Engineering Students - A Survey on Students' Perception*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

Teaching Chemistry as one of the components in the foundation engineering program has been a challenging task to chemistry lecturers. Students that are not progressing to Chemical Engineering find the module daunting and unimportant for their undergraduate studies. In addition, with the intermixture of Malaysian and international students enrolled in this program, some students have high-school Chemistry knowledge whereas others do not possess any knowledge at all. In order to accommodate these two opposites, a course webpage was constructed with the Moodle software system that utilizes various applications such as forum discussions, on-line assessments, accessing course information and learning resources including videos and useful links. The web application is not a duplicate of classroom content but serves as a complementary to further provide guidance and assistance to students' learning outside the classroom. Therefore, the research investigates students' perception on the usefulness of the course webpage in terms of content, accessibility, satisfaction and whether the experience stimulated their interest towards learning Chemistry. A total of 124 foundation students were surveyed using a standard questionnaire. The survey results show that the majority of the students gained positive experience in their chemistry learning via Moodle application, while 73% of the students valued a combination of face-to-face and Moodle-assisted learning methods. This implies that the hybrid approaches offer flexibility and provide adequate support to students in learning chemistry.

*Keywords:* Moodle, teaching Chemistry, course webpage

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## 1. Introduction

Chemistry is a compulsory module in foundation engineering programme at the University of Nottingham Malaysia Campus (UNMC), the branch of the UK campus. Pre-requisite for this programme is high-school leavers, with A-levels or high-achievers of O-levels. Students in this programme will progress to undergraduate studies in mechanical, electrical & electronics, civil or chemical engineering degree courses.

Due to more physics-related modules in the engineering subjects, teaching chemistry has always been a tough task to most chemistry lecturers. Research has revealed that students often become uninterested, as the subject demands theoretical and fundamental understanding which they should have acquired in a science lesson during their high-school (Stark & Gray, 1999, cited in Cheung, 2009). Generally, most students are in-favour of calculations and proving-concept modules rather than memorizing periodic table and deriving chemical equations. In addition to this, there is a vast mixture of students from various countries, which are from the Middle East, Africa, Eurasia and Asia continents. Due to the variety, students carry different levels of background knowledge of chemistry. Some are in an advanced stage, with a few at a basic level as well as those who use chemical terminologies from their country of origin.

Catering to all these different students' needs can be a daunting and challenging task to lecturers. With only a two-hour lecture and one-hour tutorial class allocated per week, contact hours have to be spent wisely to cover one chapter per week. Moreover, additional classes for the less performing students are almost impossible due to their heavy time-table. The contact hours sometimes can prove to be insufficient, especially when introducing new chapters. The good performing students often challenged and cherish the time constraint; however, the poor performing students often feel stranded, which can be de-motivating to them in the long run.

In order to address this issue, a blended learning environment using Moodle platform is proposed to facilitate students' learning in chemistry. The term 'blended learning' is usually recognised as a combination of face-to-face and online course delivery (Brouwer & McDonnell, 2009). It provides a harmonious balance between web-based activities and in-class activities (Ocak, 2011). Blended learning shifts the content delivery practices from a lecture-centered to a student-centered instruction in which students become active as well as interactive learners (Dziuban, 2004).

## 2. Background of Study

The usage of Learning Management Systems (LMSs) such as WebCT, Moodle or Blackboard has been widely integrated in the higher education process. It is normally utilized as a supplemental learning platform to traditional learning education, which is known as blended learning environment or hybrid learning environment. Many universities have practised and have been committed to blended learning approaches (Peat, 2000, Liaw, 2008, McDonnell, 2009). According to Peat (2000), the transition to a mixed mode learning environment at higher institution is related to four imperative reasons namely the rise of lecturer-student ratio due to the growth of students enrolment and low staff resources; course modularization that increases the pressure to share materials; information technology that satisfies user expectation and consumer expectation on educational technology in higher education institution.

The learning management system at UNMC was previously supported by WebCT and the usage of U-drive, i.e., a shared network storage space for students and staffs. Instructors were given the option to upload their course materials either through WebCT or U-drive. Students were not obliged to use online learning approaches because most of the course materials were easily accessible through U-drive system within the campus. However, UNMC has introduced Moodle as the new virtual learning environment to support teaching and learning in the academic year 2011-2012. There is a gradual shift from WebCT based e-learning to the Moodle application and the transformation will be in full force across the whole university during the autumn 2012 teaching session. Gradually, the U-drive network system will be removed as Moodle will be the key resource for learning materials and activities. Nevertheless, students need a period to adapt to the new blended learning environment as they are not uniformly knowledgeable in the use of virtual learning and some of them are still comfortable with the existing U-drive network interface to access the learning materials. Thus, the aim of our work is to examine students' perception when acquainted with the blended learning environment as well as their insight in the use of Moodle environment in learning chemistry. This paper will investigate the learning experience of first year foundation engineering students at the UNMC when Moodle acts as a supplementary platform to teach and learn chemistry.

### 3. Literature Reviews

Learning chemistry is challenging to students in that they require thinking and visualizing chemical structures and reactions at several levels. Due to the abstract concepts involve in chemistry, many students fail to visualize and translate the interplay between the chemical concepts at several levels (Wu, Krajcik & Soloway, 2001). Visualisation of chemical structures, processes and reaction mechanisms on molecular level is needed and can be a daunting experience for the students (McDonnell & Brouwer, 2009). To overcome this, support of educational technology has been developed and found to be very useful for teaching chemistry to large groups of first year undergraduates, particularly those who have not studied chemistry at secondary level. Charlesworth and Vician (2003) reported about their introduction of a WebCT learning on a first year chemistry programme. Their intention was to motivate and improve students' learning through virtual learning approaches. Students' feedback revealed the appreciation on the flexibility of the system where they showed confidence in learning chemistry and less anxiety about the exams. Lovatt et. al. (2007) examined the interaction of first year undergraduates with Moodle system and it was found that students who were stimulated to use the online resources did better in their examination than those who were not. In general, the use of e-learning especially in higher chemistry education provides flexible learning environment that helps students to learn and improve their performance in chemistry especially in the freshman year.

On the other hand, McDonnell and Brouwer (2009) wrote a chapter about online support and online assessment for teaching and learning chemistry. They reviewed several good practices of using educational technology to support the teaching and learning in chemistry for higher education. They commented that the flexibility of online learning platform allowed students to access lecture materials and resources at anytime on any networked computer. Support materials such as useful website addresses, sample exam questions, revision materials and self-study materials assisted the first year undergraduates to narrow the gaps between their pre-requisite science knowledge and the initial knowledge required for higher education. Online assessment tools such as online quizzes and self-tests with instant feedback also

improved the students' learning and they performed better in exams. This is equivalent to the survey of Rossiter et al. (2010), where online quizzes were implemented in a Chemical Process Principle course during the freshman year. They discovered that the online quizzes engaged the students throughout their learning and also assisted the weaker students to improve through teamwork and discussion.

Besides, communication online such as chat room, blogs, wikis and discussion forum develop a flexible student-centered learning platform in which students share information and work in groups. Lu and Law (2011) have investigated the effect of wiki and peer assessment tools embedded in the Moodle system on students' collaborative learning behaviour. 186 students participated in the study and they were put into groups of five or six to work on their projects. From their findings, wikis were effective in getting students to work on their individual projects, i.e., the more they participated, the better their final project performance became. However, the students did not focus much in working and sharing on the wikis of other groups' project. It was recommended to design wiki activities that encouraged more collaboration works among the groups.

Although the benefits of e-learning have been discussed in various previous studies, some researchers have also revealed some critical factors affecting user satisfaction with e-learning. Liaw (2008) investigated learners' satisfaction, behavioural intentions and the effectiveness of the Blackboard e-learning system. From the responses of 424 university students, learners' self-efficacy, system quality and interactive learning activities were the key factors that influenced e-learning usefulness. Pei-Chen Sun et al. (2008) discovered that course quality which includes teaching materials, interactive discussions and course-scheduling have the strongest association with satisfaction regarding e-learning. Nevertheless, they could not deny that instructors' attitudes played the most significant role to push forward the success of e-learning activities.

#### **4. Course Webpage Design and Description**

The blended learning environment was designed for a course entitled "Chemistry B", which was a core module offered to chemical and civil engineering foundation students. The front webpage provides the overall course content of the Chemistry module with the names of the chapters, followed by the activities in a drop-down list for each chapter (as shown in Figure 1). The activities involved in each chapter include: course materials, additional materials, quizzes, open forum/chat and latest news message/calendar.

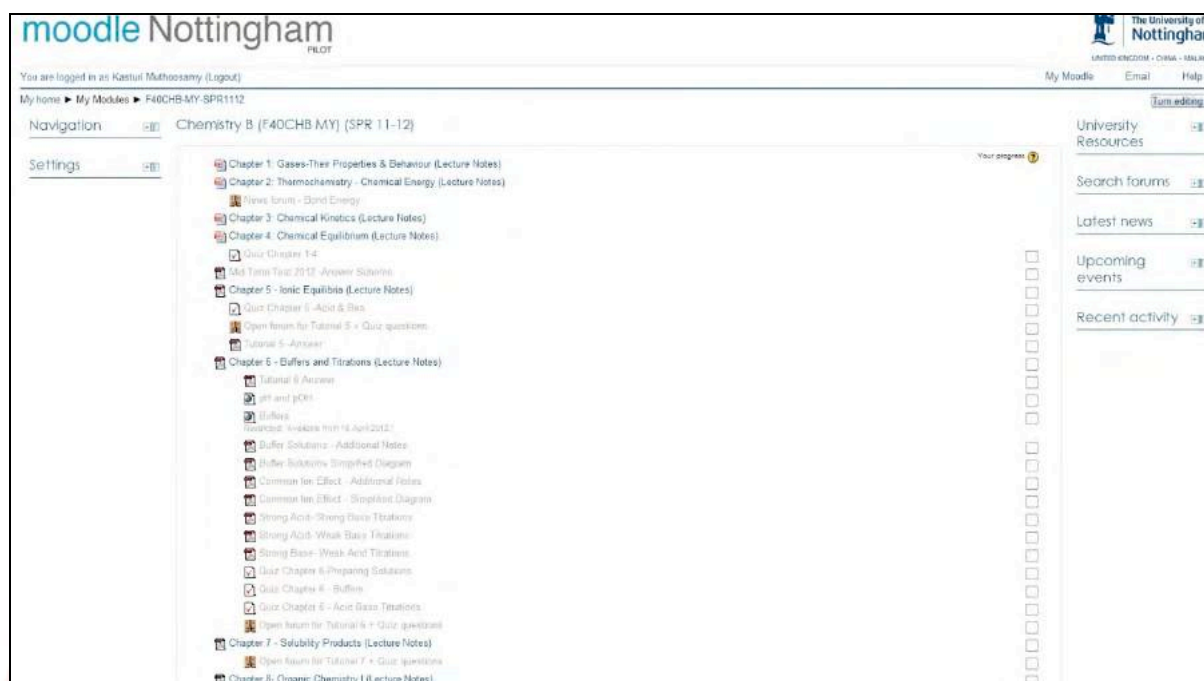


Figure 1: The course outline for chemistry module

#### 4.1 Course materials

There are a total of nine chapters in Chemistry B with topics of namely, Thermochemistry; Chemical Kinetics; Chemical Equilibrium; Acid and Base; Buffers and Titrations; Ionic Equilibrium and Organic Chemistry. Each of these chapters has plenty of information and activities related to the topic. This includes the course materials in the form of PowerPoint slides and Acrobat PDF documents, which are the duplicates of hand-outs that the students received in class. It is important to provide a softcopy to the students, as it is colored compared to their hardcopy and helps better in comprehending complex diagrams or figures.

#### 4.2 Additional Materials

Nowadays students are very much visual learners. Chiang and Lee (2011) did a survey on the learning style of 150 foundation engineering students at UNMC. Their findings showed that the majority of the students expressed the strongest preference to visual learning style compared to other learning style dimensions. This implies that engineering students are strongly depending on visual learning environment. Video is clearly a valuable additional learning activity that provides a sensory experience that allows concepts and ideas to actually become alive and connected. It has the option to rewind and review a particular section of the video to ensure students understand the key concept. Thus, free educational video sharing websites that explained the chemistry theories such as Hess Law and Bond Energies were uploaded in the webpage. In addition to this were video links from You Tube about Acid, Base and Titrations. Apart from this, problems and solutions as well as simplified diagrams explaining complex concepts, taken from textbooks or take-home questions which were not discussed in class, were made available online for students. In each of these adapted materials, references were stated clearly in order to allow students to seek the original sources if the need arises, apart from avoiding copyright infringement.

### *4.3 Quizzes*

Quizzes were incorporated in each chapter for students who were keen to self-test their knowledge and learning after the revision of a chapter. Short quizzes in the form of true/false, multiple choice, short answers or numerical questions were assigned, depending on the chapter content. The majority of the questions were of problem solving type that involved calculation with pre-determined specific units and significant figures of the numerical answers. Two attempts were allowed for each question and the students received immediate feedback if they failed in their first attempt. Positive responses were provided if the students were successful in answering the questions. However, there was no time limit to answer each question as the students were given sufficient time to read and understand the questions, and to answer calmly at their own pace.

Since the quizzes were not part of the students' assessment, it was considered as an independent study at the students' own will. Hence, the quizzes were designed with a due date of two weeks, in order to encourage the students to have a constant revision and to avoid last-minute cramming before examination.

### *4.4 Open Forum/Chats*

Open forum serves the purpose of allowing a student to post his/her questions or doubts and can be viewed by their fellow peers. This allows the lecturer to disseminate the answered questions to the whole class without repeating in the classroom. Hence, each of the chapters was constructed with their very own Open Forum. Students were also encouraged to use the chat function that facilitated live discussion and interaction with their instructors and peers.

### *4.5 Latest news Message/Calendar*

Another interesting feature of Moodle is the function on the right of the webpage which allows the lecturers to post any new messages. It also comes with the list of recent activities so that students can keep-track with any updates. General announcements such as due date of assignments, examination dates and venues, replacement classes etc. were posted at this section and these were linked to the students' email accounts, so that they were notified of every update.

## **5. Methodology**

### *5.1 Participants*

The evaluation on student perception was conducted on 124 students enrolled for Chemistry B in the foundation engineering programme during the spring semester 2012 and the investigation spanned for one whole semester. The students had completed their Chemistry A by the time they enrolled in the foundation engineering program in 2011.

This study used the survey approach to understand learners' attitudes toward learning chemistry through Moodle application. Survey questions were adapted from Bromham and Oprandi (2006) and Buzzetto-More (2008), which determines the satisfactory level of the

students using Moodle. The questionnaire was distributed to the students after they had used the Moodle e-learning system for two months. Participants were asked to complete the questionnaire that included demographic information and two other sections. All 124 students answered the questionnaire but 24 responses were incomplete. Therefore, this study group comprised of 100 students.

## 5.2 Measurement

The data for this study were based on students' experiences taking a Moodle assisted online learning unit offered by the Foundation Engineering of the UNMC at its website, <http://moodle.nottingham.ac.uk/course/view.php?id=6743>. The data were gathered by means of paper-and-pencil survey. The following depicts the content of the questionnaire.

The questionnaire had 3 sections. Section A contained 9 items related to the respondents' background information. Section B with 19 items was designed to gather required information on the respondents' perception on Moodle learning unit. All the items were slated on a 5-point Likert-type scale of strongly agree, agree, neutral, disagree and strongly disagree, and scored 5 to 1, respectively. Section C was about their preference of learning approaches, i.e., face-to-face or blended learning environment. One open-ended question was included to let the respondents/participants explain further about their preference. All participants took approximately 10 minutes to complete the survey. The data gathered were subjected to basic descriptive statistical analysis using frequency counts and percentages.

## 6. Results and Discussion

The characteristics of the participants are summarized in Table 1. Data from 100 students (26 females and 74 males) were used in the analysis as indicated in Table 1. The overall sample was not evenly distributed by nationality. Eighty six students were Malaysian while the rests were international students. Only five students possessed very little or did not have any chemistry knowledge at all while the rest had high-school chemistry knowledge.

With respect to frequent access of the Chemistry B Moodle webpage, the responses showed that most students visited the webpage at least once a week or every other week in a semester while thirty six students visited the webpage only once a month or rarely. The low access rate might have been due to no grading assessment involved in the webpage. According to the survey of Murray et al (2012) on students' interaction with online course content, students tend to participate in the online activities with one specific reason, i.e., the grade that determines their course performance. In other words, the access rates are associated with the grading of online assessment involved in the course.

**Table 1. Participants' demographic information**

Variables	Frequency
<i>Gender</i>	
Male (1)	74
Female (2)	26
<i>Nationality</i>	
Malaysian (1)	86
International Student (2)	14

<i>Prior Knowledge on Chemistry</i>	
Yes (1)	95
No (2)	5
<i>How often did u visit the course webpage?</i>	
Daily (1)	1
Several times a week (2)	4
Once a week (3)	33
Every other week (4)	23
Monthly or rarely (5)	36

### 6.1 Respondents' Perceived Satisfaction of the Online Units

Students' satisfaction with the Moodle application was divided into three main sectors which are satisfaction with the course content; satisfaction with assessment style; and satisfaction with the quality of their learning experience. Students' perception and expectation were also explored to give additional perspectives on the Moodle implementation. At least two questions were set for each of these sections and they were not arranged in any particular order to gauge the consistency of the students' responses.

Overall, the majority of the students were satisfied with the online lecture notes as well as the content of the course website, as shown in Table 2. A big portion of the students also gave positive responses about the online self-study quiz/exam with instant feedback. However, only 39.6 % of students agreed that the assessment section was easy to use. The majority of the students chose 'neutral' probably due to the fact that they had little or no experience of using Moodle. Nevertheless, many students still expressed their personal preference to the traditional classroom-based assessment modes (38.6% chose 'agree' and 17.8% chose 'strongly agree' for Q13).

**Table 2. Percentage distribution and mean of respondents' perceived satisfaction of the online learning units (N=100)**

Items	SD	D	N	A	SA	Mean	Sd
Q1. I was satisfied with the content available on the course Website.	3.0	5.0	33.7	43.6	13.9	3.61	0.89
Q2. I was satisfied with the online lecture notes included on the course Website.	3.0	5.0	24.8	55.4	10.9	3.67	0.85
Q10. I found the exam section easy to use.	1.0	7.9	50.5	33.7	5.9	3.36	0.76
Q12. I liked that I received an instant grade after taking an online quiz/exam.	2.0	5.9	28.7	39.6	22.8	3.76	0.94
Q13. I prefer to take my quizzes/exams in person.	1.0	7.9	33.7	38.6	17.8	3.65	0.90
Q14. I enjoyed the portion of the course on Moodle.	1.0	5.9	40.6	43.6	7.9	3.52	0.77
Q16. I was satisfied with Moodle in regards to the quality of my learning experience.	1.0	8.9	44.6	36.6	7.9	3.42	0.81
Q18. I would like to see course Websites added to all of my other courses.	1.0	7.9	28.7	43.6	17.8	3.70	0.89
Q19. I believe that course Websites will play an important role in college education in the future.	3.0	4.0	30.7	45.5	15.8	3.68	0.89
						3.60	0.86

**Key:** 5= SA-Strongly Agree, 4= A-Agree, 3=N-neither agree nor disagree, 2= D-Disagree, 1= SD-Strongly Disagree

Many students enjoyed the Moodle application in their course (43.6% agreed and 7.9% strongly agreed), which they believed improved their quality learning experience (36.6% agreed and 7.9% strongly agreed). However, some students seemed to be undecided about the quality of learning experience using Moodle. Probably these students needed more time to be fully adapted to this new blended learning approach.

In general, most of the students responded positively about the employment of Moodle as a supplemental learning platform to all their courses (43.6% agreed and 17.8% strongly agreed). They believed that the application of e-learning would play an increasingly important role in college education in the future (45.5% agreed and 15.8% strongly agreed). These findings are depicted in Figure 3.

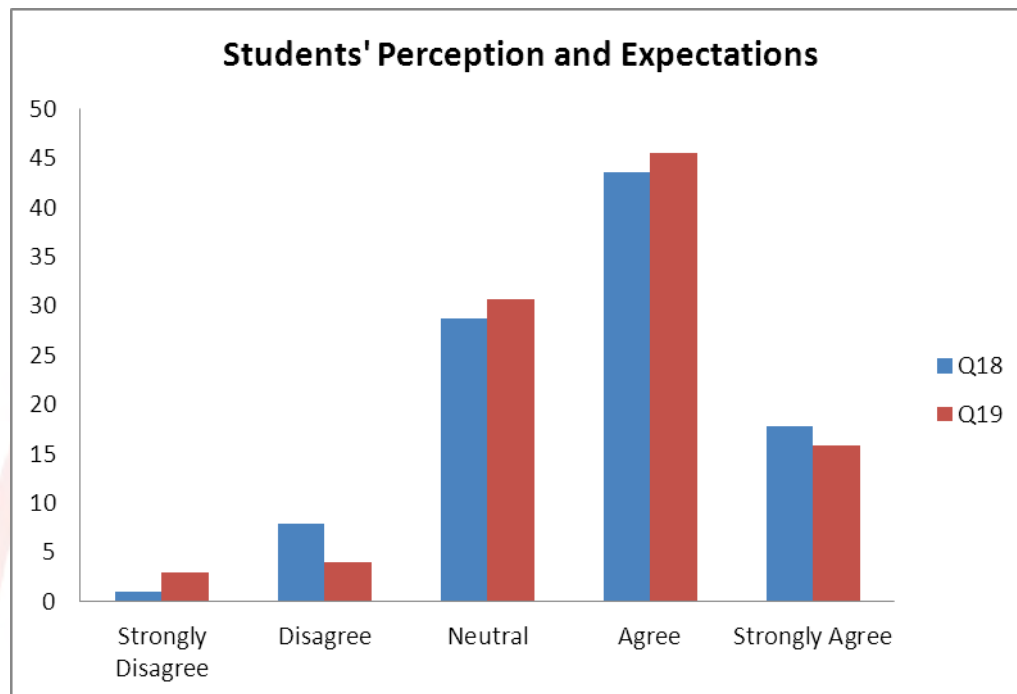


Figure 2: Students Perception and Expectation on Moodle Application

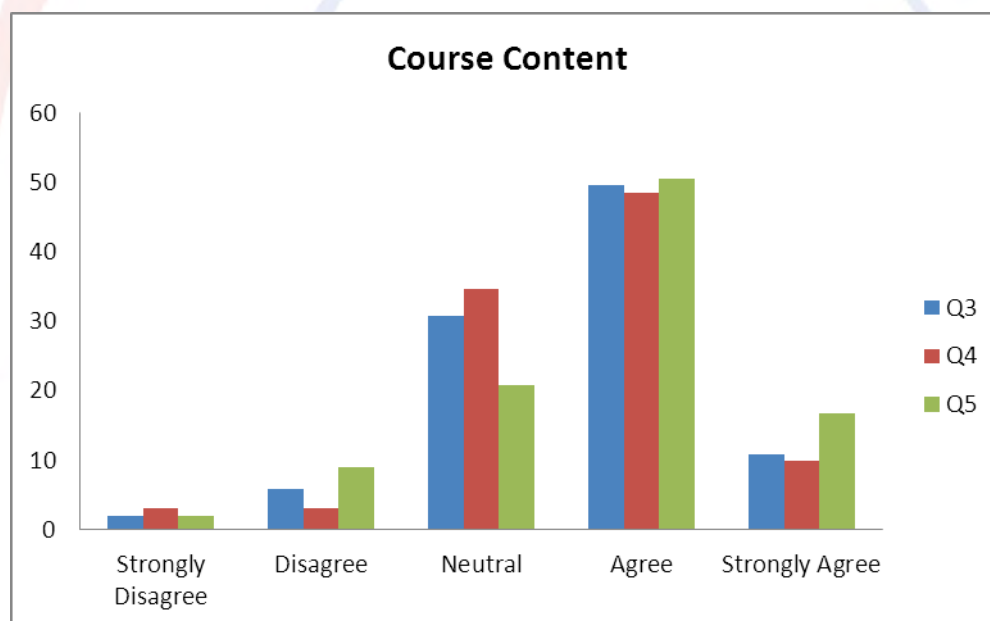
### 6.2 Respondents' Perceived Benefits of the Online Units

Students' benefits can be determined based on their perception, whether they find the resources given and the experience gained valuable. Table 3 indicates that many of the respondents perceived that the online lecture notes and the links provided were very useful and valuable (49.5% agreed, and 10.9% strongly agreed with Q3; 48.5% agreed and 9.9% strongly agreed with Q4). A significant proportion of the respondents (67.3 %) agreed that the course website was a great place for the instructor to place handouts as against 10.9 % who did not agree. In general, the students valued the overall pattern of access to teaching materials and additional resources through Moodle, as can be seen in Figure 4.

**Table 3. Percentage distribution and mean of respondents' perceived benefits in terms of access to valuable resources (N=100)**

Items	SD	D	N	A	SA	Mean	Sd
Q3. The online lecture notes were a valuable resource.	2.0	5.9	30.7	49.5	10.9	3.62	0.84
Q4. I found the links contained on the course Website valuable.	3.0	3.0	34.7	48.5	9.9	3.60	0.83
Q5. The course Website is a great place for the instructor to place handouts.	2.0	8.9	20.8	50.5	16.8	3.72	0.92
						3.65	0.86

**Key:** 5= SA-Strongly Agreed, 4= A-Agreed, 3=N-neither agree nor disagree, 2= D-Disagree, 1= SD-Strongly Disagree



**Figure 3: Students' perceived benefits in terms of access to valuable resources**

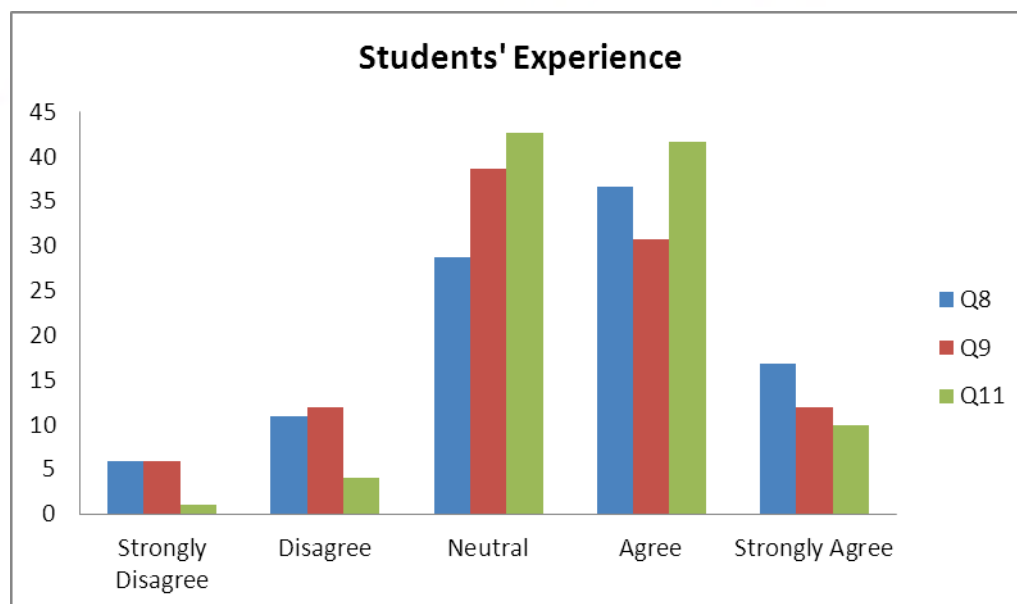
It is also important to determine whether the students gained any benefits based on their experience using Moodle for the whole semester. The most popular feature noted in this study was taking the online assessment. 53.4 % of the students took the online quizzes, and 42.6 % agreed/strongly agreed that the self-test quiz was convenient (Table 4). It is however observed that only 36 % indicated that Moodle stimulated their desire to learn. This could be due to the fact that these foundation students were experiencing a transition period from a school education to a higher learning education. The students are yet to adapt to a more self-study culture that are normally practiced in higher institutions, and thus the lack of interest was observed. However, 43.6 % viewed Moodle as a reliable communication tool and the majority of them also found that the online assessment worked reliably during their visit.

**Table 4. Percentage distribution and mean of respondents' perceived benefits in terms of their experience using Moodle (N=100)**

Items	SD	D	N	A	SA	Mean	Sd
Q8. I took the online quizzes/exams.	5.9	10.9	28.7	36.6	16.8	3.48	1.08
Q9. I found taking exams online convenient.	5.9	11.9	38.6	30.7	11.9	3.31	1.03
Q15. The Moodle portion stimulated my desire to learn.	2.0	10.9	50.5	30.7	5.0	3.26	0.80
Q17. Moodle provided a reliable means of communication.	1.0	11.9	42.6	38.6	5.0	3.35	0.80
Q11. The quiz/exam worked during my visit.	1.0	4.0	42.6	41.6	9.9	3.56	0.77
						3.39	0.90

**Key:** 5= SA-Strongly Agreed, 4= A-Agreed, 3=N-neither agree nor disagree, 2= D-Disagree, 1= SD-Strongly Disagree

Overall, most students believed that they had gained beneficial experience when using the online assessment tools in Moodle, which can be seen in the quantities of 'agree' shown in Figure 4, in terms of students' experience using Moodle online assessment.



**Figure 4: Students' perceived benefits in terms of students' experience using Moodle online assessment**

### 6.3 Interaction between Students and Lecturer

This study sought to determine the interaction between students and lecturer outside the classroom. On the frequency of checking the mailbox, 57.4 % of the students agreed that they checked their mailbox regularly, while 14.8 % of the respondents were in disagreement category and 26.7 % remained neutral, as observed in Table 5. Furthermore, only a small number of respondents emailed their lecturer through the course website. This implies that students were keen on updates from the lecturers. However, they were less interactive with their lecturer and were waiting to be fed with more information and learning materials. A one way communication is clearly observed in this scenario. Moreover, the assessments designed demanded more self-study approach instead of an interaction-based approach with the lecturers.

**Table 5. Percentage distribution and mean of respondents' perceived interaction between students and lecturer (N=100)**

Items	SD	D	N	A	SA	Mean	Sd
Q6. I emailed the instructor through the course Web-site.	10.9	21.8	47.5	15.8	3.0	2.78	0.95
Q7. I regularly checked my mailbox.	7.9	6.9	26.7	36.6	20.8	3.56	1.14
						3.17	1.05

**Key:** 5= SA-Strongly Agreed, 4= A-Agreed, 3=N-neither agree nor disagree, 2= D-Disagree, 1= SD-Strongly Disagree

### 6.4 Preference with Delivery Methods

Most respondents preferred a combination of traditional and web courses over face to face class (Figure 5). To further illustrate their preference, students were allowed to voice out their opinion at the end of the questionnaire. Comments received from them were generally very positive and encouraging about the blended learning environment. Some of the comments are as follows:

- 1) Face to face classes are more effective for learning but web courses are convenient for self-study.
- 2) More flexible learning. Different student have different learning style. Can cater for different learning styles.
- 3) Two is better than one. I can have more input on the knowledge of the course.
- 4) Lecturer's explanation is better to have in classes while answer for tutorials can be posted on website.

Thus, these feedbacks were consistent with students' expectation on Moodle implementation, i.e., they viewed e-learning in courses as a supplemental learning platform to traditional classroom practices. The finding was also similar to what was reported in the 2005 EAR report (Caruso & Kvavik, 2005) in which students' preferred moderate support of educational technology in their courses and they were still pleased with the face to face classroom engagement.

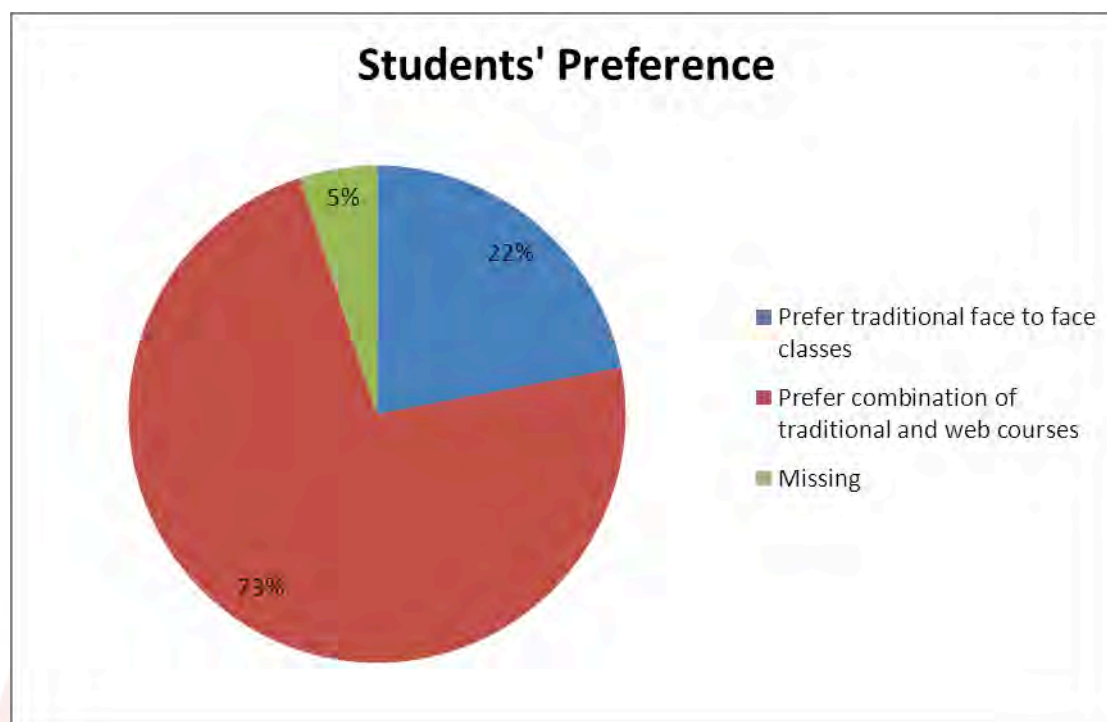


Figure 5: Students' Preference on delivery methods (N=100)

## 7. Limitations and Future Prospects

The study focused only on a minority of students from the foundation engineering programme. A larger scale could have been adopted. Nonetheless, the study conducted is a good stepping stone to further expand the sample size to include undergraduate students from various disciplines. With a larger sample size and a variety of students, a comparison study of students' perception and dependence level on Moodle to aid their self-study could be investigated. This will also allow the utilization of more sophisticated statistical analysis.

Another limitation of the study is the high frequency of respondents taking the "neutral" stand. By changing the 5 point Likert scale to 4 points Likert scale, this would best enable respondents to express their perception more accurately. As an alternative, weight measures could also be included to the Likert scale in order to determine the importance of each given statement. By multiplying the weight and the 5-point score of various items in Likert scale, the overall trend can be easily computed (Ten et al., 2008).

## 8. Conclusion

University teaching and students' learning are moving through transition processes that use education technology in support of academic work. There exists a greater acceptance of the online mode of instruction as an adjunct to learning. Nevertheless, the results of our work showed that most students preferred a moderate use of e-learning in their courses. Their positive attitude was observed towards the model of blended learning approach, and Moodle platform did create a positive impact on students' learning experiences in terms of the accessibility of learning materials and the support of online assessment activities. Students reported that the most valuable benefits of using Moodle platform in learning chemistry were the convenience of accessing the course materials and completing the online assessment tasks. Overall, the majority of the students perceived the use of course website as an opportunity to enhance their academic experience.

Although the students agreed that the hybrid learning provided them with the needed assistance, one of the drawbacks observed was that this method of delivery was prone to become a one-way communication. Responses to this study showed that the number of the students' email correspondences to the lecturers were minimum. The students were expecting to be "spoon-fed" with information, announcements and notes. Thus, a more interactive learning is needed to promote a two-way communication. Communication tools such as forum discussion and online chat room have the features that create interaction with instructors and among the peers. However, as mentioned earlier in the study, most students are likely to participate in the learning practices only if the activities are considered as part of the evaluation of their academic performance. It is therefore necessary to assign grading procedure in e-learning activities to increase students' participation. With the improvements at these loose ends, Moodle application in Chemistry will be an invaluable and imperative tool for the instructors as well as for the students.

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*German and Japanese Education in the Shadow - Do Out-of-School Lessons Really  
Contribute to Class Reproduction?*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

Considering the great impact the first PISA-results caused in Germany and Japan, this study seeks to provide an explanation for the continuous higher achievement rates of students in the PISA-winner country Japan compared to their German peers. Another great difference between the two participants that was detected in PISA is the correlation between students' social origin and educational achievement, which is still very strong in Germany but not in Japan. The author assumes the reason for these differences lay outside the formal school system, in the sector of shadow education. The so called *Juku*-industry in Japan provides out-of-school lessons that seem to enable all Japanese students to achieve top results regardless of their social origin. In Germany the increased use of *Nachhilfe* is seen as an indicator for the downfall of the compulsory school system and a problem that seem to widen the gap in education levels all the more. If in Japan almost every household regardless of its social status sends its children to out-of-school classes, the assumption that people do invest in further education in terms of extra classes at *Juku* believing this will have a neutralizing effect on disadvantaged family background suggests itself. Consequently the author intends to refute the prevailing assumption of researchers in Germany and Japan stating that out-of-school lessons just contribute to the reproduction of class structure. Using secondary data as well as PISA-data the author wants to show that shadow education helps to counteract educational disadvantages through the provision of various educational opportunities.

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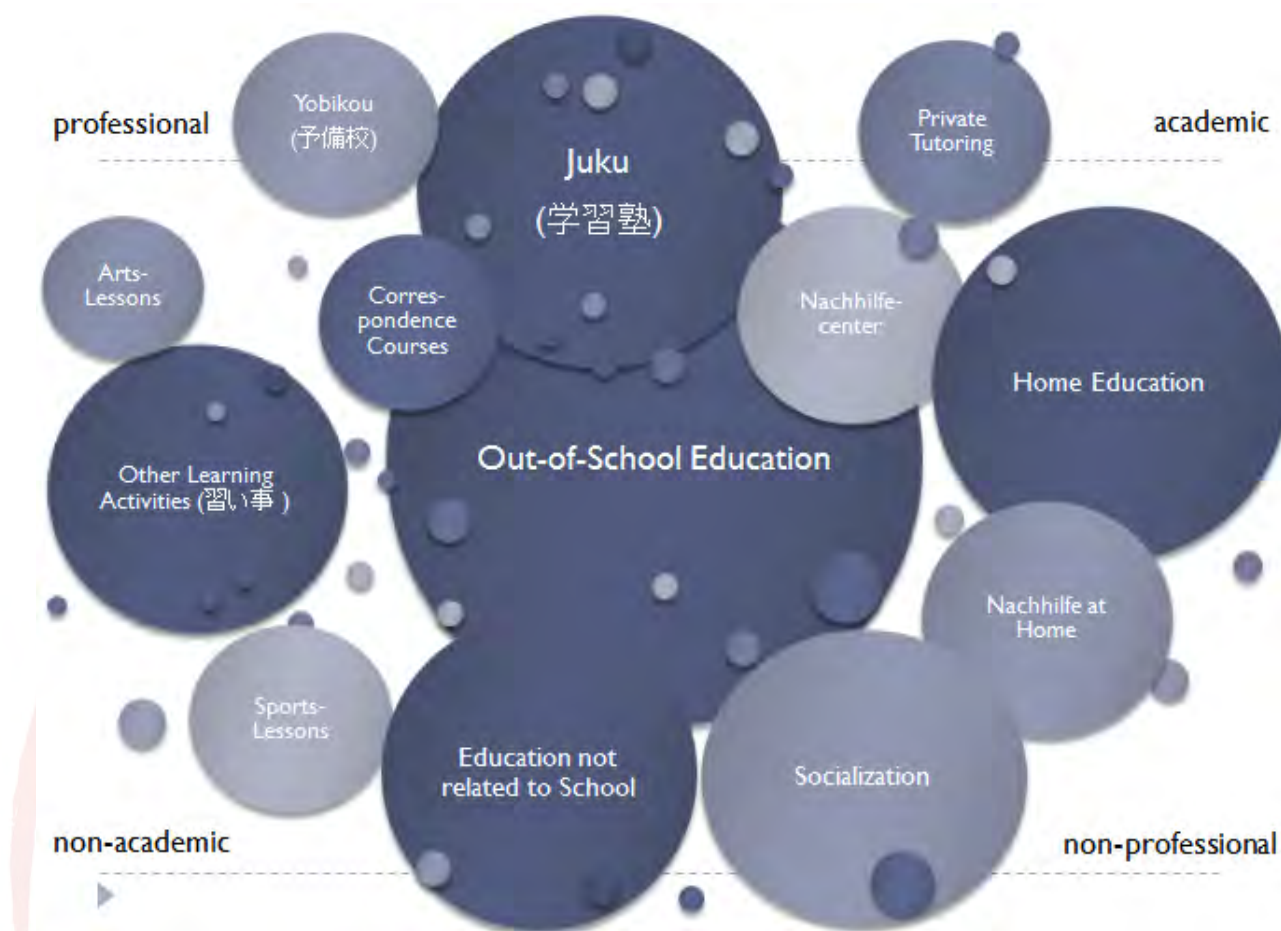
## 1. Introduction

The publishing of the first results of the *Programme for International Student Assessment* (PISA) caused a public, political and scientific debate about education in Germany. Germany's hope for a top position was unfortunately not a reality. Instead the OECD certified the German students at best in the middle field of performance within the study. In addition, students' social origin correlated strongly with educational achievement in Germany (Stanat, et al., 2002, p. 12). German researchers began to ask how Germany's educational system could have performed so poorly amid other OECD countries and what was done differently in PISA winner countries such as Japan? Not only were Japanese students able to achieve top results. The influence of students' social origin on the performance at PISA was the lowest in Japan amid the participants (Ibid., p. 12). The Japanese seem to have found a way to neutralize disadvantaged family background through education enabling all students to achieve a high level of education regardless of the wealth of their parents. Considering that the formal school system possesses no apparent significant differences that could clearly explain the Japanese success over Germany (von Kopp, 2000, p. 181f.) another explanation had to be found. Not only can the formal school system be held responsible for the success of its students. Also education outside of school has to be acknowledged to understand the Japanese success (Schümer, 1999, p. 46). These responsible out-of-school lessons are called shadow education.

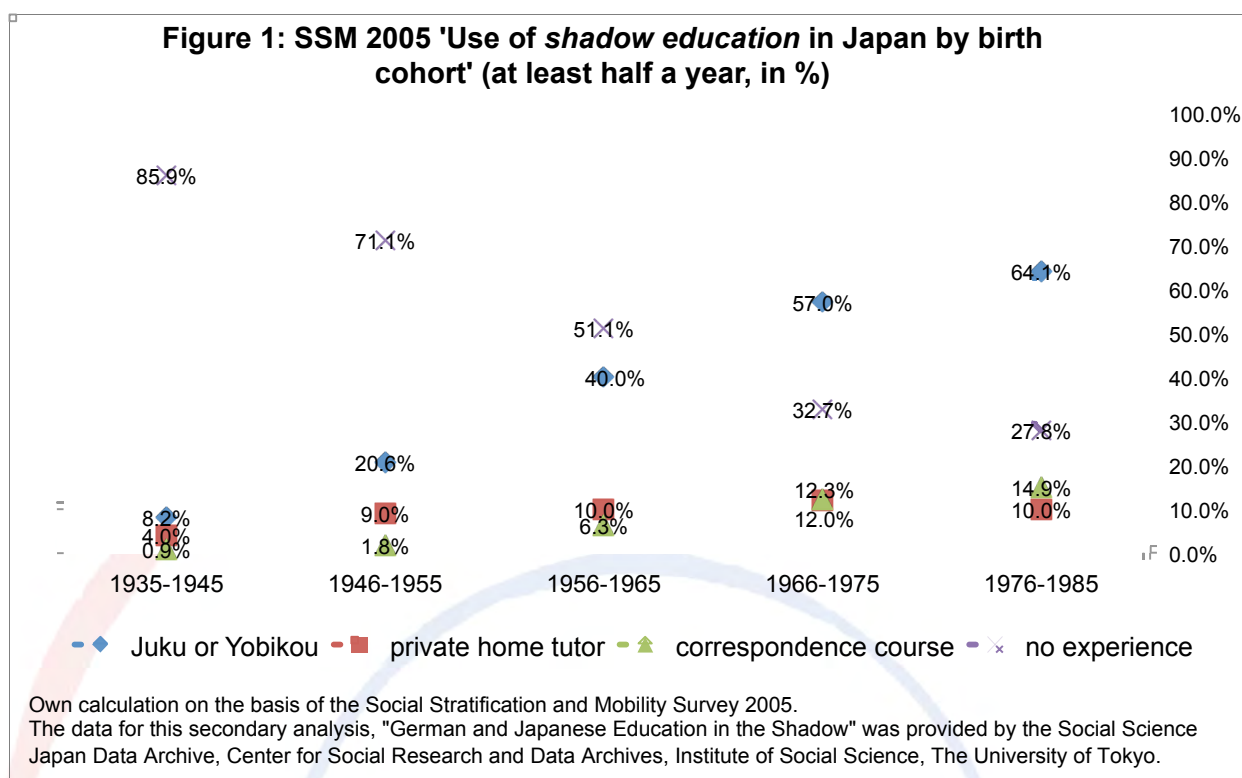
## 2. Shadow Education and its Implications

A shadow education system is an educational system of private institutions and organizations operating alongside the formal school system. In comparison to non-professional forms of shadow education, such as home education given by parents, all forms of professional shadow education (scheme 1) as taught by (non-)school teachers has to be paid for and is related to school education. In the following only such forms of shadow education will be considered, which are academic and professional, also assuming that they have to be paid for. Mostly this kind of shadow education is found at private institutions offering private tutoring, enrichment as well as remedial courses or simply out-of-school classes providing help with homework or the preparation for tests and exams. Most of the providers do also offer courses that let students expand their knowledge beyond that of their peer's. As recent research indicates, these out-of-school lessons do indeed have a positive effect on school achievement (Bray, 1999; 2009; Dettmers, Trautwein and Lüdtke, 2009; Dohmen, et. al., 2008; Jäger-Flor and Jäger, 2009; Klemm and Klemm, 2010; OECD, 2011).

Scheme 1: Different Forms of Shadow Education



Today shadow education can be found all around the globe (Bray, 1999; 2009; 2010). Particularly in Japan the use of out-of-school classes has a long tradition. After the great *Juku*-Boom (Rohlen, 1980) in the 1970<sup>ies</sup> as a result of the extraordinary high increase of educational aspirations of the Japanese population in the course of educational expansion, the Japanese shadow education system expanded steadily (Haasch, 2000, p. 195; Dierkes, 2010a, p. 26), as figure 1 shows. Here instead of the Japanese government, which did not met the educational needs of worried parents, private operators promised help through the provision of supplementary classes at their educational institutions, the *Juku* (Haasch, 1979, pp. 43, 45f.; Drinck, 2002, p. 263). Currently almost every student in Japan is taking or has taken classes at *Juku* (MEXT, 2008, p. 12).



Consequently the so called *Juku*-industry, as this national supplemental private tutoring entity external to the formal education system is entitled, provides one possible explanation for Japan's high performance results in international educational research studies, such as PISA.

Nowadays the phenomenon of rising demands for private supplementary education has also increased in most western countries, such as Germany. In Japan, *Juku*-owners promote that shadow education will lead to the superior results of the Japanese youth compared to compulsory school education (Dierkes 2010a, p. 25). In Germany, comparable programs known as the *Nachhilfe*-institutions offer the same promises that operators of private educational institutions make all over the world: they lure students with the promise for better pedagogical concepts that give parents a way out of an educational misery – successfully as it seems. Especially since the 1990<sup>ies</sup> the use of professional out-of-school lessons in Germany has strongly increased (Guill and Bensen, 2011, p. 307; Mayr, 2010, pp. 10f.). The German *Nachhilfe*-system has expanded and became an influential factor educationally as well as economically. Various conservative estimates suggest that around 1.1 million German students yearly use *Nachhilfe*. This industry has approximately already a turnover up to nearly 1.5 billion Euros a year (Klemm and Klemm, 2010, p. 20). Although these numbers may seem impressive, the German *Nachhilfe*-system with its approximately 3.000 to more than 4.000 *Nachhilfe*-branches is still in an early stage of development compared to the Japanese *Juku*-system that generates about \$12 billion a year (Dawson, 2010, p. 16). While in Japan most shadow education has been professionalized and is mostly taking place at *Juku*, in Germany other forms of shadow education are still predominant. Only about 30% of all shadow education in Germany takes place at *Juku*-like institutions (Dohmen, et. al., 2008, p. 53). In comparison, in Japan there are even more *Juku* (almost 50.000) today than formal schools combined (about 39.000) (Benesse, 2007, p.2). This indispensable addition to the public compulsory school system has become influential in such a way, that it is perceived the Japanese formal school system alone cannot prepare students for their later life course in a proper way anymore (Sato, 2005). In promotion with this belief, local officials have advocated for the *Juku*-schools as positive alternatives and actually pursue partnerships with those institutions to improve their learning opportunities (Dierkes, 2010b). The fear, compulsory

schools will not be able to sufficiently educate children anymore is already present in Germany, too. In general, in Germany students needing *Nachhilfe* is seen as a problem and an indicator for the downfall of the compulsory school system. The idea the compulsory school system is no longer able to equip students with the needed armamentarium to succeed in school and thereafter is a national issue of concern. In fact, the high costs for private lessons seem to intensify social disparities and widen the gap between rich and poor all the more, as some studies indicate (Schneider, 2004/2006). While in Japan all social classes seem to be able to use the expensive out-of-school education, this is not the case in Germany. Whether it really are the costs that some German parents cannot afford, the unwillingness to pay for supplementary education for their child, or it is the nescience about what shadow education can possibly offer, has not been sufficiently researched yet. As social scientific research on education has proven, primary as well as secondary effects of origin have a great influence on educational pathways. Parents do decide on the educational trajectory of their child regarding to their socioeconomic capital considering costs of education depending on the estimated returns to education (Becker and Lauterbach, 2010, p. 15ff.). If in Japan almost every household sends its children to *Juku*, parents might indeed think that an investment in further education will pay off for their children. This would explain a low achievement range between students with high and low social origin.

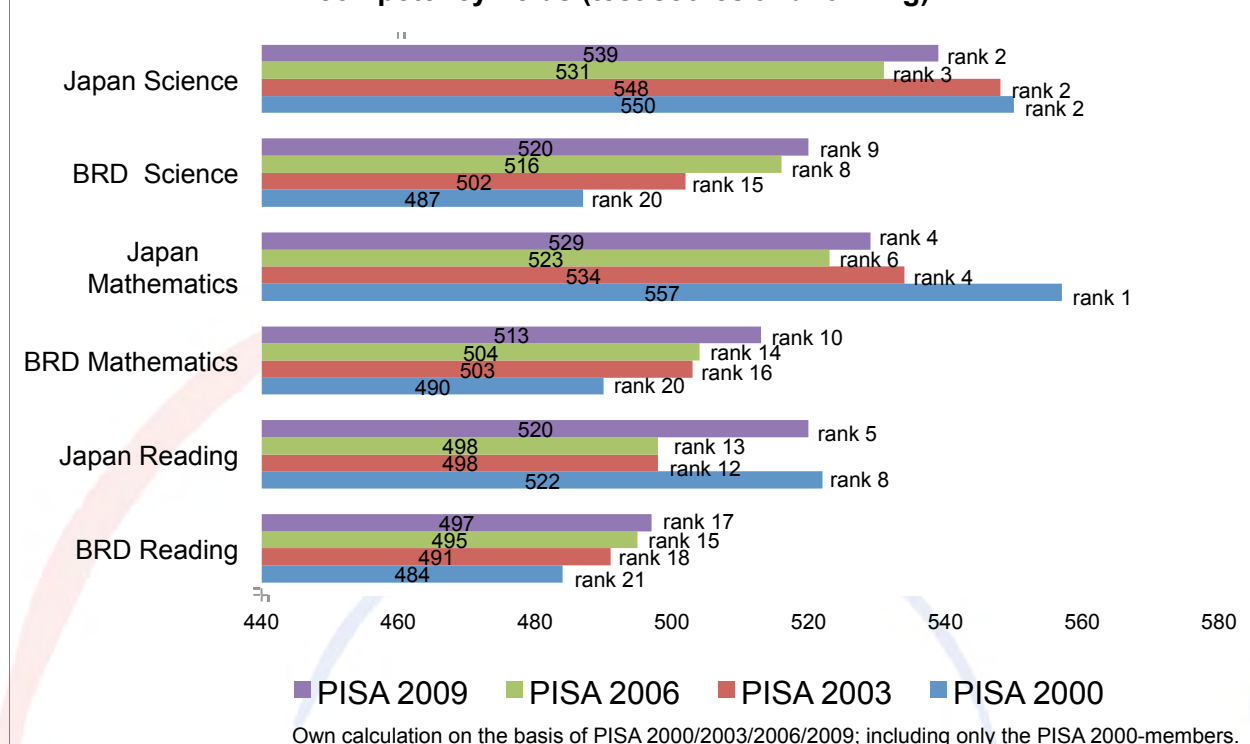
### **3. The Cause of the Achievement Gap: The Use of Professional Shadow Education**

Before we can discuss the question if out-of-school lessons just contributes to the reproduction of class structure or if shadow education may in fact counteract educational disadvantages through the provision of various educational opportunities where needed, the theoretical framework of such a thesis has to be determined. Of greatest interest for this work is to first prove if Japanese students are constantly achieving better results compared to their German peers. Therefore, in the following some results of the most popular international student achievement study PISA will be presented.

#### *3.1. Educational Achievement in International Comparison*

After Germany has been absent from its participation in international student assessment studies for nearly 30 years, the empirical educational research in Germany was rediscovered as a powerful means for educational policies in the late 1990<sup>ies</sup> (Arnold, 2001, pp. 161ff.). Unfortunately, the hoped for top-position within the PISA study of the year 2000 remained a dream. On the contrary, a comparatively low performance was attested (figure 2). As we can see, it seems that Japan's students achieve always significantly higher results in all fields of performance within the PISA study than their German peers. Over the last decade, German students never reached the competency levels of their Japanese contrahents. In the PISA survey of the year 2000 Japanese students achieved rank 1 in Mathematics, rank 2 in Science and rank 8 in Reading, showing nearly equally good results in 2009 (ranks 4, 2 and 5 respectively). German students on the other hand did not achieve comparable results. With rank 20 in mathematics and science as well as rank 21 in reading, Germany made it barely to the lower middle field in international comparison. Although the results for Germany were getting better over the years (2009: mathematics rank 10, science rank 9, reading rank 17) ranks within the PISA top field could not yet be achieved.

**Figure 2: PISA 2000 to 2009 'Positioning of Germany and Japan within the different competency fields (test scores and ranking)'**



### 3.2. Instruction Time

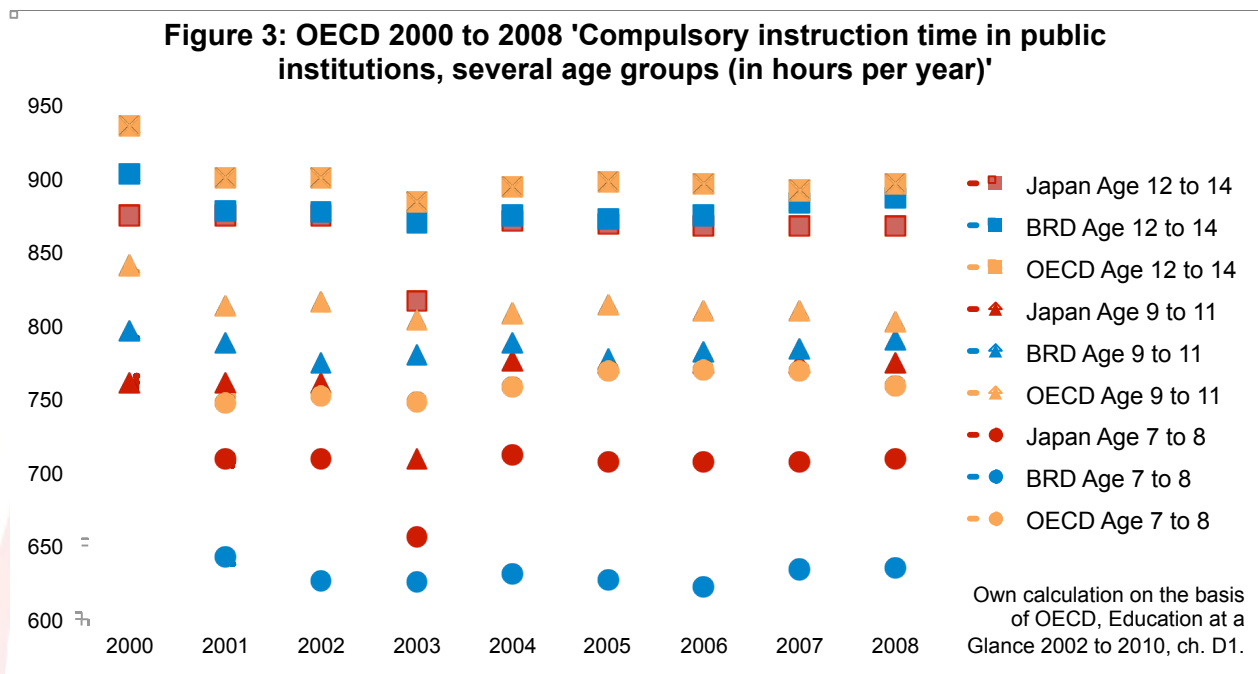
One could assume that the higher achievement rates of Japanese students may be mainly caused by longer study hours at school. As will be shown in the following, this is not the case. The quantitative learning time of students in Germany and Japan today does not differ very much or, at least, in Japan the time spend in school is not significantly higher than in Germany. Table 1 shows the medians of the number of class periods in both countries, also considering the three performance fields of the so far conducted surveys of the PISA study.

**Table 1: PISA 2000 to 2009 'Number of weekly class periods per subject'**

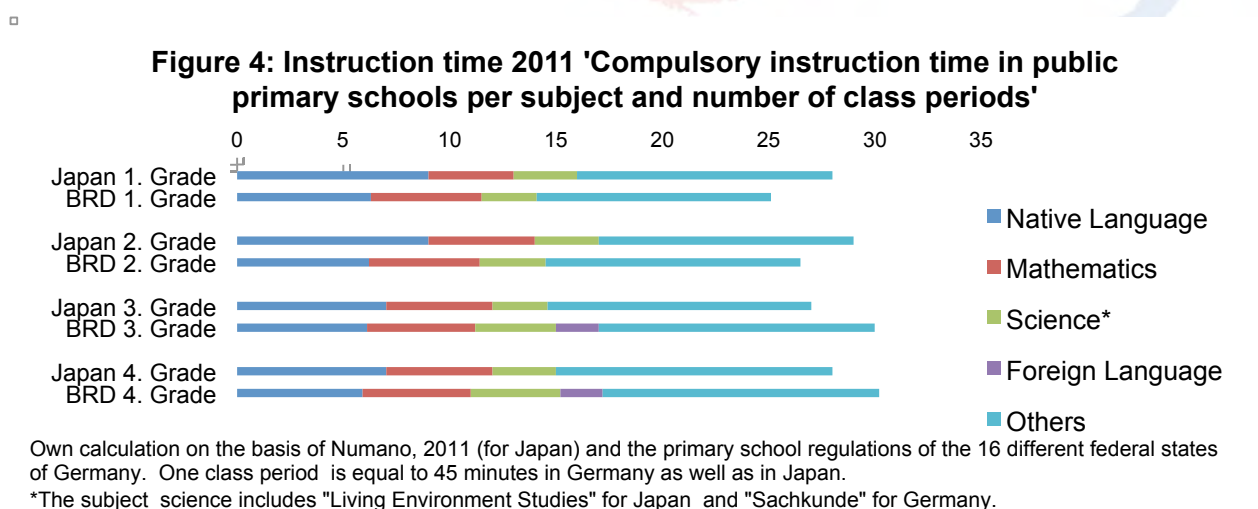
Country			native language	mathematics	science	all subjects
Germany	PISA 2009	valid	659798	656892	637595	636625
		missing	107194	110100	129397	130367
		median	4	4	5	32
	PISA 2003	valid	-	791269	-	707022
		missing	-	93089	-	177336
		median	-	4	-	30
	PISA 2000	valid	740064	738005	771749	-
		missing	86752	88811	55067	-
		median	4	4	4	-
Japan	PISA 2009	valid	1074149	1073655	1073630	1081283
		missing	39253	39748	39772	32119
		median	4	5	3	31
	PISA 2003	valid	-	1162943	-	1054582
		missing	-	77111	-	185472
		median	-	4	-	30
	PISA 2000	valid	1221428	1228372	1210646	-
		missing	225168	218224	235950	-
		median	5	5	4	-

Own calculation on the basis of PISA 2000/2003/2009.  
One class period is equal to 45 minutes for Germany and 50 minutes for Japan.  
The data of PISA 2006 is not considered, because no clear categories were defined.

Here a development in school learning time from PISA 2000 to PISA 2009 can be found. While in Germany the learning time increased in general from 30 (2003) to 32 (2009) class periods per week and in the field science from 4 (2000) to 5 (2009) class periods per week, it decreased in Japan in native language as well as in science about one class period from 5 (2000) to 4 (2009) and 4 (2000) to 3 (2009) respectively. Further data as conducted by the OECD might show if the learning time in Japan differs very much prior to ninth grade or not (figure 3).



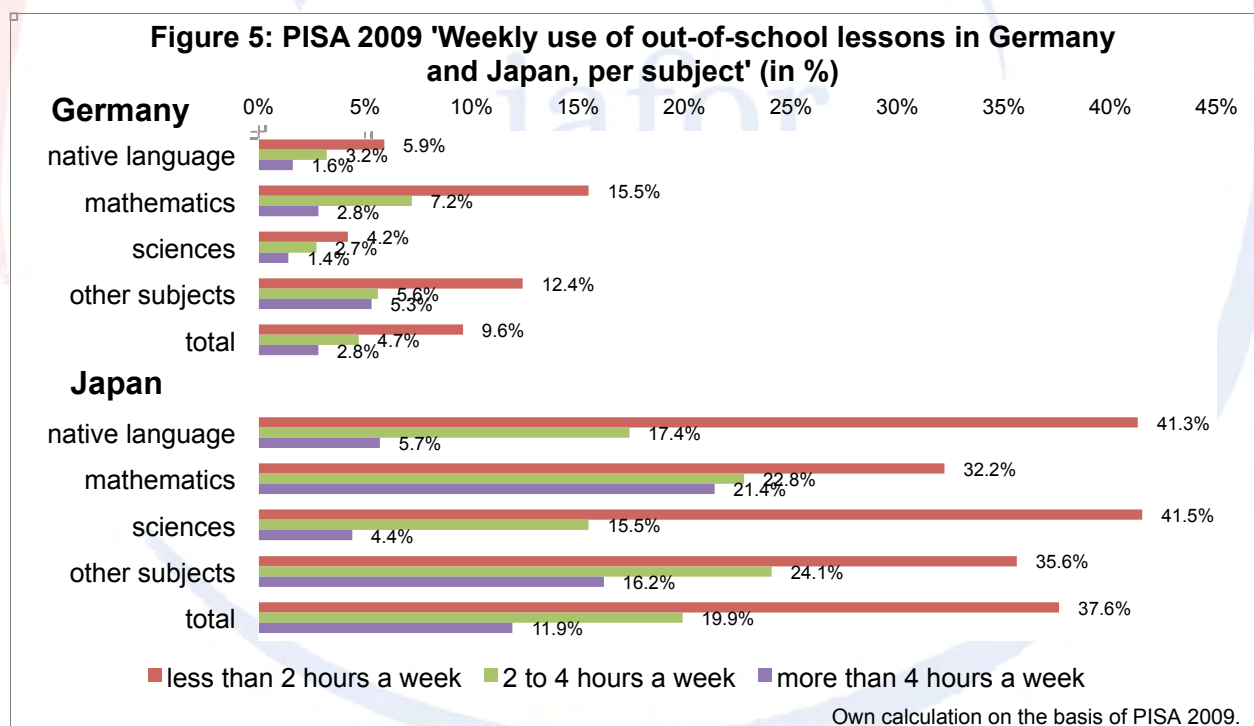
Although the overall instruction time seems to even be slightly higher in Germany for 9- to 14-year olds, a real difference in instruction time can only be detected for students of the age 7 to 8. Even the comparison of instruction time in the three subjects related to the three performance fields of PISA reveals no great differences between German and Japanese students aged 9 to 14 (own calculation on the basis of OECD, 2002 – 2010, ch. D1). A glance on public primary schools in both countries shows that there is a difference in the total number of school hours, but no huge differences in the time spend for the PISA related subjects. Only in native language real differences seem visual (figure 4).



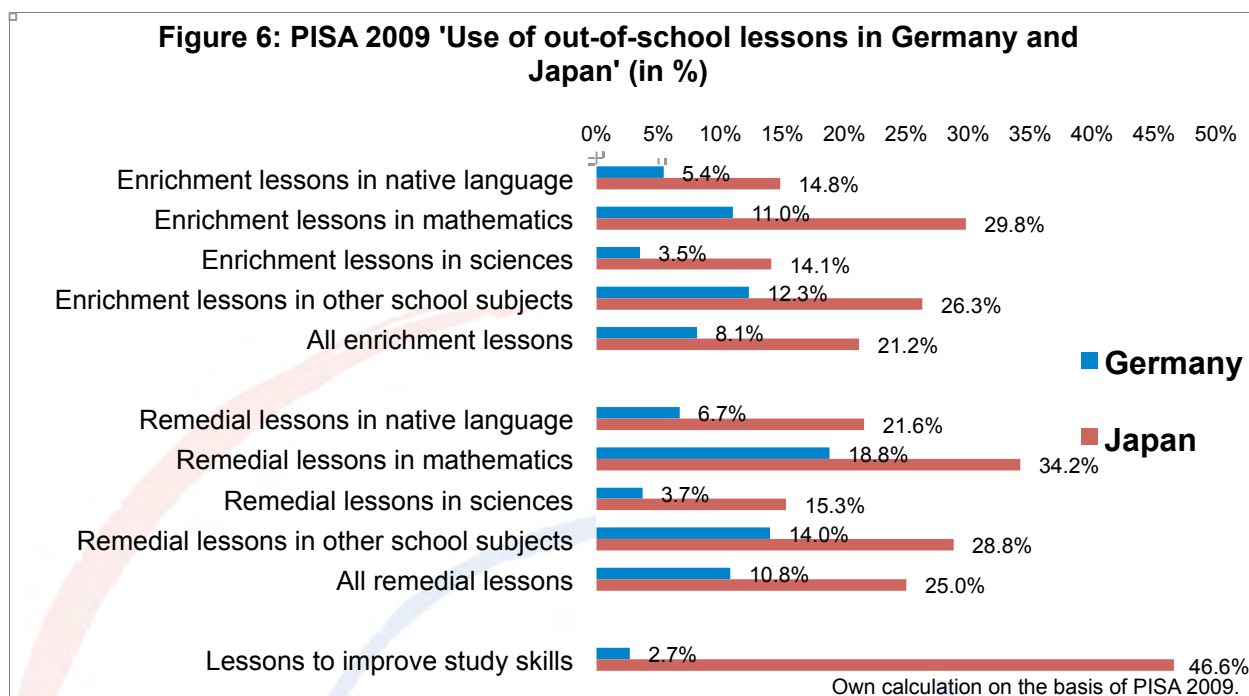
Due to the reformation of primary education in Japan as initiated in 2008, the time for instruction in school has increased for the first time in 30 years. Especially for native language and science

more time is now invested (Numano, 2011, p. 8). On the other hand, the curricula in Germany have also been reformed since the implementation of curriculum and school structure reforms after the great PISA-shock in 2001 (Entrich, 2008). In conclusion it has to be stated, that the differences between the amount of instruction time in German and Japanese schools in the three above mentioned PISA-related subjects are not convincing enough to serve as an explanation for higher achievement rates. The pure quantity of lessons is not that different in both countries, so a clear explanation for the much higher achievement rates in Japan is still missing. Although the Japanese school lessons might be of much higher quality than in other countries, as indicated by several studies (e.g. Stevenson and Stigler, 1992), this higher quality is also not possible without an investment in extra classes (Schümer, 1999, pp. 50ff.). Nevertheless, until today the Japanese *Juku*-industry has not been acknowledged for what it is: an indispensable addition to the public school system (e.g. OECD, 2012, p. 202). Although in Japan everybody seems to know that “Educational achievement is prompted by a broad societal and educational infrastructure, of which formal schooling is just one part.” (Tanabe, 2000, p. 125) In addition to that, higher quality is mostly found in primary schools rather than in middle or high schools (von Kopp, 2000, p. 181f.).

It seems more reasonable to assume that a possible explanation for the higher achievement-rates of Japanese students in PISA lays in the far greater use of out-of-school education in comparison to German students. Consequently Japanese ninth graders have to generally attend significantly more out-of-school classes than their German peers (figure 5).

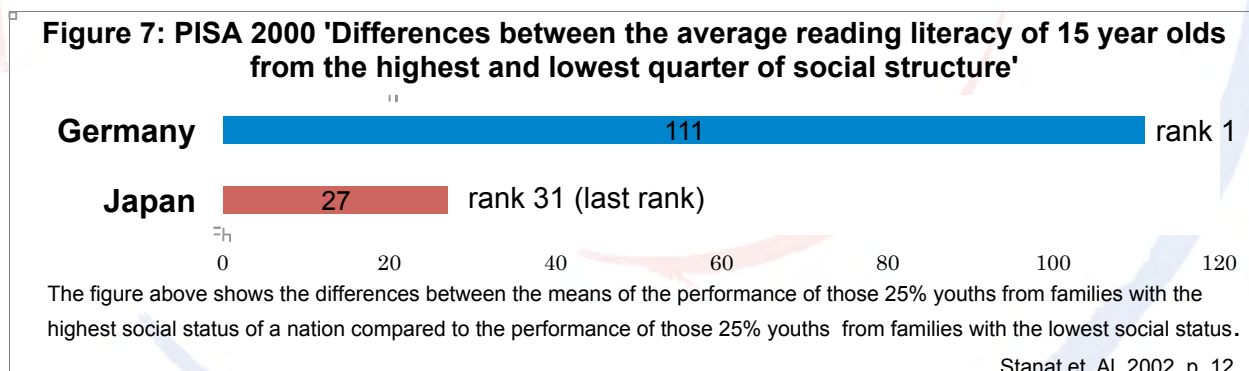


Assuming that out-of-school lessons contribute to students' educational achievement, this might be one explanation for the higher achievement rates of Japanese students compared to German students. The Japanese PISA-participants did generally use shadow education more often. As we can see, especially in the three PISA-related subjects native language, science and mathematics (!) out-of-school classes are attended to a high degree. As figure 6 shows, it even makes no great difference what kind of out-of-school education is used. Japanese students use more out-of-school supplementary education of all types. Especially the high percentage of lessons to improve study skills in Japan (46.6%) is impressive, whereas in Germany (2.7%) this seems to be an exception.



### 3.3. Social Origin and Educational Achievement

Besides the at best mediocre results of German students in PISA 2000, it became clear that the social origin of a student plays a significant role for the level of educational achievement in Germany. In Japan the correlation between social background and educational achievement is not very high (figure 7).



Here the range between the performance of students of the highest and lowest social quartile of society was the lowest in Japan (27 points), but highest in Germany (111 points) in 2000. Although the influence of social background in 2009 seems to be not as strong in Germany as it used to be in 2000, there still remains a big difference in comparison to the Japanese case. Here about 11% of resilient students can be found among the 25% of those youths from families with a low social status. Germany still belongs to the countries where students' learning outcomes are strongly determined by their social origin (OECD, 2012, p. 49). The reason for this nevertheless apparent improvement in Germany may be a result of reform measures undertaken in the different federal states of Germany. Also the increased use of shadow education may play a great role here. The lower range of performance in Japan may be caused by the higher use of shadow education in all social quartiles. Especially students with disadvantaged social origin may indeed be the ones to use out-of-school education as a means to counteract their family background.

Following leading sociological theories, scheme 2 illustrates what causes may underlie the motivation of different social classes to invest in shadow education.

Scheme 2: Social Status and Shadow Education

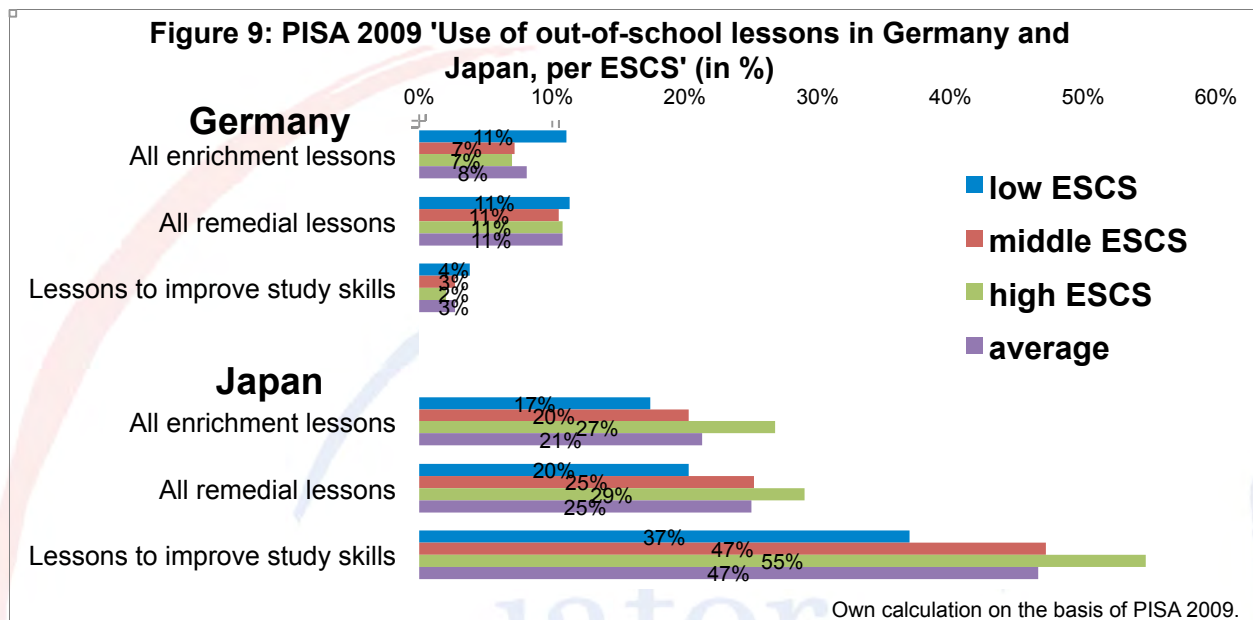


Through the above showed scheme possible causal relationships can be visualized theoretically before we translate them into our data analysis. As scheme 2 illustrates, families with a high social status are trying to preserve their status. To achieve this goal a high level of education has to be guaranteed for their children. Whether the school seems to not prepare their children enough for a successful life course or the children's grades are not what they ought to be, parents may be concerned in one way or the other. Therefore measures have to be taken that will assure a high status. Here shadow education, although it may seem as some kind of emergency solution, can serve as possible guarantor for educational success. The expenses for this supplementary education seem to be tacitly approved by those parents. In comparison, families with a low social status do have the greatest opportunities in education. On the other hand, those families may not even realize the importance of a good education. They might just not see the chance of social advancement. But even if they realize how important education can become for their children, they might not have the financial resources to take the opportunity that shadow education may provide for them. So this has to be proven in the following chapter. Middle class families have to worry about status preservation so they will not slide down the social ladder. On the other hand they can also grab the opportunity to climb the social ladder. Again education is the crucial factor for both scenarios. It becomes clear, how influential primary as well as secondary effects of origin are for educational pathways. Here shadow education can advance to become a chance to at least preserve the social status or even climb the social ladder. Of course parents are also measuring if further investments in education will pay off in the end (Becker and Lauterbach 2010, p. 15ff.). We will see what similarities and differences exist in Japan and Germany regarding the investment in shadow education. Consequently we will be able to make conclusions about the ability as well as the willingness of parents to invest in shadow education in Japan and Germany. Does social class play a role in who utilizes out-of-school classes in the two countries? Are really all Japanese students able to utilize out-of-school education regardless of their social origin? Some answers shall be given in the next chapter.

#### 4. Shadow Education as a Means to Counteract Social Disadvantages?

To verify our theoretical assumptions we will use PISA data of the year 2009. Therefore the dependent variables about the use of shadow education and the covariate, the index of the economic, social and cultural status (ESCS) to describe students' social status are included in the

analysis. The ESCS index was derived from PISA variables which are all related to family background: the highest parental education in years (PARED); the highest parental occupation (HISEI); as well as the number of home possessions (HOMEPOS). The variable HOMEPOS was used as an approximate measure of family wealth (OECD, 2006, p. 316). For our further research all data was weighted to get unbiased estimates of population parameters. To categorize the ESCS variable, it has been subdivided into three social classes: lowest 25% (lower class), highest 25% (upper class), and the 50% in between (middle class).



Surprisingly the greatest differences between social classes are detected in Japan (figure 9). Although all Japanese students use shadow education far more than German students, it seems as if the use of shadow education increases the higher the students' status gets. In comparison, in Germany more lower class students attend *Nachhilfe*-classes. Especially enrichment lessons are attended by more lower class students (11.1%) than higher class students (7%) in Germany. On the other hand, remedial lessons are nearly equally used by all students (about 11%). In general, the demand for remedial lessons is slightly higher than that of enrichment lessons in both countries.

Although high percentages of all Japanese students are able to use shadow education, it seems as if social strata have a greater impact on who uses shadow education in Japan than in Germany. It seems advisable to proof how much out-of-school lessons are attended per social class.

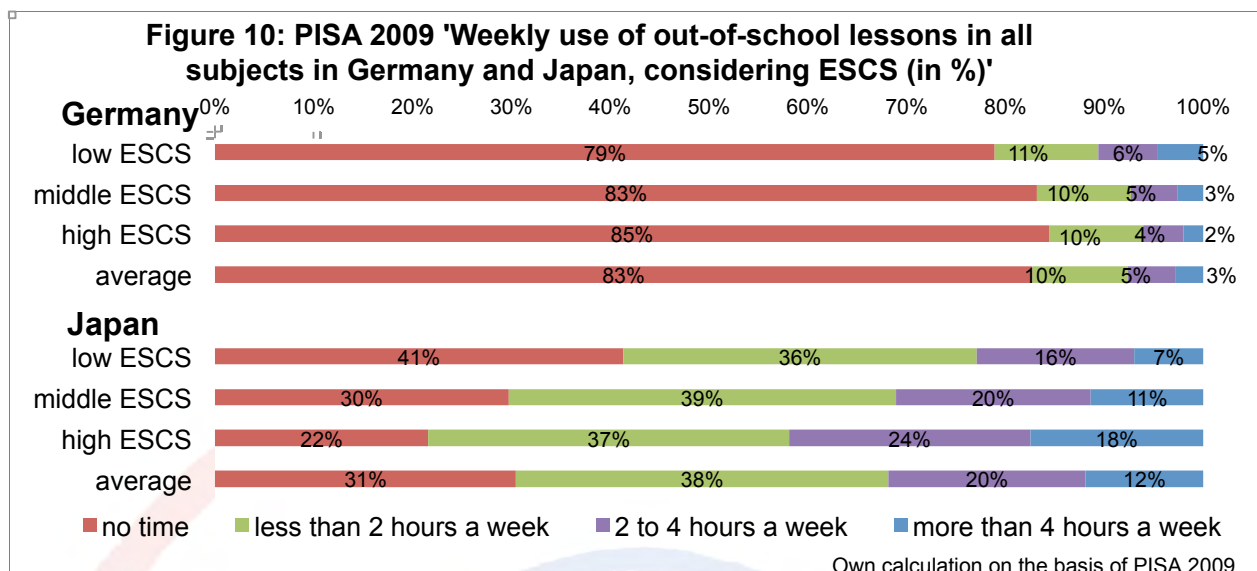


Figure 10 reveals the weekly amounts of time spend for out-of-school classes by social class. Now we see that there are some differences in the use of *Nachhilfe* in Germany. Students with low ESCS do attend more *Nachhilfe*-lessons (21%) than their peers with higher ESCS (approximately 15%). In Japan differences seem to be even more obvious. The higher the social background of a student, the more he uses the opportunity of shadow education. In total a difference of 21% can be detected between low and high ESCS students. The percentage of users that attend out-of-school classes less than two hours a week does not differ that much between social strata. Particularly those students who can afford to attend more than two hours a week of out-of-school classes differ extremely between high (2-4 hours: 24,4%; 4 and more hours: 17,5%) and low ESCS students (2-4 hours: 15,9%; 4 and more hours: 7%).

In conclusion, we have to acknowledge these first results. It seems as if German shadow education is functioning more as an instrument to neutralize disadvantaged family background than Japanese shadow education. Although this would also be a very positive result of this investigation, there are other factors we have to consider before jumping to final conclusions.

First, we have to keep in mind in what way the two student populations of our dataset differ. Here one thing might be of great importance to understand the presented percentages of the two countries. If we take a look at the distribution of respondents using lessons to improve study skills as an example (table 2) we will see a great difference between the two countries.

**Table 2: PISA 2009 'Lessons to improve study skills in Germany and Japan, per ESCS' (in %)**

			ESCS			Total
			low ESCS	middle ESCS	high ESCS	
GERMANY	Lessons to improve study skills	Count	156705	334292	178962	669959
		%	23.4%	49.9%	26.7%	100.0%
JAPAN	Lessons to improve study skills	Count	335997	583536	183176	1102709
		%	30.5%	52.9%	16.6%	100.0%

Own calculation on the basis of PISA 2009.

There might be approximately the same number of students with a high ESCS in both countries. But as we can see above, the percentage between social classes is differing: in Germany about 26.7% of all students belong to the higher class. In Japan only 16.6% are counted to this class. This means that the beforehand presented data has to be interpreted keeping these population diversities in mind. Consequently, percentages of Japanese lower and middle class students who attend out-of-school education carry much more weight than those of upper class students.

Also the correlations between the ESCS of a student and the use of out-of-school lessons is not very high (tables 3 and 4). It seems as if the ESCS has no great influence on who is able to attend out-of-school lessons in Germany and Japan.

**Table 3: Correlation between ESCS and out-of-school lessons in Germany and Japan.**

		Lessons to improve study skills	Enrichment Lessons in				Remedial Lessons in			
			native language	mathe-matics	science	other subjects	native language	mathe-matics	science	other subjects
ESCS GER-MANY	Pearson Correlation	-.040**	-.117**	-.071**	-.026**	-.032**	-.099**	.012**	.007**	.024**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000
ESCS JAPAN	Pearson Correlation	-.144**	-.028**	-.142**	-.034**	-.121**	-.060**	-.129**	-.044**	-.079**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000

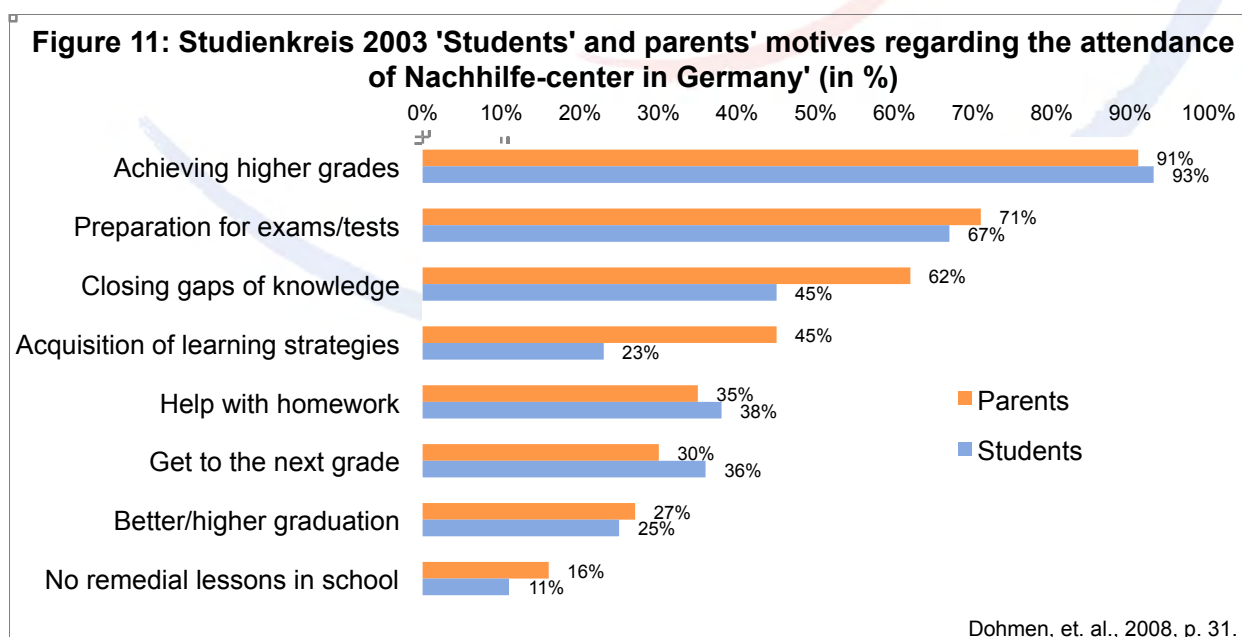
\*\*. Correlation is significant at the 0.01 level (2-tailed).  
Own calculation on the basis of PISA 2009.

**Table 4: Correlation between ESCS and weekly amount of out-of-school lessons in Germany and Japan.**

		Weekly out-of-school lessons in			
		native language	mathematics	science	other subjects
ESCS GERMANY	Pearson Correlation	-.119**	-.077**	-.058**	-.025**
	Sig. (2-tailed)	.000	.000	.000	.000
ESCS JAPAN	Pearson Correlation	.143**	.264**	.167**	.247**
	Sig. (2-tailed)	.000	.000	.000	.000

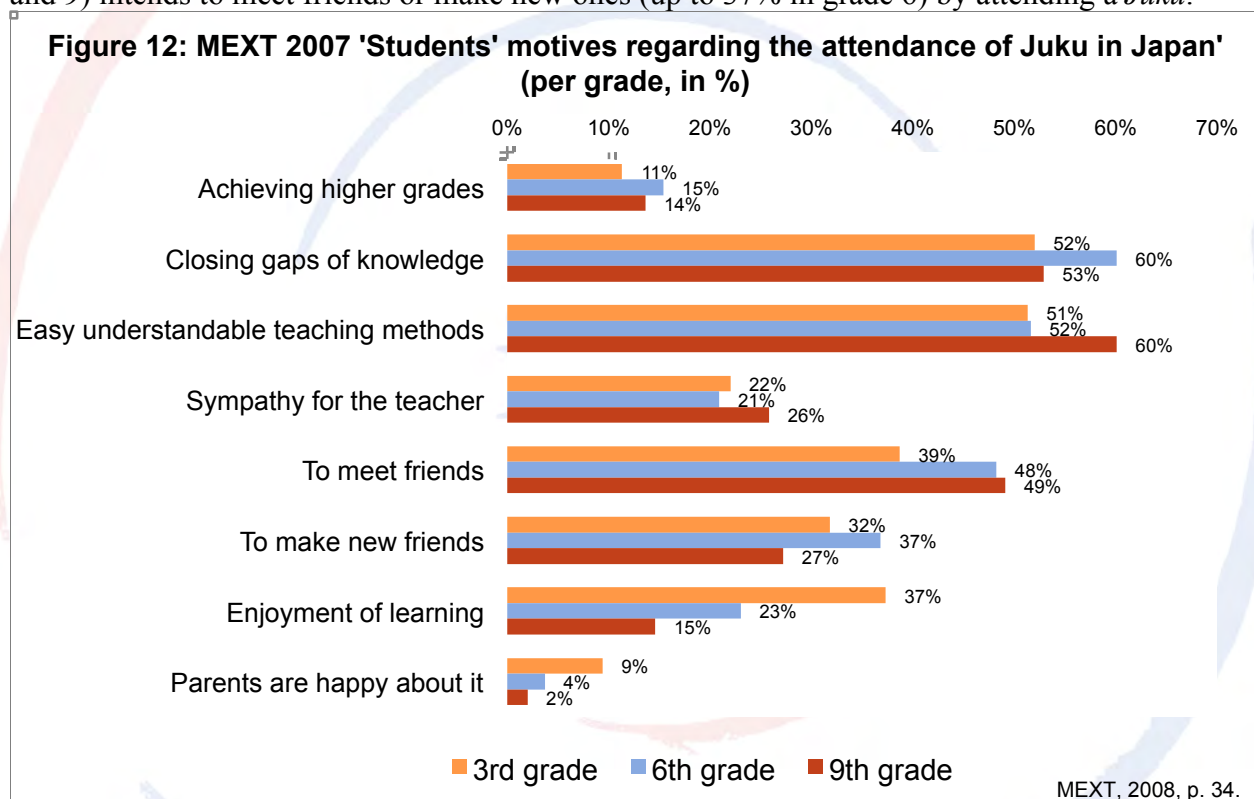
\*\*. Correlation is significant at the 0.01 level (2-tailed).  
Own calculation on the basis of PISA 2009.

Another explanation for the great class specific differences in the use behavior regarding shadow education between the two countries can also be found in the different motives why out-of-school lessons are attended (figures 11 and 12).



Following the data of a survey conducted by one of the two biggest German *Nachhilfe*-providers, owning more than 1.000 *Nachhilfe*-center in Germany, it is the foremost objective of German parents as well as students to get better grades. Most German students seem to attend out-of-school lessons because they have a certain problem at school. Besides getting better grades, they seek to close gaps of knowledge or get help with preparations for tests or with homework. In Japan it is entirely normal for a child to go to a *Juku*. Especially in middle school nearly everybody goes to a *Juku* in the afternoon. As the next figure (12) shows, Japanese students have also very different reasons to attend a *Juku*.

In comparison to German students, where nearly everybody uses shadow education to get better grades (91%), just a mere 11% to 15% of Japanese students use out-of-school lessons to achieve higher grades in school. Nearly of equal importance is it to close gaps of knowledge. But besides that the better teaching methods play a big role for attending a *Juku*. Otherwise though, more social aspects seem important to Japanese students, too. So nearly every second student (grade 6 and 9) intends to meet friends or make new ones (up to 37% in grade 6) by attending a *Juku*.



Based on sociological cost-benefit-assessments the assumption that those motives are also determined by social origin make a lot of sense (Becker and Lauterbach, 2010, pp. 15ff.). While wealthier parents can easier afford to send their children to *Juku* the more disadvantaged families may not. Considering the nevertheless high attendance ratio of lower class students in Japan, it becomes clear that lower class students will not be able to attend a *Juku* because they would like to meet their friends or something like that, but they need a certain kind of education. Here parents decide to send their children to a *Juku* because they assume that this is an investment worth being given (secondary effect of origin). This would also explain the low achievement gap between students of higher and lower social class.

## 5. Conclusion

Although comparable school instruction time is found in Germany and Japan, Japanese students achieve constantly higher results than their German peers. The assumption that the reason

herefore lays only within quality differences between the school instructions of the two countries is not sufficient enough. Here the Japanese shadow education system provides a reasonable explanation for those higher achievement rates. As could be shown, Japanese ninth graders are much less influenced by their family background in achieving educational success than their German counterparts. Also, Japanese students of all social classes invest in shadow education to a high degree. This means, shadow education may indeed be used to counteract disadvantaged family background – although with some restrictions. On first sight, the influence of the social origin of a student seems to be much stronger in Japan than in Germany. Different educational aspirations of social classes as well as financial resources do also play a role for the shown differences between low and high ESCS groups in Japan. When it comes to quantity, students of low ESCS cannot compare with those of higher ESCS. But it seems as if lower class students do just invest in essential classes to get an education as good as the more advantaged students. This would explain the high percentage of resilient students in Japan (about 11%). In Germany the social origin of a student does not seem to play a great role in who uses shadow education and who does not. Students from lower classes do even invest slightly more for supplementary education. Nevertheless, the small difference in the amount of use as well as the comparatively low attendance ratio is not yet sufficient enough to be a cause for a decrease of disparities.

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*An Examination of the Historical and Philosophical Foundations of Educational Theory in a Post-Modern World: Implications for Curriculum Design and Critical Thinking Skills*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

Numerous philosophies and theories of education affect teaching and learning in academic institutions by influencing the ways teachers think, plan their work, and interact with students. An ideal philosophy of education stresses the need for learner autonomy and personal growth, empowering students to actively pursue lifelong learning in a wide range of fields. The life-experience of each individual student can be incorporated into the curricula of an educational system in order to make significant contributions to society (Dewey, 1997). Effective teaching relates learning in a meaningful way to the real-life experiences of students. An appropriate educational philosophy and system must also address the functions of schooling at all levels, curriculum design, and pluralism in the era of globalization. A philosophy of education must possess substantial historical and philosophical foundations and embrace technological change without being dominated by technology. Change has been a constant factor in education, and a realistic educational philosophy must embrace change. Historically, schools have experienced constant change, and the rate of change has accelerated exponentially due to the impact of technological advances in society. The goals and objectives of schools and the roles of teachers have throughout history been determined by underlying philosophies and social theories in a progression of technical, academic, and social transformations. Post-modernism, with its emphasis on the development of critical thinking skills, may be the ideal supporting social theory for an effective philosophy of education in contemporary international society.

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## *Introduction*

The ideal philosophy of education emphasizes the need for learner autonomy and personal growth, empowering students to actively engage in lifelong learning. Dewey (1997) maintained that “education in order to accomplish its ends both for the individual learner and for society must be based upon experience- which is always the actual life-experience of some individual” (p. 89). Effective teaching connects learning in a meaningful way to the real life-experiences of students. A philosophy of education must be based on substantial historical and philosophical foundations and promote technological change without being overwhelmed by such change. Post-modernism, which emphasizes critical thinking skills, may be the ideal supporting social theory for a contemporary philosophy of education. The ideal educational philosophy and system must also address the functions of schooling, curriculum, and pluralism in the current era of globalization.

## *The Historical Foundations of Education*

Historically, schools have experienced constant change, and the rate of change has accelerated exponentially due to the impact of technological advances in society. Schools and teachers have frequently been blamed for economic and political problems. deMarrais and LeCompte (1999) maintained that the way teaching is conducted is “more a function of external political, ideological, and economic pressures than of concern over expertise and technical skills” (p. 193). External threats to the entire society have profoundly influenced and driven change in the field of education. An ideal philosophy of education embraces the need for the educational system to adapt to changing circumstances and to new technology, while maintaining a balance between the need for national security and the rights of the individual.

American political, business, and education leaders viewed the launching of the Russian “Sputnik” satellite in the 1950s with alarm and considered it to be a direct challenge to the global influence of the United States and a serious threat to national security (Boyle, 2008). As a result of the Russian technological and military challenge, the National Science

Foundation was used to increase funding for mathematics and science programs, and the National Defense Education Act greatly increased the number of college scholarships and funds for science materials in local schools (Peoples, 2008). An ideal philosophy of education seeks a balance in funding priorities in all subject areas. Literacy skills, critical thinking skills, and historical knowledge are as important as mathematics and science programs for the long-term survival of a democratic society.

As a result of the Sputnik crisis, the American government became more involved in education and in the formulation of national educational policies and goals. Spring (1985) maintained that “the National Institute of Education’s main concern is the control of education by the channeling of research interest into particular fields” (as cited in deMarrais & LeCompte, 1999, p. 18). The Soviet threat strengthened the National Institute of Education’s central role in the American education system.

The fear of increased international economic competition, primarily from Japan and Germany, eventually replaced the external political and military threat of the Soviet Union. In 1983, the report *A Nation at Risk* created the public perception that rapidly dropping American school standards were causing American companies to lose their competitive edge in the global marketplace (Johanningmeier, 2010). As a result of the report, the National Commission on Excellence in Education created guidelines intended to raise standards in the key subjects of science, mathematics, English, and foreign languages in American schools (Good, 2010). At a national conference, the governors of every state agreed on six educational goals, including the goal of making American students the best in the world in science and mathematics, and the goal of implementing standardized tests nation-wide in several grade levels (Meadows, 2007). National educational policies can provide national unity and a sense of purpose. However, the accuracy of the report *A Nation at Risk* later came into question as America experienced “unprecedented prosperity” in the 1990s (Tozer, Violas, & Senese, 2002, p. 441). The ideal educational philosophy requires a careful examination of all facts presented in educational reports that influence national educational policies.

Change has been a constant factor in education, and an educational philosophy must embrace change. At the beginning of the twentieth century, most children attended school, but few of them went beyond the eighth grade. Schools were traditional, with the teacher playing a central role, transmitting information to obedient, unquestioning, passive students. Rote memory was central to the traditional educational experience. Scientific management practices were applied to schools, which began more and more to resemble factories, both in the design of school buildings and in the regimented curriculum (deMarrais & LeCompte, 1999). A backlash occurred against the increasing regimentation. The progressive school movement emerged, and placed a greater emphasis on student centered lessons and natural,

free expression (Kohlstedt, 2008). Educational leaders such as John Dewey and George Herbert Mead believed that the philosophy of traditional schools needed to be applied to real life problems in order to improve society (Freeman-Moir, 2012; Gutek, 1997). The struggle between traditional and progressive approaches continues, and the tension between the two schools of thought has led to numerous changes and compromises in curriculum design. The ideal philosophy of education emphasizes progressive approaches to education.

In the twentieth century, the roles and tasks of high schools increased steadily over the decades. Vocational training was added to the traditional academic curriculum, and by the 1960s many multicultural and social activities had been added to the educational mission of high schools. Schools were also involved in the fight for racial equality and desegregation in the United States and transformed themselves into diverse, multiethnic organizations that helped to transform the greater society (Pai & Adler, 2001). Schools transmitted knowledge and values, provided vocational skills training, and prepared students to live as productive, well-adjusted citizens in a democracy.

Standardized testing is increasing in importance as a result of the *No Child Left Behind Act* (Kaufman & Blewett, 2012). However, Amrein and Berliner (2002) noted that standardized testing leads to increased cheating, drop-out rates, and to a narrowing of choices in the curriculum. The increased use of standardized testing, school choice, and the unequal distribution of resources to schools based on the wealth of the local communities are all examples of external forces that have forced schools to change and adapt to constantly changing circumstances and societal conditions.

Private and public universities and colleges in the United States have benefited from corporate donations and have in many cases formed close partnerships with large corporations in local industries. The board of directors of the New American Schools Development Corporation (NASDC) is composed mainly of CEOs of major American corporations (Barone, 1993). The purpose of higher education is often linked in the public mind to job training and the acquisition of specialized knowledge and skills to be used in a career. An ideal educational philosophy welcomes partnerships between schools and the business community, provided that the requirements of business leaders do not dominate all aspects of education.

### *The Philosophical Foundations of Education*

The goals and objectives of schools and the roles of teachers have throughout history been determined by underlying philosophies and theories. Plato founded his Academy in Athens based on his philosophy of Idealism, and his student Aristotle founded his own school, the

Lyceum, based on his philosophy of Realism (Gutek, 1997; Zhmud, 1998). The numerous philosophies and theories of education also influence teaching and learning in schools by influencing the ways teachers think, plan their work, and interact with students.

The teacher's relationship with students exemplifies his or her beliefs, ethics, and values in a variety of ways. Barone (1993) asserted that every student should be "challenged to see her life as an ongoing project...comparable to the creation of a work of art" (p.7). Teachers should teach

students to value their own uniqueness as individuals, while respecting the rights and needs of others. Students must learn to actively seek out new learning experiences in a wide variety of situations and settings and try to make meaningful contributions to the local community through volunteer service.

Teaching methods, curriculum design, course content, and the language used by teachers are all influenced by the theories and philosophies of education to which individual teachers subscribe. Tisdell and Taylor (1999) maintained that humanist teachers believe in the importance of the individual and self-directed learning, while other teachers may be more critical in their personal beliefs and may wish students to understand or become agents of social change. Ideally, teachers should encourage students to engage in critical thinking in all subject areas and in their daily lives.

Pai and Adler (2001) described the patronizing, condescending attitude of typical Korean teachers towards their students. Such an attitude reflects a highly teacher-centered, hierarchical, traditional approach to teaching in which teachers simply transmit knowledge to students with little respect for individuality or personal needs. Teachers, whether consciously or not, base their teaching practices on one or more leading philosophies or theories. The patterns of interaction in the classroom, choice of language, level of formality, facial expressions, and gestures of teachers reflect their own personal beliefs, philosophies, and theories of what should be taught and how best to teach it.

Educators can draw upon different philosophies, both purposefully and casually, to fashion their own unique views of teaching and learning in a variety of ways. Thomas Jefferson believed that lifelong learning should be a fundamental aim of education (Tozer, Violas, & Senese, 2002). Educators can draw purposefully upon different philosophies by continuing their own education and professional development by attending workshops, conferences, and seminars related to educational philosophies. Teachers can conduct their own research on educational philosophies and actively apply that research to the improvement of existing educational policies. Educators can take philosophy courses and pursue advanced degrees. The writing of a dissertation on educational philosophy is perhaps the best method for a teacher to purposefully fashion a comprehensive and unique view of teaching.

Educators can contrast and evaluate different philosophies casually by holding frequent discussions and friendly debates with colleagues on different educational issues and concerns, and by trying to reflect on the underlying philosophies in each issue. Kimball (1974) stated that ethnocentric individuals can become intellectually “isolated from new insight through adherences to established formulas, dogmas, or other rigid structures of beliefs” (as cited in Pai & Adler, 2001, p. 11). Participating in teacher exchanges with schools in different regions or different countries is another way to gain exposure to different philosophies of education.

Teacher exchanges, combined with intensive foreign language courses, can serve to reveal an entirely new perspective on teaching practices and the underlying theories and philosophies. The ideal educational philosophy is capable of evolving and is open to new ideas and useful elements of philosophies from many different sources, while maintaining a fundamental respect for the needs and rights of individuals and the importance of personal experience.

### *Post-Modernism: The Ideal Social Theory of Education*

Giroux (1993) maintained that, “Post-modernism rejects a notion of reason that is disinterested, transcendent, and universal . . . ” (as cited in Pai & Adler, 2001, p. 148). Proponents of post-modernism, also known as post-structuralism, are deeply suspicious of all forms of authority. Foucault (1980) stated that, “Truth is a thing of this world; it is produced only by virtue of multiple forms of constraint” (as cited in deMarrais & LeCompte, 1999, p. 30). Post-modernists do not believe in a single, absolute truth and are constantly testing and questioning the facts that constitute the curriculum of the educational system (Stronach, 1996). The term post-modernism covers a wide range of similar movements that question official versions of economic, political, and social reality.

However, given the use of standardized testing as a sorting mechanism, and the growing influence of business models and job training in schools, the social theory of functionalism may best explain the function of education in contemporary American society. Functionalists view society as a living organism that is composed of specialized, interlocking parts that function in support of each other (Sever, 2012). Parson (1985) described the goal of society, in functionalist terms, as the “development in individuals of . . . capacities which are essential prerequisites of their future role performance” (as cited in Pai & Adler, 2001, p. 130). Schools act as sorting mechanisms in a functionalist system, grouping students according to their measured abilities, and training them to perform their assigned functions in society. Standardized testing facilitates the selection process by grouping students into clearly defined levels of ability and related job categories. Business and technical courses are steadily

supplanting the traditional liberal arts curriculum of many schools. Students are being selected based on early demonstrations of ability and trained to perform their assigned roles in different parts of the body of society.

Rigidity is the greatest weakness of functionalism, and the danger exists that individual freedom and choice will decrease if the educational system becomes dominated by the political and business elite. Purely functionalist approaches to education leave few opportunities to individuals for a second chance once they have been processed and labeled by the system at an early age. The effect of the G.I. Bill at the end of World War II is a prime

example of the ability of individuals to transform themselves through learning. To the surprise of many educators, the veterans chose mainly liberal arts courses and achieved better grades than non-veterans and traditional students (Tozer, Violas, & Senese, 2002). Functionalism does not allow for the possibility of later individual transformation and growth in unexpected or unconventional ways.

Post-modernism is an appropriate model for education in an increasingly complex world. In view of the complexities of contemporary global society, independent critical thinking skills have become essential at work, school, and in private life. Functionalism stresses conformity and obedience, Marxism is based too heavily on resentments and conflict, and interpretivism, based on classroom interactions, is too narrowly focused on the immediate classroom environment. The questioning, critical stance of post-modernism seems appropriate for modern circumstances and the pursuit of independent, lifelong learning. Post-modernist views equip students with a healthy skepticism of official facts and stimulate intellectual curiosity, leading to new discoveries, modes of thinking, and improvements in existing social, political, and economic structures (Stronach, 1996). In an ideal world, educators would be free to base the entire curriculum on post-modernism. In the real world, educators should find a method to introduce some elements of post-modernist thought into contemporary education.

### *The Functions of Schooling*

The function of education should be to enhance and promote both personal and economic growth at all levels of a free and open society. The mastering of social skills and critical thinking skills is as important as the acquisition of advanced technical skills. Finch (2001) stated, "It is no longer *what* is learnt that matters, but *how* . . . . The autonomous learner is no longer a matter of conjecture, but of necessity" (as cited in Edwards, 2004, p. 20). Students require critical thinking skills to help process an increasing flow of daily information and to solve complex problems. "The brain learns best in real-life, immersion-style, multi-path learning: Fragmented, piecemeal teaching can forever kill the joy and love of learning" (Jensen, 2000, p. 309). Learning should be a highly integrated and interactive process

connected to real-life and personal experiences. Educational institutions should function as a bridge between teachers, students, parents, the business community, and politicians. Schools should seek a harmonious balance between the needs of the internal and external constituents.

The need for critical thinking skills is increasing. Hargreaves (1994) observed that technological trends "do not lead us forward in some direct way to a new world, but make it increasingly important for people to shape their own lives" (as cited in Levin & Riffel, 1998, para. 4). Students require improved reasoning abilities in addition to technical skills.

The main function of schools should be to provide opportunities for learning and teaching. Testing should be of secondary importance. However, Flinders (2005) stated, “What is tested now determines what is taught” (p. 8). Ideally, what is learned should determine what is tested. If too much focus is placed on preparing for and administering standardized tests, then learning opportunities may be lost in the classroom, and the educational experience of students may be narrowed. Lessons related to meaningful personal experience should form the basis of schooling.

### *Curriculum Design and the Development of Critical Thinking Skills*

Plato stressed the need for physical fitness, reasoning, and moderation in the curriculum that he developed for his Academy in Athens (Gutek, 1997). Children from ages six to fourteen practiced gymnastics, music, and studied literature, and older students were introduced to the study of philosophy (Tozer, Violas, & Senese, 2002). Physical education and music can play an important role in the education of children as well as adults. Jensen (2000) stated, “All learning involves our body, emotions, attitudes, and physical well-being. Brain-based learning advocates that we address these multiple variables more often and more comprehensively” (p. 200). Meeting the physical and emotional needs of students helps to enhance the learning experience and to make lessons more effective.

A standardized curriculum can provide a useful foundation on which to build individualized lessons and to create spontaneous learning opportunities. Regarding curriculum design, Dewey (1997) stated, “The planning must be flexible enough to permit free play for individuality of experience and yet firm enough to give direction towards continuous development of power” (p. 58). Individual experience can be integrated into all lessons, and different subjects can be combined creatively to provide a richer, more meaningful context for learning. For example, physical education, history, geography, and science teachers can collaborate in a small learning community to create a unit on the Olympics. Students can also make a contribution to the development of curricula and be given a degree of choice in selecting classroom activities and homework assignments. Flexible online learning systems can supplement regular class lessons and provide additional tutoring to students with special needs. A needs analysis can be conducted at the beginning of each course in the classroom or online, and teachers can collect student opinion surveys at the end of each course on which to base changes and improvements in the curriculum.

Professional educators, parents, the business community, and politicians should all work together to determine the curriculum of schools. Leadership in the vital area of curriculum development should be shared between both the internal and external constituents of schools. Ideally, professional educators should take the leading role in the process, consulting closely with and responding to the needs of both parents and the business community. However,

Jacoby (1987) advised against “yielding to a new Latin, a new scholasticism insulated from the larger public” (as cited in Giroux, 1992, p. 219). While professional educators should take the lead in designing the curriculum, educators must be careful not to alienate parents and the general public with complex language.

Politicians may focus more on their own short term career goals than on implementing effective, long-term educational policies. However, Portelli (1991) noted that Aristotle, a great educator, believed the answer to what should be taught could be found in politics. Politicians should seek more guidance from professional educators and balance the expert opinions of educators with demands from business leaders.

In theory, professional educators, parents, the business community, and politicians should all be working towards the same objectives: the creation of an increasingly educated, affluent, and peaceful society. Giroux (1987) stated, “Hope is very important . . . we have to be able to dream . . . we can’t always operate in the logic of resistance. We must be able to speak the language of possibility as well” (as cited in Portelli, 1991, para. 13). Conflicts between educators, parents, the business community, and politicians have a negative impact on the effectiveness of curriculum development. A close partnership based on mutual respect should be formed between all interested parties to allow for the creation of a curriculum that prepares students to be well-rounded individuals and highly skilled workers in a vibrant and tolerant democratic society.

Educational institutions are essentially a part of the community and reflect the hopes and aspirations of the local community. The problems of local communities, including poverty, drug abuse, and violence can also directly influence the school environment in negative ways. The relationship between schools and the community is often ambiguous; members of the community may respect the influence of the school, but the community may also blame the

school for a wide range of problems in society. In general, schools and the local community influence each other and share a roughly equal relationship. However, the state and federal governments in the United States have more power than educational institutions, and through laws and control of funding the state and federal governments may choose to dictate educational policies and guidelines to schools. Crowley (1986) warned against taking “the social and historical processes out of discourse in order to make a certain order of things appear natural and given” (as cited in Giroux, 1992, p. 225). Politicians should not oversimplify the complex issues facing schools. Aronowitz and Giroux (1986) noted the “current conservative demand for a common cultural identity based on forms of exclusion and hierarchy” (as cited in Giroux, 1992, p. 225). Professional educators should be given the most responsibility for setting educational standards and policies.

All students should be treated equally and integrated to the extent possible into regular classroom settings. The American Association of Colleges for Teacher Education (AACTE) issued a report in 1972 entitled *Not One Model American* that stressed the need for cultural pluralism in American society (Pai & Adler, 2001, p. 105). Policies regarding the rights of minorities and of students with disabilities have become increasingly complex. Evanciew (2003) stated that “contextualized, situated, and social learning is crucial for students with special needs” (para. 5). Regular students can participate in learning activities and exercises with special needs students for the benefit of both types of students. Helping special needs students can serve to develop a sense of empathy in regular students.

Jordan (2004) maintained that the “function of schools can be . . . skewed when rights and protections afforded to one individual with a disability conflict with those of another” (p. 3). Teachers must try to balance the needs of students with disabilities. It may be desirable to simplify existing laws regarding students with disabilities to avoid conflicts and to reduce the administrative burden on teachers while guaranteeing the basic rights of special needs students.

#### *Pluralism in the Education System*

Faculty and staff can work together to prepare the implementation of multicultural programs in an educational setting by doing research on the habits and customs of various cultures and by giving research presentations. However, Buber (1995) noted that “dialogue must be built on equality but doesn’t necessarily lead to action” (as cited in Rose, 1999, para. 7). Simply building a knowledge base of other cultures is not enough to create genuine understanding and empathy. In order to translate knowledge into action and true understanding, the faculty and staff can write and perform role plays together of situations in which minorities are subjected to discrimination or involved in simple misunderstandings.

Kimball (1974) observed that individuals may become “isolated from new insight through adherence to established formulas, dogmas, or other rigid systems of belief” (as cited in Pai & Adler, 2001, p. 11). In other words, one’s own culture may act as a rigid system of belief, blinding its members to the positive aspects of other cultures. For example, Hebert (2001) maintained that Canada’s 1971 multicultural policy “failed to recognize the endemic nature of racism and discrimination in Canadian society,” and did not engage in “serious pedagogical treatment of value and belief systems” (para. 23). Policies and directives are not enough to fundamentally change the attitudes of citizens; people must be stimulated to take concrete actions based on new understandings.

## *Conclusion*

In conclusion, the ideal philosophy of education addresses the need for learner autonomy, guiding the learner towards the ultimate goal of lifelong learning. Teaching and learning should be related to the real-life experiences of students. A philosophy of education must incorporate historical and philosophical elements. External military and economic threats to society have historically led to dramatic responses and changes throughout the entire society. Such changes have always had a significant and direct impact on education in terms of changes in national research priorities and the redistribution of resources, including program funding, scholarships, classroom materials, changes in curriculum design, and increases in standardized testing. The ideal educational philosophy is capable of adapting to change and embraces new technology without being dominated by it. Post-modernism may be the ideal supporting social theory for a philosophy of education, training students to be independent and critical thinkers.

Schools should play a central role in the life of students and the community. Educational institutions should function as a bridge between teachers, students, parents, the business community, and politicians. The curriculum should address the emotional and physical needs of students, providing them with a balance of social and technical skills. Pluralism should also play an important role in schools, and both students and teaching staff should learn to respect the positive elements of different cultures and to value diversity in the context of international society and globalization.

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*Learning Motives of EFL Learners*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

This study examines learning motives of undergraduate EFL students, compare learning motives among students categorized by their background (gender and field of study), and investigate the relationship between students' English background knowledge and their learning motives. The samples are 210 undergraduate students enrolled in Fundamental English course at Bangkok University. The instrument in this study is a questionnaire. Results indicate that the overall learning motive is at a moderate level. There are significant differences at .05 level found in students' learning motives as classified by gender. Female students have more learning motivation than male students. There are no statistically significant differences at .05 level found in terms of field of study. In addition, there is a positive relationship between students' English background knowledge and their learning motives at .01 level. In other words, students with high English background knowledge are found to have high motivation to learn English. On the other hand, students with low English background knowledge are found to have low motivation to learn English.

**Keywords:** motives, motivation, EFL students

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## **Introduction and Theoretical Framework**

Motivation has long been recognized as one of the key factors that determine foreign/second language (L2) learning achievement and attainment because it serves as the initial engine to drive a person into doing something and later functions as an ongoing driving force that helps him or her to accomplish the task. Robert Gardner (1985: 10) sees motivation as “the combination of effort plus desire to achieve the goals of learning the language plus favorable attitudes toward learning the language. That is, motivation to learn a second language is seen as referring to the extent to which the individual works or strives to learn the language because of a desire to do so and the satisfaction experience in this activity.” Most researchers would agree that motivation is responsible for: “why people decide to do something, how long they are willing to sustain the activity, and how hard they are going to pursue it” (Dörnyei, 2001: 8). Researchers may use different dichotomies of motivation depending on their purposes and research frameworks. According to Gardner and Lambert (1959), two general types of motivation are integrative motivation and instrumental motivation. The concept of integrative motivation in the EFL context would be the idea that it represents the desire of the individual to become bilingual, while at the same time becoming bicultural (Benson, 1991). On the other hand, learners who have instrumental motivation desire to learn a target language for functional reasons such as meeting the requirements for school or university graduation, applying for a job, requesting higher pay based on language ability, reading technical material, translation work or achieving higher social status. While some researchers pay attention to integrative and instrumental motivation in language learning, other researchers focus on intrinsic and extrinsic motivation. Intrinsic motivation refers to doing something because it is inherently interesting or enjoyable whereas extrinsic motivation refers to doing something because it leads to a separable outcome.

Ichikawa (2001, cited in Shwalb, Nakazawa & Shwalb, 2005) created the two-factor model of learning motives and developed a questionnaire to measure the six types of motives. Each motive was rated on a five-point scale (5 = “applies to me”; 1= “does not apply to me”). According to Ichikawa, learning motives are classified into six types: enjoyment, cultivation, practicality, relation, pride, and reward. The first three motives (enjoyment, cultivation, and practicality) are referred to as “content-attached” motives. Relation, pride, and reward are called “content-detached motives.” Horino and Ichikawa (1997, cited in Shwalb et al., 2005) found out that motives affect strategy selection, which in turn influences achievement in English language learning.

In the EFL learning classroom, it can be found that mostly only a few of the students are motivated and active in class; responding to the teacher's questions, practicing and getting involved in activities and various tasks. Only students majoring in English and related fields have enthusiasm for learning English. Others are physically present in the classroom but largely mentally absent. To provide effective foreign language instruction, teachers have to be aware of the necessity of looking for techniques and interactive activities that promote interaction among students in the classroom to motivate their students to learn. Therefore, it is necessary to examine how strong students' motivation is for practicing English and how their motivation influences their English achievement.

## **Purposes of the Study**

The objectives of this study are:

1. to study learning motives of undergraduate EFL students

2. to compare learning motives of students with different background (gender and field of study)
3. to investigate the relationship between students' English background knowledge and their learning motives

## **Research Methodology**

### *Population and Samples*

The participants included in this study were undergraduate students enrolled in Fundamental English course at Bangkok University. These students have studied English as a foreign language. The samples were selected by the use of stratified random sampling technique. As a result, 210 students participated in the data collection.

### *Research Instrument*

In order to identify students' learning motives, a questionnaire was used to collect the data. The first part gathered personal information from the respondents who were asked to answer the questions on gender, field of study, and English background knowledge. This general background might have something to do with students' learning motives. The second part was a survey of learning motives adopted from Ichikawa (2001, cited in Shwalb et al., 2005). To respond this part, the respondents were asked to check their learning motives in terms of types: enjoyment, cultivation, practicality, relation, pride, and reward. The questionnaire was prepared for rating in a form of five-rating scale.

### *Data Analysis*

The acceptable statistical significance level was set at alpha ( $\alpha$ ) < .05. After the receipt of the completed questionnaires, the data were statistically analyzed by using SPSS/Window 12 through the following steps:

1. The data of personal information were brought to calculate for average means.
2. The data of learning motives were brought to calculate for average means and standard deviation.
3. The means of learning motives were divided into three levels and interpreted in the form of range based on the criterion of  $\bar{x} \pm .5SD$ .
  - The average mean of learning motives was 3.49 and standard deviation was .49.

$$3.49 \pm (.5)(.49) \rightarrow 3.49 \pm .25$$

<b>Level of Learning Motives</b>	<b>Mean Range</b>
high	3.75 – 5.00
moderate	3.24 – 3.74
low	1.00 – 3.23

4. The independent-samples t-test was used to test the mean scores of two groups of subjects concerning their learning motives.
5. The One-Way Analysis of Variance (ANOVA) test was used to compare mean scores of three and more groups concerning their learning motives. Then the Scheffe test was used to test a statistically significant difference in the mean scores of any two groups.
6. The Pearson product-moment correlation coefficient test was used to investigate the relationship between English background knowledge and learning motives.

## Results

### 1. Results of Fundamental Analysis

The study revealed that the overall learning motive was at a moderate level ( $\bar{X} = 3.49$ ). Among six types of learning motives, the three highest means were practicality, cultivation, and enjoyment respectively ( $\bar{X} = 4.02, 3.88, 3.67$ ). The lowest mean falling on pride was at a low level ( $\bar{X} = 2.88$ ). The results were presented in Table 1.

**Table 1** Mean and Standard Deviation of the Respondents' Learning Motives

Learning Motives	$\bar{X}$	S.D.	Level
1. Enjoyment	3.67	.61	moderate
2. Cultivation	3.88	.68	high
3. Practicality	4.02	.70	high
4. Relation	3.21	.72	low
5. Pride	2.88	.77	low
6. Reward	3.32	.69	moderate
<b>Total</b>	3.49	.49	moderate

### 2. Results of Hypothesis Testing

#### 2.1 Hypothesis 1 compared students' learning motives with different background

Hypothesis 1 was partially accepted because not all variables of background information affected students' learning motives. There were significant differences at .05 level found in students' learning motive as classified by gender, but no statistically significant differences in terms of field of study.

The overall mean score of learning motives of female students ( $\bar{X} = 3.61$ ) was higher than that of male students ( $\bar{X} = 3.36$ ). Both groups had language learning motives at a moderate level. According to the results of the comparison of the mean scores of learning motives, there were significant differences found in students' learning motives between two groups (male and female) at .05 level. That is, female students had more learning motivation than male students. The results obtained from applying the ANOVA revealed that no difference in overall learning motives among three groups of field of study (math, science, and language arts) was found

statistically significant at .05 level. This means that students in different fields of study were not different in having learning motives.

## 2.2 Hypothesis 2 investigated the relationship between students' English background knowledge and their learning motives

The Pearson product-moment correlation coefficient test was used to find out whether there was a statistically significant relationship between English background knowledge and learning motives. This hypothesis was accepted. Table 2 shows that there was a positive relationship between students' English background knowledge and their learning motives at .01 level. In other words, students with high English background knowledge had high motivation to learn English. On the other hand, students with low English background knowledge had low motivation to learn English.

**Table 2** Correlate Results for the Respondents' English Background Knowledge and Their Learning Motives

VARIABLE	English Background Knowledge	Learning Motives
English Background Knowledge	1.00	
Learning Motives	.24**	1.00

\*\* P < .01

When all items were considered, the result showed that there was a positive relationship between students' English background knowledge and their learning motives in terms of enjoyment, cultivation and practicality (items no. 1, 2 and 3) at .01 level and reward (item no. 6) at .05 level. In other words, students with high English background knowledge had a high level of enjoyment, cultivation practicality, and reward motives. On the other hand, students with low English background knowledge had a low level of enjoyment, cultivation practicality, and reward motives. The results were shown in Table 3.

**Table 3** Correlate Results for the Respondents' English Background Knowledge and Their Learning Motives Shown in All Items

VARIABLE	English background knowledge	1. Enjoyment	2. Cultivation	3. Practicality	4. Relation	5. Pride	6. Reward
English background knowledge	1.00						
1. Enjoyment	.33**	1.00					
2. Cultivation	.24**	.73**	1.00				
3. Practicality	.24**	.65**	.74**	1.00			
4. Relation	-.02	.30**	.21**	.34**	1.00		
5. Pride	.13	.33**	.22**	.38**	.61**	1.00	
6. Reward	.17*	.46**	.42**	.58**	.63**	.77**	1.00

\* P < .05

\*\* P < .01

## Discussion and Conclusions

The results of the research have shown the importance to determine EFL students' learning motives. Some suggestions are proposed in accordance with the findings.

First, students' initial motives were cultivation and practicality. This means students desired to develop general ability and utilize knowledge. Among all the correlations, these two motives had a strong positive association with English background knowledge. Therefore, language teachers should provide students with activities which boost their language ability and opportunities in reflecting their use of knowledge in the classroom.

Second, enjoyment and reward had positive correlation with English background knowledge, but the students expressed these types of motivation at a moderate level. Thus, teachers may make their students enjoy learning by creating a pleasant, cooperative, energetic environment and giving them rewards.

Finally, the finding revealed that difference did exist in learning motives among the students from different background. Students were motivated regardless of their field of study, but the mean scores for the male were lower than those for the female in all motives. There were significant differences in learning motives between male and female students in terms of enjoyment, cultivation, practicality, and pride. Consequently, male students should be motivated mainly by these motives.

## Acknowledgements

This research was sponsored by Bangkok University.

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*Internationalization Process Curriculum Approach for Distance Education in Higher Education in Iran*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

This study is a descriptive- survey approach, with the purpose of study of process and dimensions of Internationalization curriculum process in distance education, in higher education in Iran, Within investigating the reasons necessity of this subject, paid to Identifying factors, conditions, resources, facilities, impasses, opportunities and strategies for it. In this regard, by using cluster- stratified sampling and using the formula of Cochran, 543 Iranian and foreign teachers and students in five universities in Tehran have been addressed to complete a questionnaire in Likert spectrum, consisting of 8 questions and 96 items. After analyzing data by using statistical single group t-test, The Friedman ranking and analysis of variance, according to results, to keep pace with the globalization process and introducing Iranian culture and civilization to the world Curriculum internationalization in higher education is essential. And distance learning approach, due to the high flexibility and crossing geographical, political, economic and cultural boundaries can be effective in this process. The most important factors influencing the success of curriculum internationalization process approach for distance education in higher education in Iran, it can pointed to the expansion of international cooperation among the universities expansion of International language in teaching, revising the current rules and clarify them, financial and human resources development, and necessary technological infrastructure, exploitation of opportunities for cultural similarities, and a high number of applicants for study in the area, selecting appropriate course topics and considering conversion approach in curriculum elements or shift in the intellectual paradigms of teachers and learners by basic change in what is taught and how it taught.

**Keywords:** Distance learning, internationalizing the curriculum, higher education in Iran

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## Introduction

Amazing growth of distance education on one hand and phenomenon of internationalization and globalization of education and the curriculum on the other hand, are issues that have caused serious changes in the world of higher education scenarios. But these two new educational approaches to what extent have effect on each other, whether distance education can be used as a strategy of internationalization of the curriculum. Does internationalization of education will provide wider application of distance learning? How can be designed an international curriculum in distance education? And..., They Are challenges for many experts and specialists.

The most common approaches in international development curriculum include:

1. Add-on: Add content, concepts or topics and international and cultural perspectives into the curriculum without changing the basic structure or approaches to their education
2. Infusion: content which rich understanding and knowledge among students from different cultures and reflects the different perspectives is included in the curriculum and it offers to the learners' professional knowledge of the difference in yield between cultures.
3. Transformative: Internationalization of curriculum which is based on changing its basic structure and it t is teaching and learning approach. Shift in thinking paradigm and attitude in the way of what is taught and how it is taught.

Although the conversion approach conducive to intellectual development, increasing the power of analysis, criticism and methacognition in order to foster intercultural and international students has a high ability(wiliams,2008), but each institution according to its goals, context and impasses can choose an appropriate approach(Aspan,1993).

Considering what was mentioned at the beginning of this discussion, this seems that distance education approach in supranational and international level can also be considered as an effective strategic way; Because in addition to having advantages such as cost, high speed, participation funds with a curriculum of international in the nature of features such as flexible, highly available, flexible interaction, learner-centered, and so on, brings it as an appropriate option for development of international higher education, and for fostering global citizens. In fact, the approach to internationalization of the curriculum at home which universities are providing the foundation for personal and professional development opportunities for all people in the world as a global citizen, to support distance education approach and ICTs they can reach higher goals. In fact in terms of theory, modern technology can be indicated on the plurality distance global education (Thune&welle-Strand, 2005).

According to statistics announced by UNESCO in 2005, in 2004,there are 2.5 million international students worldwide and there is thus anticipated that these figures will increase to 7.2 million in 2025(Bain &Green,2006) and what is interesting is Asian countries like Singapore and Muslim Asian countries like Malaysia among the leading countries in attracting international students(International Study Abroad Guides,2008) and this is indicative of the priority that countries paid for international education and internationalization of their curriculum in order to respond to the diverse needs of applicants for entry to higher education.

Thus, Morey (2000) to shift towards internationalization in higher education institutions, has developed a framework in which the skills and expertise of teachers, different and international f teachers, content and process international curriculum, different and international students, links with other universities and organizations and increasing knowledge based on research, as the most important factors for training students with cross-cultural competence has emphasized and in addition to importance of institutional management, it also emphasized the influence factors such as needs assessment, organizational structure, planning and implementation, and evaluation of educational issues.

## **Literature Review**

Results of William's study (2008) indicate that an international curriculum should be a good alternative to support different learning requests of international students. In this respect, moving toward a changeable approach that improve critical knowledge about values of educational approaches and curriculum, appreciate different ways of knowledge and entity, and student as an active participant in learning process, should be the goals of higher education institute.

Results of Bound's survey (2006) shows that international curriculum should involve students who never go abroad, and construct international knowledge and inter-cultural experience in the center of curricula so that students could enjoy it and internationalization thought become real in home.

Mihhailova (2006) did a study to determine that, "whether electronic learning can be a main tool in the internationalization of higher education"; his results indicate that blended learning is the best teaching and learning method.

Caruana's study (2004) about the role of ICT, in internationalization of curriculum shows that IOC's challenges are similar to electronic learning challenges and probably, a two-way leading approach is more effective than parallel approaches.

## **Purpose and Questions**

The purpose of this study is to examine the dimensions of internationalization process of curricula of distance education in Iran's higher education; we'll try to answer these questions:

- What are the necessity reasons for internationalization of curricula of distance education in Iran's higher education?
- What does effect on the internationalization of curricula of distance education in Iran's higher education?
- What conditions, resources, equipment's, are necessary for internationalization of curricula of distance education in Iran's higher education?
- What are limitations of internationalization of curricula of distance education in Iran's higher education?
- What are opportunities of internationalization of curricula of distance education in Iran's higher education?
- What topics are proper for internationalization of curricula of distance education in Iran's higher education?

- What are the best approaches to internationalization of curricula of distance education in Iran's higher education?
- What effective factor in distance education, do make it a good approach to internationalization of curricula of Iran's higher education?

## Method

This study is descriptive-research, and sample is all members of scientific board, P.H.D and M.A students of Art, engineering, sciences groups and all foreign students in public universities of Tehran sampling is done by cluster-class method. Each university is a cluster and 5 clusters (5 university) consist of Sanati-Sharif, Shahid-Beheshti, Tarbiat Moddres, Tehran, Payame-Noor and then by Kekran formula  $X = 0.05$ , and  $d=0.1$ , numbers of sample in each selective cluster are chosen. In next step, according to volume of units in each group, major and scientific rank, each sample is allocated. Numbers of final samples in all clusters are 543 individuals.

Research tool was a questioner which is made by researcher and when it is affirmed, its validity is used to gather data by some experts and calculation of kronbach-Alfa0/82, for its reliability. This question are involve & main questions and 96 sub-questions which is designed on liker spectrum.

To analyze data, on the part of responder's data, descriptive statistics is used and on the part of research question, first, one sample T-test, then Friedman Test and variance analysis is used based on the spsswin 15 software.

## Findings

Question 1- Does it necessary to internationalized curricula of distance education in Iran's higher education?

All options of these questions are designed by liker spectrum, standard average is the average of spectrum (number3) (test value=3) and

$$H_0: \mu \leq 3$$

$$H_1: \mu \geq 3$$

In fact, in each question, above statistic hypothesis are considered. To answer this question, 3 determinant variables are considered. Based on table 1, average of answers, in relation to determination of every cases on the internationalization of curricula of distance education in Iran's higher education, ( LOCDIHE ), are on the satisfactory value (  $\bar{x} > 3$  ) and on the level of  $\alpha = 0.05$  (  $p\text{-value} < 0.05$  ). By Friedman Test, these cases are classified, and determination value of internationalization procedure receives high rank. According to Friedman test's results, in table 9, at the level of  $\alpha=0.05$ , there is significance difference between ranks of determinant cases.

Question2- what factors are effective on the internationalization curriculum of distance Education in Iran's higher education?

According table 2, average of responses in relation to effects of each case ( $\bar{x} > 3$ ), are on the level of  $\alpha=0.05$  (p-value<0.05) and international scientific cooperation of universities with other universities, research centers, scientific, business, occupational associations, receive higher rank, and competitive tuition, receive lowest rank.

Question3- what are necessary conditions, resources, equipment's for internationalization of curriculum of distance Education in Iran's Higher Education?

According to table 3, average of responses, in relation to effects of each factor

( $\bar{x} > 3$ ), Are in the level of  $\alpha=0.05$  (p-value <0.05) and political construction of society receive higher rank and recreational and welfare equipment's receive lowest rank.

Question 4- what are limitations to internationalized curriculum of distance education of Iran's higher education?

According to table 4, responses, in relation to each effective factors, are at the satisfactory value ( $\bar{x} > 3$ ) and  $\alpha=0.05$  (p-value < 0.05) and improper political relation receive higher rank and lack of motivation and desire of experts to produce international contents, receive lowest rank.

Question 5- what topics are proper to internationalized curriculum of distance education of Iran's higher education?

According to table 5- are range of response, in relation to effects of cases 1,2,4,5,6,7,8, as a proper topic to internationalized curriculum are at the satisfactory level ( $\bar{x}>3$ ) and  $\alpha=0.05$  (p-value <0.05), but lessons topic in case 983 involve ( $\bar{x} < 3$ ) and (p-value>0.05), then they were not appropriate to internationalized curricula in higher education. 7 proper topics are categorized and allocated for internationalization, that medical science receive high rank and the humanities receive lowest rank.

Question 6- what are opportunities to internationalize curriculum of distance education of Iran's higher education?

According to table6- responses, in relation to effects of each cases 3-8, are at the satisfactory level( $\bar{x} > 3$ ) an  $\alpha=0.05$  (p-value), but above opportunities in case 1 & 2, have ( p-value > 0.05 ), so in point of view of individuals, these opportunities were not effective for IOCDIHE.

Between effective opportunities for IOCDIHE (case 3-8) existence of famous and skillful masters in some cases, receive higher rank, while language and cultural similarities, receive lowest rank.

Question 7- what are good approaches and action to internationalize curriculum of distance education of Iran's higher education?

To answer this question, 38 variables are considered.

According to table 7- average of responses are at the satisfactory level ( $\bar{x} > 3$ ) and  $\alpha=0.05$  (p-value  $<0.05$ ) and use of valuable books and scientific reference books receive higher rank and selection right to select relative lessons to the host country's culture, receive lowest rank.

Question 8- what effective factors in distance education, do make it a good approach to internationalize curricula of Iran's higher education?

To answer this question, effectiveness of 5 variables is considered as a leading quality in distance education approach, and one variable is considered to deny its leading effectiveness in direction of internationalization of curriculum of distance education in Iran's higher education. In table 8, average of responses, in relation to effectiveness of above factors, are at the satisfactory level ( $\bar{x} > 3$ ) and  $\alpha=0.05$  (p-value  $< 0.05$ )

Furthermore, agreement of distance education approach with internationalization, due to lack of geographical, with internationalization, due to lack of geographical, cultural, economic and political bounds, receive higher rank and necessity of attending teaching and denying of distance education, receive lowest rank and there is significant difference between these average ranks. (Table9).

### **Discussion and conclusions**

According to these findings, resort to internationalizing curricula in Iran's Higher education, is necessary. It is obvious that in present century, universities' duty is to train competent persons for life & work and response to request of international and intercultural societies, and it entails adequate knowledge of students towards different cultures & societies & respect to them. International direction of curricula in Higher education system, for both Iranian students (internationalization in home) and foreigners get the chance of learning international & inter cultural competence. In this respect, results of research on the Association of universities and colleges of Canada (Aucc), in 2006, shows that the most logical reason for internationalization is to train students who are internationally knowledgeable, and wise and be competent from intercultural point of view.

Now, Iran is in a direction that needs up to date knowledge and experts in order to present in economic competitions like education, but a balance in scientific & cultural exchanges is necessary to prevent it become a mere consumer of imports sciences. So it is better to have a productive point of view toward compilation and design of curricula that introduce Iran's culture to the world. In fact, internationalization of curricula and higher education can attract foreigners to the country and prevent intelligent people exit. In respect of flexibility, availability and high speed of distance education, based on technology in learning-teaching processes, and its ability to highlight the presence and influence of Iran's higher education in international scientific field ( based on findings of questions 7 & 8 ) that indicate common aspects of curriculum and international curricula, It seems that in case of availability of conditions, resources and infrastructure equipment sin Iran, distance education will be an effective approach, because there will be less challenges. According to results of Collis & Vander Wanda's research (2002), international students will have greater influence on their policies and institutions, in direction of using ICT & educational approaches, in the future. These new target groups need more flexibility

in transformation ways and execution of education by institutes and ICT can be an effective factor.

According to findings, the most effective factor on IOCDIHE is international cooperation's of universities.

So, acquaintance with international scientific activities and its procedures, convening educational workshops or giving educational opportunities,... in international dimensions, by interior students, is very important. Scientific cooperation of interior masters with foreign masters' cause our masters know more about other countries higher education systems and international students will be attracted to Iran's higher education by their own masters.

Ghaheri (2005) study's results and Zare'e, Fathi, Vajargah, Yamani (2009) indicate these findings.

According to research findings, because Persian language is not international and learning it is very difficult in short term, so it is a serious challenge in internationalization of curriculum in Iran's higher education. William's results (2008) emphasize on the language incompatibility for international students in host country. There are several ways to abolish these limitations such as compilation of curricula in international language, compilation of bilingual curriculum, introduce reference books and resources in international language, availability of several options linguistically to study contents, abolish legal limitations to teach in a non-Persian language...

Higher education policies in each country determine that whether higher education should be closed? Whether it should be native? Where is the place of international higher education and competent students in higher education missions? There are effective approaches such as regarding internationalization of higher education in guiding document by "High council of cultural revolution, international viewpoint of government, policy makers, programmers,... toward higher education and the need to activities in international level and experts to act in this field; accurate understanding of internationalization concept; flexibility and avoiding prejudice; priority of thought in society and understanding of global environment. Zare and al (2009) and Williams (2008) indicate these findings.

Competence of masters and managers is an important and effective factor in IOCDIHE. Lack of appropriate content is due to lingual & scientific inability of masters and lack of knowledgeable experts. This problem cause limitation in international cooperation, so improvement of specialists is necessary. Results of Vali and Etal (1997), be nick, Newby & Samuel (1996) confirm this issue.

In order to develop occupational and intercultural sensitivity of masters, starting educational workshops, educational opportunity, cooperation with masters form other cultures, doing common teaching and research efforts, can have an effective role in development of Iranian master's knowledge, experience & international attitudes. Schuerholz's results (2007) confirm this issue. In Ellingboe's study, some masters who had international experience did not have adequate cognitive change (mestenhauser & Ellingboe 1998).

Supportive service is very important, especially at the first of educational course. These supportive services consist of presentation of necessary data to attract international students, and

counseling service by intercultural counselors, support learning and use curricula in another language, help students out their training and cooperation with employers who value international skills (Walleg et al, 1997).

Another effective factor on IOCDIHE is to advertise international educational space and present capacities in and out of country. Advertisement in the country in form public opinion, specialist groups and students about its necessity & its advantages to Iran, and in international level, especially in Region, introduce Iran's history and resources and opportunities that non-Iranians can use it by attending in Iran's higher education. Fortunately by ICT, there is more possibility to inform and advertise about international higher education. There are several ways to inform international societies about university's activities and equipment's in the process of internationalization, such as establishment of University's site, catalogue,... in English language and international meetings.

In order to reach international education, political, cultural and economic dimension of a country is another effective factor. Political construction of a country influence on the acceptance of other countries' cultural patterns and designing of curricula which respect cultural differences, and may produce main limitations and barriers on its way. Over control of foreign students and masters limits international cooperation of Iran's so distance education is a good way that international students educate in Iran's higher education system without worry. Accurate understanding of internationalization process and balance in scientific, cultural exchange, prevent absorption of nation's identity. With respect to our history and history of deposition and colonization by foreign governments, there is a kind of xenophobia and distrust in our culture but in order to avoid foreigner's opportunism and receive political & social development, we must believe that foreign students and masters are our guests who can restore our culture so it is necessary to teach children how to accept other's culture.

Economic construction effects on the international efforts of higher education. Free economy, internationalization of business and markets cause higher education tend toward internationalization, and establishment & development of private higher education connect with international higher education (Fegan & Field, 2009).

Distance education has a high potential in political, cultural, economic & social changes by pass political, economic, social and cultural boundaries and internationalization of curricula in from of distance education, can be very successful. The more university has financial resources, the more it has educational equipment's. So developed universities will pay more attention to them and our universities will attract more foreign students and masters. Macklin's study (1998) in British Columbia indicated that organization's priority to invest on the internationalization, will determine their development level. International association of universities did a research in 2003 and its results confirmed this issue (Knight, 2003). There are several approaches to solve this problem such as increasing of educational budget, more attraction of foreign students to produce more revenue, increasing number of scientific board members to decrease burden of present masters and bilateral exchanges to decrease financial load of institutes.

Technical infrastructures, educational equipment's, based on technology, are necessary factors for ICT. In fact, one of special goals of organizations, is to give opportunity to international students. Ghaehri (2005), Zare' et al (2009) found out, inappropriate attention to new technology, electronic hardware equipment's are main barriers for IOC.

If Iran's higher education system wants to internationalize its curricula, it should consider its achievement possibilities, presence of skillful and famous masters, good university, especially in Region, and common culture and language similarities with neighbor countries, are suitable opportunities that can attract many applicants from Region's countries. Facilities and equipment's of ICT and distance education approach, in addition to good advertisement and establishment of figurative higher education centers with the participation of other credible universities, help Iran's higher education system to introduce itself to the world and increase its scientific potential.

In order to internationalize curricula, knowledge about other countries' higher education system, comparative study about curricula, membership in international and regional higher education conversions and establishment of thought rooms which is composed of interior & international specialists, are helpful approaches that determine weakness and strength of present curricula and change them to international and inter cultural curricula. The first step into internationalize Iran's higher education system is to search common interest and goals in Region and start common educational course in figurative from.

It is notable that there should be a place for a specialized establishment in science department in order to internationalized higher education.

Internationalization of curricula entails determination of proper subjects. Findings indicate that subjects like experimental science and basic science are suitable subjects because they have less cultural debates than the humanities. Results of research about international universities associations, confirm it (knight, 2003), but experimental & basic science in Iran are translation so in order to internationalize curricula, there should be more productive & research efforts. These subjects need technical, hardware & software infrastructures in distance education system. Iranian sciences depend on its culture & civilization and have less experimental nature so have more chance to internationalize. In order to train students who are competent internationally, there should be a content that is up-to-date and made of different scientific and cultural resources and be understandable & applicable for different learners. Such contents are designed base on different learning approaches and are presented on line. Considering learner's differences, especially interior learner & foreign learner, is very important in formation of content. Learning-teaching and evaluation methods should have more flexibility & center-learner principle should be considered. Flexibility in use of different methods such as lecture, debate, questioning, project, training, laboratory, film, video conference, figurative debate room, figurative visit from historical places,... according to major & subjects, help to reduce problems of lingual, education, cultural and incompatibility of international students. William's results confirm this issue. It is notable that emphasis on achievement to metacognitive, critical education & training & active learning encourage students to do critical search & analysis and expand their intercultural skills and know edge. This principle change their though and viewpoint and this is the ideal form for exchangeable approach. In exchangeable approach to IOC, main change in material and way of teaching will be considered. Because, main part of approaches and activities in field curricula (question7) are based on this approach, and according to statistic, they are effective on IOCDIHE, it seems that select approach for IOCDIHE is exchangeable one. Exchangeable approach allows students and teacher to share power by learning from each other. Bound's study (2006) shows that multilingual masters and those who live in another culture or have studied about them, make more effort to challenge student's backgrounds & know ledges.

Present and main approaches in curricula of Iran's higher education are far from research, exploratory, analytical, critical approaches and even in figurative environments, are based on lectures, text translation, and pamphlets and are not update, so serious review and study is necessary.

Ghaheri (2005), Zare` ET al (2009) they confirms this issue. Distance education environment have more equipment & flexibility than conventional learning environment and have less cultural and ethnic prejudice and based on its common and center learner nature, is successful to prevent biased conflicts. Studies show that giving selection right to student to do their assignments, researches and projects and diversity of evaluation methods, can help intercultural approach enter curricula. In addition to final exam, class activities, researches and projects... should be considered.

In present process of globalization of higher education is in order to reach scientific power and presence in international levels. Use of distance education approach and figurative and electronic media to present curricula, are the best way to internationalize curricula of Iran's higher education system. Flexibility, availability and high productivity of this kind of educational environment make it a good option to change material and teaching method, which internationalize curricula of Iran's higher education, and with respect to environmental factors, resources, equipment's, limitations and opportunities, it can be used independently or in a blended from, but with respect to cognitive & motivational barriers to distance education as a considerable approach in learning, nationally or internationally, and lack of infer structures, financial & human resources, in order to use it perfectly, the best way is to use distance approach alongside present education or blended learning.

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*The Production of Learning Space: A Spatial-Social Study of Higher Education  
Institutions in Hong Kong's Local Communities*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

Articulating the concepts of community, architecture and learning in a spatial-social approach and framing them into the discourses of Lefebvre's 'production of space', Bachelard's 'the poetics of space', Bourdieu's '*habitus*' and de Certeau's 'practice of everyday life', this paper argues how synergies can be derived by locating the higher education institutions, in particular, the community colleges in the local communities in Hong Kong. Looking from a sociological perspective, this paper argues that the specific cultures, the richness of the activities and complexities of the surroundings in local neighborhoods would make the community, architecture and learning meaningful. This concept of '*sans frontieres*' may shed lights to position the social role of the community colleges in Hong Kong for the mutual benefits of both the colleges' students and the once segregated underprivileged groups. It is hoped that the results of this study will further articulate the concept of community college and its social responsibilities to enable equal access of knowledge to the public mass for the betterment of community life and social cohesion.

*Keywords: changing role of higher education, community college, production of space, social cohesion.*

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### **The changing roles of the higher education institutions**

The concept of higher education institution has changed gradually over the centuries. Higher education institutions were once restricted to the privileged people: those who were rich, elite and of nobility. In the old days, universities around the world, as we have known and seen, were built in the style of castles and isolated themselves from the mass public behind the tall and sturdy red brick walls. There were slim chances for the less privileged people to receive any forms of higher education in those institutions. Addressing the issues of equality and the rights for education, voices to liberate higher education to the under privileged were widely heard. To tackle these proclamations, the initiative to create a university-affiliated six-year high school and two year college, named “junior colleges” was first developed by William Rainey Harper, founding president of the University of Chicago as a preparatory programme in the late 19<sup>th</sup> century. This prototype of community college movement had revolutionized the higher education sector and provide “a gateway for those on the verge of enrolling in college: older students, those who cannot afford to attend full-time, and those who need to develop their basic skills” (Kane and Rouse, 1999, p81). Community college as suggested by Harper acted as a stepping stone for the public mass to proceed to the arena of higher education. Studies have found that community colleges not only benefited the public mass but at the same time also provided access to the less academic achievers so as to prepare them for further study in the university. Grubb finds that “The lower fees and open-access policies at community colleges have broadened access to postsecondary education for student facing such barriers to entry as poor academic performance in high school, limited English-language skills or other basic skill deficiencies, or financial hardship” (Grubb, 1999 in Hoachlander, Sikora and Horn, 2003, p. 121). Fusch expresses his view that “the two-year college, with its flexibility and open admission, has provided opportunities for disadvantaged individuals who might otherwise not attend college” and to “educate students and encourage students to become active and responsible citizens” (Fusch, 1996 in Bryant, 2012, p.77). On a social perspective, community college also “offer[s] opportunity and access [to] provid[e] students with social mobility as well as the chance to flourish academically and personality” (Byrant, 2012, p.89). Following the same vein, Kwiek asserts that as higher education gradually began to pass from its elite to mass to its near-universal participation model, higher education institutions need to redefine their social role and should look into what is going on in the public sphere in terms of political, social-economical and cultural dimensions (Kwiek,2001). Given the above, dialogues and interactions between the higher education institutions, the communities and the public are the essential needs.

### **The production of space**

Bachelard, in his 1964 classic “The Poetics of Space” suggests that space should not be looked at as primarily a container of three-dimensional objects; space should be studied as ‘topoanalysis’ to understand how it accommodates human consciousness to reveal the value of intimacy (Bachelard, cited in Ockman, 1998). Michel de Certeau has an insightful suggestion on space, asserts that space is a place made meaningful through contextualization; “space occurs as the effect produced by the operations that orient it, situate it, temporalise it, and make it function in a polyvalent unity of conflictual programmes or contractual proximities... [space] is modified by the transformations caused by successive contexts... space is a practiced place” and ultimately; space is a problem of representation (de Certeau, 1984, cited in Leach, 2002, p.129). Fortier claims that space is demarcated by individuals or groups by appropriations then evolved into repetitious rituals to create enactments and belongings as the end products of performativity (Fortier, 1999 in Leach, 2002). Bourdieu’s concept of *habitus* suggests that one should carefully inspect the “material practices of everyday culture”, as well the realms of the symbolic and the historical for an understanding of everyday life (Bourdieu, 1985 in Robbins, 2002). Garfinkel endorses semiotic analysis of signs because they function as “marks and indications” (Garfinkel, 1967 cited in Conroy, 2010, p.74). Bourdieu further interprets ‘habitus’: the conscious reflection or finding ourselves, as “a dynamic field of behaviour, of position-taking, when individuals inherit the parameters of a given situation and modify them into a new situation... an interaction between a social behaviour and a given objectified condition” (Bourdieu in Robbins, 2002). Given the above, Bourdieu thinks that architecture and objects can be understood as “objectivated cultural capital” and their cultural values are waiting to be revived, to be unlocked in order to establish new meanings (Bourdieu in Robbins, 2002). According to Lefebvre, space has a complex character and enters social relations at all levels, there is also a relationship between power and space. Lefebvre (1991) in his ‘the production of space’ proposes a three-dimensional framework to analyse space:

- 1) the conceived space: the formal representation of the space (mental imaging)
- 2) the perceived space: the various spatial practices; (perception of built forms) and
- 3) the lived space: the experiences and interpretations of the users (social practice).

Framing the above concepts of space in to the changing role of community college suggests that it is important for community colleges to involve different stakeholders such as the teachers, students and the residents of the community to feel, to immerse into the architecture, the environment, the facilities and activities to generate

knowledge through dialogues and interactions by regarding learning as a 'practice of everyday life' so as to produce a preferable learning space for the communities. It is argued that the views collected from the different stakeholders after their daily practices of the architecture will be able to shed lights to redefine the social role of the community college. A glance at the community colleges in North America reveals that they not only provide higher education opportunities to students that leave afar and facilities not easily access, but also equity of access and indirectly to nurture and sustain local or regional culture. They also carry social roles to "assist in community development by offering programmes of community education and service. In rural areas, [community college] will serve as a mechanism for the maintenance and development of a viable way of life" (Faris, Report and Saskatchewan, 1972, p.59). Bryson once praised the open campus of the Dartmouth University in the United States, "none of its grounds are off limits to us. Indeed, much of it is open to the community. We can use the library, attend its concerts, go to its commencement exercises if we want. One of my daughters skates on the college ice rink. My son's high school track team practices in winter on the college's indoor track. The college film society regularly puts on seasons of movies, which I often attend. Just last night I saw North by Northwest on a big screen with one of my teenagers, and afterwards we had coffee and cheesecake in the student cafeteria" (Bryson, 1998, p.190). Bryson's experiences further pointed out that the architecture, facilities and activities of higher education institutions can act as a distinctive platform to preserve history, culture, to facilitate learning and to promote mutual interactions in the community. The concepts of '*sans frontieres*', 'no barriers' and 'no walls' of equal access to higher education institutions in a way to nurture the culture of the production of learning space for the betterment of community life and social cohesion.

### **Buildings are media of intentions, passions and actions**

Buildings tell stories; they can also be read as if they were texts to generate multiplicity of meanings-the multivocality of readings, the interpretations of different stakeholders (Dvora, 1995). Peltonen also contends that architecture has the power to convert ideas of organizational forms into material shapes leading to distinct social relations and identities; they are open to be appropriated and framed by the users in their everyday uses (Peltonen, 2011). In this sense, the buildings of education institutions are media of intentions, passions and actions. Such places provide a forum and "a focus where we experience meaningful events of our existence ... it is in this spatial and social ecology of work... in which organization and their members pursue their interests, accomplish their purpose, communicate, and operate

practically” (Kupers, 2010, p.82, citing Norberg-Schulz, 1971, and Gorawara-Bhat, 2000). The richness of the activities and complexities of the surroundings in the neighborhood are amongst the things that make the place meaningful. The cultural interactions in the neighborhood reflect “social reality as constructed through actors’ practical accomplishments and the meaning of social phenomenon as resulting from the actors’ construction and negotiation of their interpretations” (Holy, 1987 as cited in Vertovec, 1999, p.24). Therefore, it has been argued in this paper that the location and architectures of the institutes can be read as social activities and real life dramas that can provide a better understanding of the roles of these institutes.

### **The Hong Kong experience: Educational reform and the government’s policy**

The consultation document named ‘Learning for Life - Framework of Education Reform’ was published in September 1999 by the Education Commission of Hong Kong with an aim to develop a “diversified, multi-channel, multi-layer higher education system” (Education Commission, HKSAR, 2000). A further step was taken in 2001 when the Chief Executive Office of Hong Kong announced “to increase the local tertiary education opportunities of the relevant age cohort from the existing 30% to a target of 60% within a period of ten years”. It was hoped that higher education will no longer be confined to the small elite group but also accessible to the mass population.

The encouragement of global education in the Hong Kong education system is a major challenge for the Hong Kong government to build a city of equality and harmonious (Sawan, 2008). Hong Kong has been enacting legislations on human rights and anti-discrimination policies in order to eliminate discrimination and ensure equal rights and opportunities amongst different social classes and races. To ensure fair opportunities for all students to excel and to minimize the “social inequality, the inclusive concept arose from the “Reform Proposal for the Education System in Hong Kong” was first promulgated in 2000 to cater for student differences. The objectives of the “no losers” and “teaching without discrimination” education initiatives aim to enable different varieties of students to receive education in equal footing despite of their social status. The first badges of Hong Kong community colleges emerged in 2000, offering self-financing Associate Degree [AD] programmes with an aim to develop a more diversified higher education structure. “By the autumn semester of 2001, nearly all tertiary institutions in Hong Kong are offering AD programmes” (Lee and Young, 2010, p.153). Government statistics revealed that in 2002, the total number of self-finance recognized Associate Degree places was around 3840. Because of the keen competitions and demands, in a time span of 10 years, there are

more than 20,000 self-financing Associate Degree or Higher Diploma places available by different tertiary institutions in 2012.

### **The unique nature of “community college” in Hong Kong**

It is interesting when one tries to interpret the term of ‘community college’ in Hong Kong. As mentioned earlier and using Bryson’s experience on Dartmouth University as an example, community college in North America or Europe bears a role to provide services to the residents of the community besides their functions of a higher education institution. However, community colleges in Hong Kong seem to have a common political aim: that is to fulfill the government’s need to increase the local tertiary education opportunities to a target of 60% in ten years’ time. On the bright side, the rapid increase of community colleges and its available self-financed programmes provide chances for different varieties of students to receive education but on a closer look, some of the programmes are profit-making and established without discreet planning to become a ‘college for the community’. Addressing the problem, Yung argues that “similarly, there were queries on the feasibility and effectiveness of setting community colleges based on geographical locations of the community, since the proximity of communities, population density, and the well developed mass transportation system of Hong Kong reduces the heterogeneity of community college in different communities. Indeed, not many people realized that community college carries a wide range of educational functions and missions as university performs” (Yung, 2002, p.34). Without any doubt, the experience of active life and interactions between the colleges and the communities can become “the embryo of culture life of a community” (Yung, 2002, p.36). Now, the question remains:

How possibly higher education institutions in Hong Kong, in particular, the community colleges, can take up the role to generate, regenerate, preserve or conserve the local architectures and at the same time nurture cultural interactions and learning in the communities?

### **Data collection and analysis**

A photo-ethnographic study was adopted. The data of this study was collected from a variety of sources in a span of three stages. Theoretical literature, government policy documents, district and architectural planning materials were reviewed in the first stage to generate the argument of this study. Photo-ethnographic studies of the locations, communities and the buildings of the two institutions were conducted in the second stage to observe the facilities and activities in the institutions and the

communities. This was followed by the interviews with different stakeholders (the senior management teams of the institutions, the users of the buildings, the neighbors and general public) in the third stage for a better understanding of their views on how possibly higher education institutions can take up the role to generate, regenerate, preserve or conserve the local architectures and at the same time nurture cultural interactions and mutual learning in the communities. A spatial-social approach was used for data analysis.

### **Research design and method**

Two higher education institutions each with different academic and cultural backgrounds located in Hong Kong are selected as the cases for this study. They are being selected because of their distinctive backgrounds and geographical locations. The first one is an American Art and Design University, the Savannah College of Art and Design (SCAD), resided in a former magistracy building in Sham Shui Po, North Kowloon while the second one is a vocational design training school, the Hong Kong Design Institute (HKDI), with her state of the art design building located in a newly developed neighborhood Tseung Kwan O in the New Territories. At the time of writing, the empirical work of this study is in progress because the availability of the students in the two participated institutions was limited by the summer vacation. Up till now, literature reviews, photo-ethnographic studies of the locations, communities and the buildings of the two institutions and the interviews with the two institutions' senior managements (the Assistance Vice President of SCAD and the head of department, one lecturer and one officer of HKDI) had been carried out. Shortly before the write up of this essay, a focus group composed of six of the HKDI's students was also conducted to collect views on their perceptions and their practical uses of the building. Further interviews will be conducted in the coming months in order to get holistic views and perspectives from the remaining stakeholders: the residents of the communities and if possible, the district councils' officials.

### **The photo-ethnographic study in SCAD**

With a structured questionnaire, the researcher first conducted a one hour interview with the Assistance Vice President of SCAD then used two hours for photo-ethnographic data collection in SCAD's building. After the data collection in SCAD, the researcher spent another two hours in the neighbourhood to observe, to feel and took photographs to get an understanding of the community. Responses to the questionnaire's item *1) about the community and surroundings* reveal that the Sham Shui Po community in which SCAD located is a "densely populated district, surrounded with poor and migrant families and lesser social economical status

residents” but interestingly, the district “is famous for technological gadgets; it is the biggest computer outlet in Hong Kong”. In a way, Sham Shui Po “is a well preserved community because of less tourism, not like areas such as Tsim Sha Tsui or Mong Kok; it is not new to hear that some say tourism is the best way to preserve culture, but in Sham Shui Po, it is different and all these made an interesting composition and unique culture of the district”. The above suggests that the community where SCAD located is a densely populated community with distinctive culture and residents. A short walk and observation in the community further support the responses, as showed in photo 1, streets are crowded with residents and shoppers for electric and computer gadgets as well as street wanderers.



*Photo 1. The Sham Shui Po community.*

Responses to the questionnaire’s item 2) *about the architecture* state that the location of SCAD “is a historical building and in the 1960’s it served as a court house as one of nine Kowloon districts and it is an iconic authority building” (photo 2, 3).



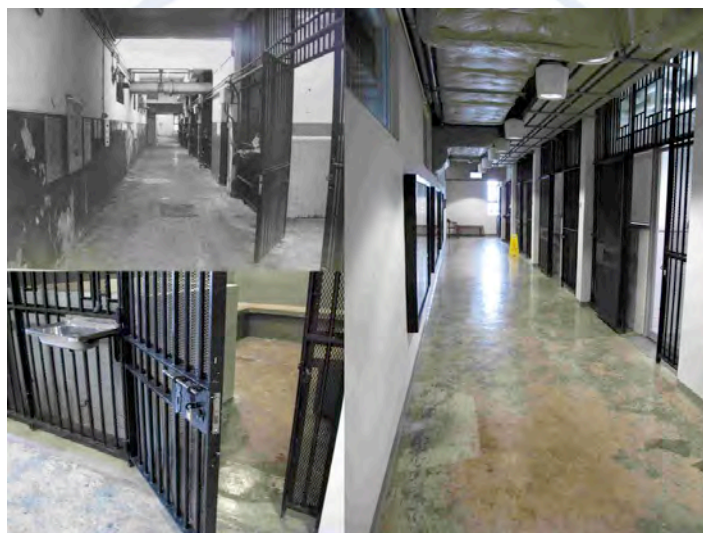
*Photo 2. The building of SCAD is a historical building and it served as the North Kowloon Magistracy in the 1960's.*



*Photo 3. SCAD Hong Kong*

It was told by the Assistance Vice President of SCAD that in 2005, under the development bureau revitalization scheme, the building was opened for leasing by inviting different parties to participate in the building's regeneration and the HK government asserted that the building is best and appropriate for education purposes, of which SCAD as a university for its reputation in cultural and architecture preservation, won the competition. It was also told that "it is coincident that one of

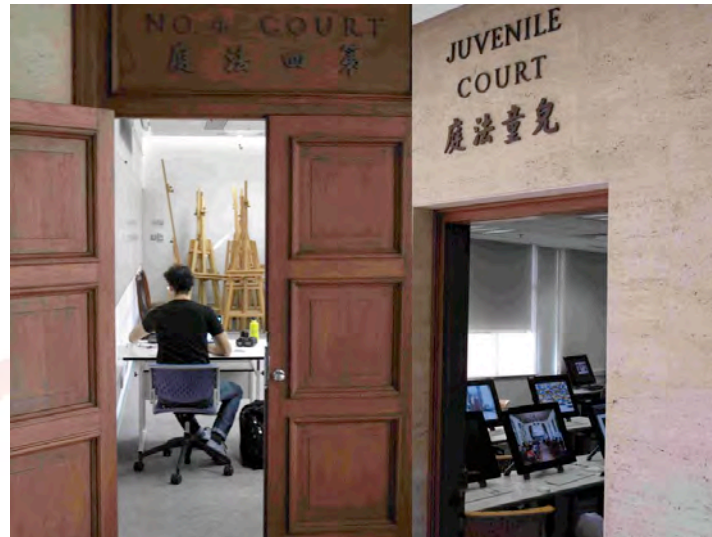
SCAD's buildings in the States was a former armory military building, same as this North Kowloon Courthouse, the architecture also represents a once authoritative institute. It reveals that "architecture preserves memories, and when infuses with education, it passes on the culture and history to nurture the next generation". Responses also reveal that "in general, the community and the government are pleased with SCAD's management and maintenances of the building". It is pleased to see that SCAD have preserved one major courthouse, one jail cell as was together with all the historical elements and details of the buildings and they have "renovated the rest of the building and changes the functions of the rooms into classrooms, art studios and galleries for our teaching purposes (Photo 4, 5, 6, 7). It is obvious that SCAD is using the building as a platform to promote cultural interactions with our faculties and students".



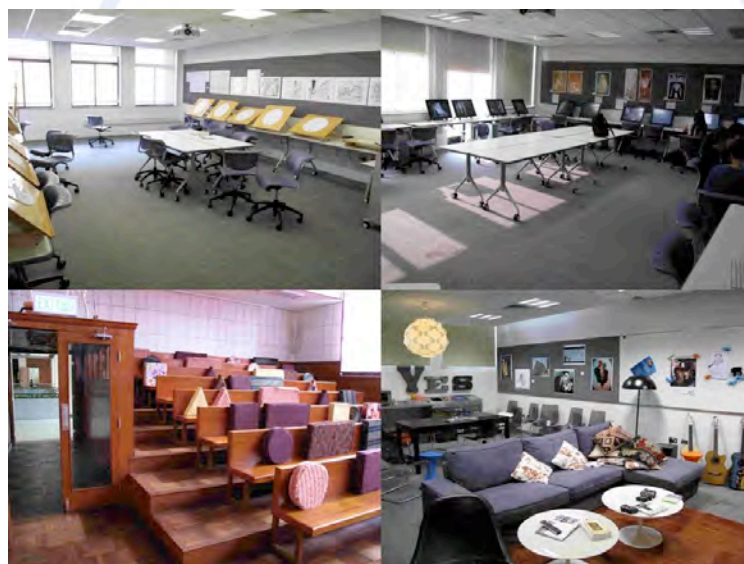
*Photo 4. The jail cells are preserved.*



*Photo 5. The court houses are preserved and turned into lecture halls and studios.*



*Photo 6. The court houses are preserved and turned into lecture halls and studios.*



*Photo 7. The court houses are preserved and turned into lecture halls and studios.*

### **The photo-ethnographic study in HKDI**

With a structured questionnaire, the researcher first conducted a one hour interview with the head of department, a lecturer and an officer of HKDI before using two hours for photo-ethnographic data collection in HKDI's buildings (Photo 8).



*Photo 8. HKDI's building*

After the data collection in HKDI, the researcher spent another two hours in the neighbourhood to observe, to feel and took photographs to get an understanding of the community. Responses to the questionnaire's item 1) *about the community and surroundings* reveal that the district of Tseung Kwan O “geographically, it is a reclamation land, in the past, it was fish villages and dock yards; the demographic of this community is very diverse. It is a mixed class community composed of local residents (former fisherman), new middle class and the new immigrants as well as the mental recovery people (from the community's shelters)”. It was also learnt from HKDI's management that “the most distinctive distribution is the high class complexes verses the public housing, interestingly, they are using the same facilities such as the transportation, supermarket, shopping mall, to name a few” as shown in Photo 9 and 10.



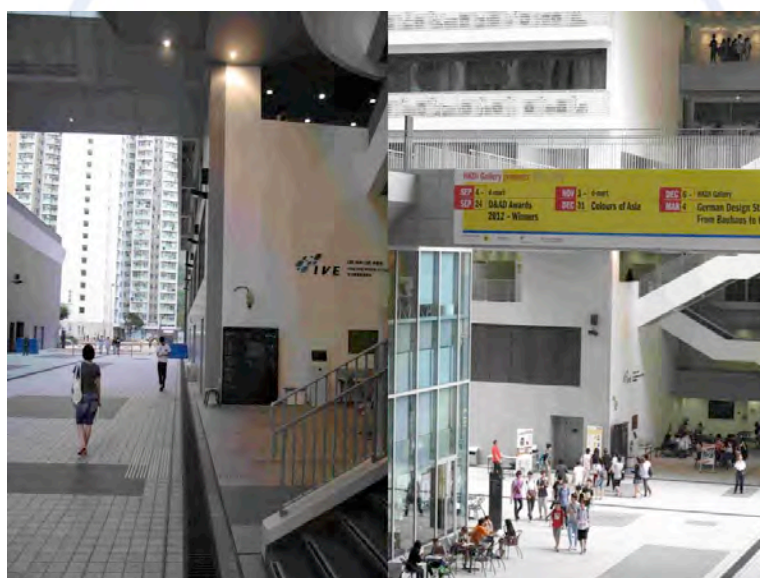
*Photo 9. The mixed groups: high class complex verses the public housing*



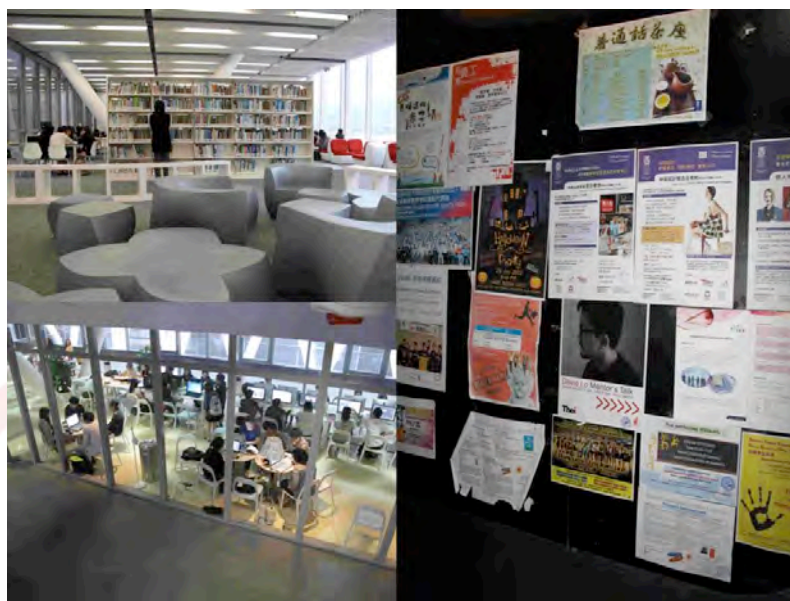
*Photo10. The mixed groups of residents are sharing the same facilities*

To answer the questionnaire item 2) *about the architecture*, all of the respondents regarded HKDI “is a new building established in 2010, it acts as a city spot, a landmark for the community and Hong Kong and the institute could be a platform to gather and draw attentions of the local residents but on the synergy and mutual learning level, there are a lot more to be done”. It was also told that there is a plan to expand the architecture into the green, landscape and sustainable design but in the short term there may not be any renovation because this is a relative new building.

In additional to the interview with HKDI's management, a focus group interview of six students was conducted using a structured questionnaire in order to see their perceptions of the architecture and whether they are benefited from the interactions with the community. When asking them the significance of this architecture, most of them responded that this is a famous architecture and they are proud to study in this building. On the design of the building, one student said "it is a special building; the view is spectacular, especially the big square opening in the middle. The window structure is impressive and amazed me during my interview". In general, most of them agreed that the building has a good view and emotionally, it offers psychological and learning motivation and they feel comfortable to study here. When asking them whether the institute environment is able to nurture learning, most of them said the architecture signifies a relaxing atmosphere, spacious structure, the open space to rest and for discussions, e.g. the podium and the boulevard (Photo 11 and 12).



*Photo 11. Views of the campus and facilities in HKDI*



*Photo 12. Views of the campus and facilities in HKDI*

They all agreed that they can experience the cultural environment from the open campus and benefited from the services such as the cafe, the library, the 24-hours study zone. One student said “I realised that there is no dormitory, I understand that some students have to travel a long way to school and therefore they have prepared their sleeping bags in case they need to stay over”. It is learnt that from the responses that for the interviewees the most distinctive facilities in this architecture complex are “the natural feeling, with lights, and the concept of a green building” and “it is not only for design, it is a mobile learning space to open up eyes because it has shows and it has its elasticity for different occasions to enable me to understand others through the interactions with them”. On the other hand, they expressed negative comments on the facilities and administrative procedures. One the one of the students felt that “the architecture is pretty but personally, there are many downsides on the building, for examples, there are many rules and regulations on using the facilities”. One student carried on and said “sometimes I feel the architect is just like a shell, the exterior is ok but it does not really take care of students’ learning; for examples, a lot of spaces and facilities are open for public use, like the swimming pool or else, may be it is the school’s strategies to open up the school for public but I think it should focuses more on students’ needs by improving its administration policy”. She continued “there should be more facilities, especially for art students. Sometimes I feel the bureaucratic structure that the use of facilities needs a lot of administrative procedures”. Another student expressed her view that “the campus is small, not spacious enough, it needs more rooms. Other than those, it feels good to study in a place like that, with open space and garden on the 2<sup>nd</sup> floor and 9<sup>th</sup> floor”.

Responses from the question: do you consider the institute a hub for you to know the community? Most of them said “in certain way, yes but it is limited to art groups. The institute is relatively new, even my friends live in this district do not know the campus. The residents do not have special feelings to it because in this community, the people are of average education level, the exhibitions are too high soundings and hard for them to join and enjoy”. They suggested that “the boulevard should open up for performance arts so that people can join, for example, more events such as band and music shows and they think the school should be responsible for the community but it really depends on the objectives of the school. In addition, they think the surroundings in the neighbourhood do not benefit and inspire them; other than that, one student said she always heard complaints from the residents.

Addressing the roles of students and the institution in this community to nurture cultural interactions and mutual learning, one student said she “simultaneously act the roles as student/visitor so as to voice for and share with the community and she will first start by influencing my friends that live here. The students also believed that “interactions will generate learning community on different levels, for examples, talk to others or local people to get their views” and it is good cultural exchanges between different community, district, residents and stakeholders but it needs strategies to achieve the no barriers, no walls learning community because there may be misunderstandings, segregations, preconceptions between the stakeholders. For them, it is possible to use the architecture of the institute as a platform and synergies to nurture mutual learning. However and once again, they think it needs a lot of understanding and latitude/elasticity between the school and community and residents to overcome the blind spots that create discrepancies so that we can accept each others to enable social cohesion.

### **Preliminary findings and discussions**

A few noteworthy points were found from the collected data and ethnographic studies.

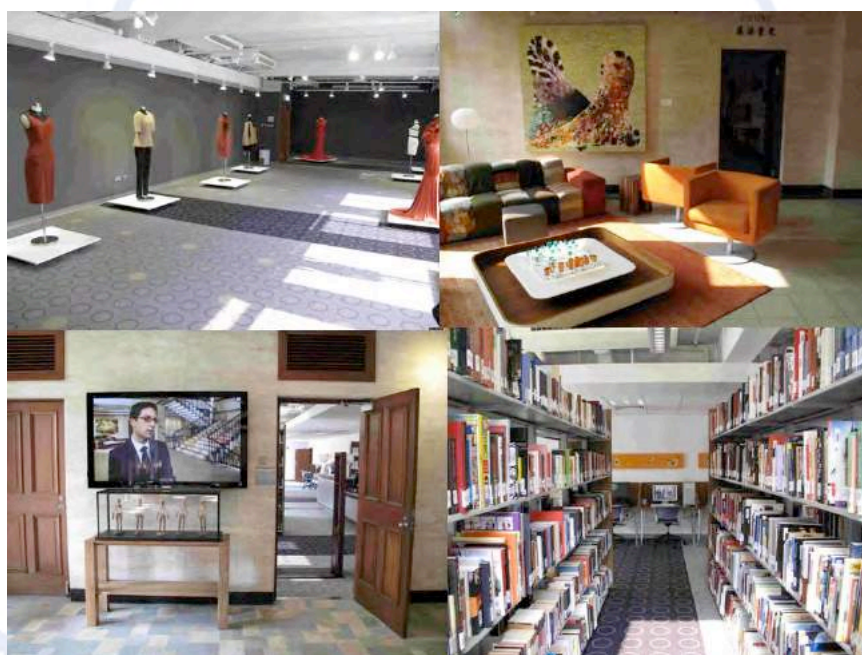
#### *1) Both institutes participate in serving the local communities*

It is realised both if the two participated institutions see participating in local communities tie to their vision and aim. For SCAD, “it is tied to its vision, using the locations as environment strategy and extra curriculum, it acts as a community university in the Hong Kong community and prepares for the extensions in Asian cities, for examples, Shanghai, China and we definitely look outwards into the community and see what else can be done”. Although right from the beginning

HKDI was not meant to be a community college to serve the community, however, it is pleased to know that HKDI has started working on projects with the community in 2011 so as to encourage their staff and students to interact with the residents.

*2) Services have been provided to the community by both institutes*

In order to reach out to the communities, a variety of services have been provided to the public by the two institutions. It is told that SCAD's services are down to earth and work closely with district council to disseminate the message to the community. SCAD has public tour daily and special arranged tour one Saturday each month and the library and galleries are open to the community. Public lectures, fine arts exhibitions and symposiums to cater for broad-based visitors". In addition, spaces and facilities are open to different bodies, for example, the Sham Shui Po police force once used SCAD's facilities for training.



*Photo 13. SCAD's facilities such as galleries and libraries are open to public*

With its specific geography location and the newly established campus, HKDI maintains a semi-open campus and the facilities such as the canteen, the cafe, the swimming pool, exhibition halls and at one time the basketball courts are open for the residents; more will be gradually open to the public because of the security, facility management and the resources issues. While touring in HKDI's campus, it was delighted to find that the ground floor boulevard provides an open passage to

the residents as a short cut from the MTR station to the public housing estates and there is a foot bridge built to link the shopping mall and the institution. Physically, the facilities enable links with the communities to facilitate interactions between the institution and the residents.



*Photo 14. HKDI's facilities such as galleries and cafe and swimming pool are open to public*

### *3) Interactions with the community benefit the student and residents*

Responses reveal that in general, the two institutions agreed that there are mutual benefits resulted from the interactions between the students and the residents. SCAD regarded "the interactions help to break down barriers by exposing students to east and west culture. It also uplifts, aspires and inspires the community by infusing the students into the community. It is also a good experience for the international or local students to understand the specific culture through the interactions between the students and the locals, to generate insights and reflections". It is also interesting to find that mutual acceptance between the students and the communities as the local restaurants start to have English menu to cater for SCAD's students and that signifies the constant interactions and mutual influences between the students and the community. It is also seen that the appreciation of design, the changes in English and Chinese types and the sustainable design by the residents and shop owners as results of the exposure of SCAD's services to the community.

HKDI provides the residents a place to enjoy their leisure time but the management admitted that they are not able to satisfy all the needs requested by the district council and the residents. Despite that, HKDI endeavours to provide activities to benefit the community and with a hope to upgrade the residents' awareness of design. The exhibitions are means to generate interactions between the students and the residents, for example, it was told that "HKDI once had a toy exhibition and the local residents were happy with that because the residents can save travel time and money to travel to the museums in the city".

*4) Both institutions are aware of their social role in the communities*

Social role in the communities is important to the two institutions. Both institutions want to have more proactive involvements with the community with the participation of their students to support the community services so as to raise the students' awareness of the community's diversified groups and societal needs. For example, SCAD are trying to change people's perception that SCAD is a noble and expansive design school and the school is servicing the community and using design as a means to benefit everybody. SCAD had held a number of summer workshops for the teens in collaborations with the district's secondary schools and SCAD is receiving a lot of requests of short course from schools and other NGOs. HKDI has been organizing social innovation projects to connect the institution with the community so as to improve community life and generate a better living environment; it is also learnt that HKDI is planning to provide more in service trainings for the local residents to cater for the local residents' needs.

*5) The 'no barriers' or 'no walls' education to enable equal access of knowledge for the betterment of community life and social cohesion are built on mutual understandings*

Although the concept of 'no barriers' and 'no walls' education is necessary and important to the learning process to enable a free flow of conversations of what is inside and outside the "walls" because it is what actually happening out there; however, attention should be focused on the risks of misunderstandings between the institution and the community to avoid miscommunications. Both institutions agreed that it needs mutual objectives to steer the directions that tie to the institutions' missions, visions and the activities to enable the equal access of knowledge. Given that, the AVP of SCAD contended that "a friendly presentation of the building and the role of being a community university is important, especially it is crucial to maintain the 'fabric' that contains the stories of the architecture, to promote interactions and mutual learning" and interviewees from

HKDI expressed the view that “there should be more exposure to the residents as well as to the other HK communities as well as an international recognition. It is also beneficial to establish art culture in the district to increase community value. Because of that, it was suggested that the activities should also aim to involve interested parties and stakeholders, such as parents and their children as well as the Bianchi design school located across HKDI in order to form a creative hub in the district through this synergy.

*6) Space is subjected to the social practice, experiences and interpretations of the users*

The findings further confirm Lefebvre’s concept of ‘the production of space’. The conceived space, which is the mental image of the higher education institutions have been changed from the once elite space for the privileged to the current user-friendly place to benefit the equal access of education for the public mass. At the same time, the perceived space: the various spatial practices of the architecture are under constant changes and the usages are subjected to the social practice, experiences and interpretations of the users. It is realised that the two institutions use their buildings to act as platforms to promote interactions between the students and the residents. Responses from the interviews further reveals that both institutions maintain open views on the usages of the buildings with a hope to utilise the possibility of a free flow of conversations of what is inside and outside the “walls”. It is also by the constant interactions between the institutions and the communities that enable the ‘production of the learning space’. As such, this asserts that space is subjected to the social practice, experiences and interpretations of the users.

**Limitation and Further work**

The limitations of this study rest in the similar nature of the two participated institutions. The two institutions both offer art and design programmes and in common practice, art and design institutions tend to be more proactive in cultural exchanges with the communities. It is not to say that institutions that offer humanities, engineering, science or business programmes do not normally participate in community activities but to the best of the researcher’s knowledge, they may maintain a low profile and thus such interaction activities are not observed. It is also hoped that more institutions with diverse teaching programmes will participate in this research. Efforts were made to contact a number of institutions but without any surprise, most of the institutions are reluctant or not interested to participate in this study. After all, as the study is still on-going, further interviews with the district

council, the daily users: the students and the communities' residents will be conducted and it is expecting that the interviews can be arranged in the coming months.

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*Schooling Experience of Asian Immigrant High School Students in the Midwest:  
Language, Identity, and Racialization*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012



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## Introduction

According to the 2009 American Community Survey, the population of Asians, including both Asian Americans and Asians who are temporarily present in the USA, reached approximately 15.7 million in 2009 (U.S. Census Bureau, 2010). The percentage of the population of Asians in the USA from 2000 to 2009 reached approximately 32%. Accordingly, the number of school age children and adolescents of Asian descent has also grown significantly (Yeh & Inoue, 2002; Johnson & Lichter, 2010). The population of Asian immigrants in the USA is expected to continue to grow in the future (Frisbe, Cho, & Hummer, 2001; Johnson & Lichter, 2010).

Although the foreign-born population is still concentrated in “gateway states” (i.e., California, Florida, Illinois, New Jersey, New York, and Texas), the number of foreign-born residents who moved to non-gateway states grew by roughly 15% between 1995 and 2000 (Hempstead, 2007). That is to say, the population of immigrant children and youth has increased throughout the USA. For example, according to Census 2000, the number of Asians who were present in the state of Indiana in 2000 was 59,126 (U.S. Census Bureau, 2000). In 2009, the number had reached 90,593 (U.S. Census Bureau, 2010). This growth demonstrates that the Asian population in the Midwest has steadily increased in recent years. With the growth of the Asian population in the USA, research on Asian immigrant youth in gateway states such as California (Feliciano, 2001; Le & Stockdale, 2005; Zhou, & Kim, 2006) and New York (Bhattacharya, 2000; Lew, 2007; Rosenbloom & Way, 2004) has increased. Despite the rise in the Asian population in the Midwest, however, little is known about the schooling experience of Asian immigrant high school students in this region of the USA. Kincheloe and Pinar (1991) state that “place” is a key element that has an effect on how a student undergoes his or her schooling experience and develops his or her educational knowledge because a place, such as the Midwest, holds its own social, cultural, historical and educational characteristics. The linkage between the Midwest and education as well as the educational experiences of Asian immigrant students is a neglected research area that needs to be examined.

In addition, the voices of Asian immigrant high school students on their educational experiences are often overlooked in the discourse of educational equity (Kumashiro, 2005; Xu, Connelly, He & Phillion, 2007). Thus, examinations of Asian immigrant youths’ educational experience in the Midwest are urgently needed in order to understand and address their educational needs.

## Research Questions

The foundational research question for this study is: *What is it like to be an Asian high school student in the Midwest?* This question is the driving force that prompted me to design as well as execute this study, which I will further discuss in chapter three. What I present in this dissertation is a compilation of my descriptive and analytical work in responding to the foundational research question.

Three related questions derive from this foundational question: (1) How do bicultural/bilingual Asian students construct and maintain their identities?; (2) How do they perceive their

relationships with school, curriculum, peers, teachers, and family?; and (3) What do they think is important in their high school life?

### Theoretical Perspectives

Through an extensive review of the literature I found two important theoretical perspectives. First, the research has pointed to the fact that the current racial stereotypes of Asians such as the model minority image, which have been constructed by racial ideology embedded in US society (Winant, 2004), are problematic entities that hinder people from becoming aware of the academic and psychological problems that some of Asian immigrant youth currently have (Kim & Yeh, 2002). Martinot (2003) explained that the idea of racialization lies in the concept that race is a socially and historically constructed category and it is a phenomenon that people racially classify other people based on their physical characteristics such as skin color and begin to impose racial interpretations, in other words racial stereotypes, on each racial group. Additionally, Webster (1992) pointed to the fact that the process of racialization is notably affected by the concept of white supremacy entrenched in US society, which indicates that white people are superior to other racial groups. In examining what it is like to be an Asian high school student, it is imperative to scrutinize the concept of racialization since the racial stereotypes seem to have an impact on Asian immigrant youths' schooling experience.

### Literature Review

#### *The "Problematic" Model Minority Image*

Commonly, Asian Americans are described as model minorities due to their academic attainment and economic success (Jo, 2004; Kawai, 2005; Lee, 1994, 1996; Ng, et al., 2007). Extensive research examines whether Asian American students' academic success is atypical by contrasting them to other minority groups' and White Americans' academic achievement (Bhattacharya, 2001). Regardless of the outcomes of this research, however, the model minority stereotypes are embedded in US society. This model minority image constructs and perpetuates both positive and negative representations of the Asian population in the USA such as viewing them as high achievers, hard workers, submissive, or quiet and nerdy (Kim & Yeh, 2002; Lee, 1996). The literature suggests that despite the model minority image, Asian students' actual social status has not improved over the years. The model minority image is, in reality, a problematic construct for many Asian immigrants in the educational milieu (Endo, 2009).

The positive image of Asian Americans began appearing in the 1960s, along with the increase in Asian immigrants in the USA. The positive representation of Asian Americans was attributed to the popular press, which paid attention to the success stories of Asian Americans in a variety of contexts (Wong & Halgin, 2006). The emergence of the term "model minority" is rooted in an article published in 1966, written by sociologist William Petersen, on the subject of Japanese Americans' unusual academic triumph in adversity (Wu, 2002). By focusing on a positive picture of Asian Americans, the model minority stereotype of Asians working hard in order to succeed in US society was constructed. However, Japanese Americans' educational achievement was already close to that of White Americans in the early 1940s (Fogel, 1966; Wong, 1990).

It is too optimistic to believe that the model minority image was a better replacement for the “yellow peril” image, which had been implanted in White American society for over 100 years. One cannot ignore the fact that the dominant racial group in US society used to openly hold immigrants, especially racially inassimilable immigrants, in abhorrence. The exclusion acts of the late 19th and early 20th centuries such as the Chinese Exclusion Act, along with the 1924 Immigration Act, which was promulgated to prohibit Japanese from immigrating to the USA, show how immigrants of color, particularly Asians, were discriminated against in the USA.

Instead of producing a new representation of the Asian population in the USA, the model minority stereotype was used to justify White Americans’ racial ideology. The success stories of Asian Americans were disguised in the norm in which, regardless of one’s racial background and socioeconomic status, everyone has equal opportunity to succeed in the USA, as if that were the virtue of US society. It appears that the model minority myth was exploited to keep perpetuating the concept of the “American dream” to some extent (Cheng, 1997; Suzuki, 1977). This concept denotes that one’s economic success is fundamentally attributed to one’s work ethic. However, it absolutely dismisses other significant factors such as one’s social class (Anyon, 1981; Kincheloe & Steinberg, 2007), gender (Gibson, 1991; Suárez-Orozco & Suárez-Orozco, 1995), race/ethnicity (Delpit, 1995, Lee, 2005) and educational attainment (Breen & Goldthorpe, 2001), all of which affect one’s economic accomplishments in US society.

Not surprisingly, the model minority stereotype began to transform into a social burden not only for Asians but also for other minority groups. Indeed, some scholars claim that the model minority was constructed to send a political message—claiming that Asian Americans climbed up the social mobility ladder without governmental support—to the social justice movement, which culminated in the Civil Rights Act of 1964 and was supported by African American activists in the 1960s (Kawai, 2005; Osajima, 2000; Suzuki, 1977). Moreover, the model minority image was exploited to label other minority groups, especially African Americans, as failures (Takaki, 1993). The image began oppressing other racial minorities as if to say they were to blame for not being able to achieve a better economic mobility.

The distinctive academic accomplishment of the Asian population in the USA has been highlighted ever since this positive image appeared. Numerous educational researchers have examined the academic realization of Asian students and have provided evidence to show that Asian students are academically more successful than other racial groups (Caplan, Choy, & Whitmore, 1991; Goyette & Xie, 1999; Hirschman & Wong, 1986; Sanchirico, 1991; Zhou & Bankston, 1994, Zhou & Kim, 2006). Examining the success stories of Asian students is exceedingly important since the findings and implications derived from the investigation can contribute to numerous arenas in the field of US educational research. It is also true, however, that these studies are inclined to perpetuate the model minority myth that has prevailed in US society, especially in the educational environment in which Asian American students are high academic achievers. Consequently, the model minority myth overlooks the fact that, behind the label, there are many Asian immigrants who are not academic achievers. Therefore, the stereotypes that are reinforced in the educational setting limit one’s perception of Asian students (Kim & Yeh, 2002).

## Methodology

The present study is qualitative in nature, with an emphasis on phenomenology. Phenomenological research is an outstanding methodological framework to explore a certain phenomenon that a person or a group of people experience in their “lifeworld” (Husserl, 1970), which represents what “the world of lived experience” (Van Manen, 1990, p. 182) means to them. Since the core question for my dissertation is what it is like to be a foreign-born Asian immigrant high school student in an American school in the Midwest, the foundational components that phenomenology addresses are quite important in order to refine the methodology.

### *The Research Site: Orange High School*

I gained entry into Orange High School. Orange High School is a large public high school that serves grades 9-12 located in one of the metropolitan cities in the Midwest. Student enrollment for the 2008-2009 academic year was 2,612. Orange High School is one of two high schools in the metropolitan district. The sister high school of Orange High School also serves approximately 2,600 students. As for the ethnic breakdown of Orange High School, 47.8% of the entire student population is White. The second largest racial/ethnic group at the high school is African American, representing 38.7 % of the school’s population. The Hispanic population, which is 6.7% of the total student population, follows. Only 1.5% of the population is Asian. The remaining part of the total student population, 5.2%, is multiracial. According to the National Center for Education Statistics (2007), the average ratio of White students’ population enrolled in public schools in the state where Orange High School is located is 80.3%, the ratio of African American students 12.5%, Hispanic 5.7%, and Asian 1.2%. The ratio of Asian students at Orange High School is slightly higher than the state average. However, given that the population of the racial/ethnic minorities at Orange High School is much larger than that of the state average, it appears that Orange High School is a racially/ethnically diverse high school.

### *Participants*

The primary participants of this study are Asian immigrant high school students in the Midwestern high school. Following the concept of purposeful sampling strategies, which allows me to focus purposefully on a small sample in order to understand the in-depth meaning of this small sample (Patton, 2002), I recruited four Asian high school students: Tamika, a recent immigrant to the USA from the Philippines (She had been in the USA for only four months as I started the fieldwork at the research site in February, 2009); Kevin, who identified as a “parachute kid,” which is an academic expression used to describe a foreign student who comes to the USA alone to have a better education and lives separately from their parents (Zhou, 1998); Mako, currently a *Kaigaishijo*, which is a Japanese term used to identify Japanese students who attend school in a foreign country (Harkins, 2001) and who will become a *Kikokushijo*, which is a Japanese term used to describe a *Kaigaishijo* who returns to Japan (Harkins, 2001); and Ashley, a half Korean and half Chinese second generation American who takes care of her younger siblings for her busy mother. Four teachers who teach the primary participants and the principal are the secondary participants.

### *Data collection*

In order to collect data, I conducted my fieldwork once or twice a week from February 7<sup>th</sup> to May 27<sup>th</sup>, the last day of the 2008-2009 school year at Orange High School. Direct observations

and in-depth interviews are the principle components of my fieldwork. In order to collect data, I directly and closely observed my participants in their classrooms, hallways, and cafeteria so as to understand the essence of what it is like to be an Asian immigrant student. Spindler and Spindler (1997) have noted that direct observation leads researchers into a deeper understanding of their participants' behavior, voices, as well as the social and cultural contexts where the events take place. The other significant vehicles which helped me to gather data are in-depth semi-structured interviews. I interviewed each of the primary participants three times throughout my fieldwork. In the interviews, I asked the participants about some of the events that I observed and their school life in general.

#### *Data Sources*

Throughout my fieldwork, I collected data in the form of field notes; audio files; interview transcripts that I obtained by transcribing the interviews with the participants; and a research journal that I kept to express what I observed, experienced, and felt throughout my observations and interaction with the students and teachers and theoretical themes that I came across while immersing myself in the high school environment. The emails I exchanged with the participants also become data. There are a total of 18 sets of interview transcripts.

#### *Data Analysis*

Following the completion of the fieldwork, first I vigilantly read the interview transcripts and the research journal three times with the aim of capturing the essences of the life stories and phenomena centered on the lives of the students, which is considered an essential portion of the data analysis process in phenomenological studies (Miles & Huberman, 1994). Subsequently, I began coding the data using constant comparative analysis (Glaser & Strauss, 1967), which allows for a potentially deeper understanding of the high school experiences of the four Asian students, as well as identification of the differences among the Asian students.

#### *Findings*

##### *Isolation of Asian Race/Ethnicity: No Acknowledgement of Asian Heritage at Orange High School*

One of the major themes that I found important in my analysis of the Asian high school students' experiences is the isolation of Asian race/ethnicity in the school environment. At Orange High School, race becomes an important social identity of each student and a key element that affects how the students form their peer groups. The peer groups that the students at Orange High School form are largely racially divided. Latino students, mainly immigrant students who are in the ENL classes, spend time with other Latino ENL students. African American students also regularly associate with other African American students. Correspondingly, White Americans associate with other White Americans. I also witnessed interracial groups and some students who challenge the racial boundaries and respect racial integration. Besides race, socioeconomic status may be another factor that has an impact on the formation of the peer groups. Nevertheless, race seems to play a crucial role in creating peer groups among the students.

Asian students are literally "the minority race" at Orange High School. As mentioned previously, there are only 40 students of Asian descent in the large urban high school that serves 2,612 students. Only seven of the 40 students of Asian descent are foreign-born; the majority of the

Asian students are US-born. I have seen the Asian students, both the Asian students in this study and other students, in the hallways. In most cases, they were on their own, moving from one classroom to another while other students walked the hallways with students of the same race. Many students likewise linger in the hallways with other student of the same race before the bell rings to signal the beginning of each period. However, I did not see any “Asian groups” in the hallways while I was immersed in the school milieu. I saw, however, Asian students, particularly the US-born students, who associate with White students in the hallways and cafeteria at times.

No racial solidarity seems to bring Asian students together to rejoice in their racial background among the Asian students at Orange High School. In addition to the small number of Asian students, the heterogeneous nature of the Asian population (as addressed in the literature review chapter), may prevent the Asian students from bonding closely as a unified or pan-ethnic racial category. In Kevin’s math class, there are two other Asian American students. One of the Asian American students is Ashley. However, the three Asian students barely talk to each other. In the interviews, I asked Kevin and Ashley whether they know their Asian classmates well. They said “No.” For Kevin, his LEP status may be hindering him from getting to know the other Asian students. But I never saw the two Asian American students talk to each other either.

Ethnic solidarity, which signifies the unification of a group of people who share the same ethnic identity (Martinez, 2008), does not exist among the Asian students. Because of the small Asian population, constructing ethnic solidarity at Orange High School is not a viable task. To be more precise, it is simply difficult for the Asian students to meet other Asian students of the same ethnicity or similar ethnic background. Kevin once had a Taiwanese friend, John. John was a senior when Kevin was a freshman. John graduated from Orange High School and currently attends a large state university in the Midwestern state. I asked Kevin about his friend, John:

- Hidehiro: Which language did you speak with John?  
Kevin: We speak Mandarin because he is from Taiwan, and he speaks Mandarin. He doesn’t know how to speak Cantonese, so we speak Mandarin.  
Hidehiro: Did you guys talk in English?  
Kevin: We seldom do that because you know, you are so excited to speak to another person who can speak your own language [laughing].  
Hidehiro: Has anyone asked you which language you were speaking as you spoke Chinese? No one really reacted to the language?  
Kevin: Sometimes, some people are like, what are you talking about? Are you talking behind my back?  
Hidehiro: They don’t know the sounds of Chinese.  
Kevin: I think it’s because not too many Asians are here, so they will feel surprised.  
Hidehiro: He was the only person you could speak to in Chinese?  
Kevin: Yeah.  
Hidehiro: Right now, you have no Chinese friend at school?  
Kevin: No.

(Kevin, personal communication, March 10, 2009)

Kevin told me that he misses John, with whom he could share his culture and heritage. At present, he has no friend with whom he can communicate using his native tongue. As explained

in the previous findings chapter, Tamika stated that she misses talking with Filipino students using Tanglish. Kevin and Tamika, who are recent immigrants, pine for friends with whom they can share their heritage culture. In surroundings where it is very difficult for an Asian to meet other Asians of a similar ethnic background, ethnic solidarity cannot materialize.

Furthermore, as indicated in the dialogues between Kevin and me, for many of the Orange High School students, Asian culture or language appears to be an unfamiliar custom. Unfortunately, Orange High School offers no Asian language courses such as Japanese and Chinese that can promote the students' acknowledgement of Asian culture (Endo, 2008). Also, no school events celebrate the cultural traditions of Asian people. The school cafeteria offers an "Asian" menu on Mondays; according to Mako, however, the cafeteria does not offer genuinely "Asian food":

The cafeteria serves a dish called Asian chicken on Mondays. That chicken comes with a strange looking Teriyaki sauce. But the chicken is pre-cooked popcorn chicken. That's just such a strange combination and not Asian at all. I tried it but it wasn't good.

(Mako, personal communication, March 6, 2009)

Although the school's attempt to offer a wide range of food at the cafeteria may be commended, it does not help the students become familiar with Asian culture. On the whole, Asian customs are neither promoted nor celebrated in the school milieu. Consequently, non-Asian students as well as teachers have very limited opportunities to gain knowledge of Asian students and their culture at the school. This condition further perpetuates the idea of Asians as perpetual foreigners in US society (Ng et al., 2007).

At Orange High School, Asian race/ethnicity and culture are often disregarded. Thus, Asian race/ethnicity becomes isolated—i.e., a social condition develops in which there is no racial/ethnic solidarity among Asian students to share their racial or ethnic pride, nor do they recognize their Asian heritage and culture. As a result of the isolation of Asian race/ethnicity at Orange High School, Asian students become marginalized. Accordingly, the Asian students at Orange High School become marginal members of the school society.

### *Intricate Identity Construction Allied with Language and Culture*

The Asian students in this study, including Ashley, who is US-born, practice their heritage customs at home. The three foreign-born Asians, Tamika, Kevin and Mako, live with their family members with whom they can share their native language. Ashley, whose first language is English, speaks one of her heritage languages, Korean, with her mother. I found that the four Asian students who value their ethnic background experience the intricate processes of both developing new social identities and maintaining their ethnic identity in the Midwestern high school.

Mako, who eventually will go back to her homeland, seems to be aware of the importance of maintaining her ethnic identity. She also feels that she has developed an identity with which Japanese youth of her age in Japan may not touch a chord. She stated:

I heard Japanese people usually think *Kikokushijo* are mean. Here, we say "you are stupid" to friends as a joke. But if I say the same thing in Japan, people might take it

seriously. That's why I thought Japanese people think *Kikokushijo* are mean. Maybe Japanese language sounds more serious than English does.

(Mako, personal communication, March 20, 2009)

Mako's statement shows her concern for blending into Japanese society again. She has constructed an identity that allows her to blend in US high school culture. However, this identity that she has developed in the US educational milieu may not be fully accepted in Japanese society since the identity is too "foreign" for many Japanese people of her age (Kanno, 2000). This identity is also strongly connected with the English proficiency that she has developed for eight years. I asked her which language she is more comfortable speaking:

It's probably Japanese. When I speak Japanese, I feel I can be more open. But I am not so confident in my English. So, when I speak English, I think I am a little apprehensive.

I sometimes stumble as I can't find an English word that I am looking for.

(Mako, personal communication, March 26, 2009)

Even though Mako has been living in the USA for eight years, she feels Japanese is the language with which she is more comfortable. She speaks English well, but after all English is not her first language. Her English does not allow her to fully express herself at Orange High School. She perceives that she becomes an "ambiguous self" that hovers between Japanese culture and American culture at times in her school.

Ashley is likewise in the process of constructing her social identities. This second generation, multiracial Asian American struggles to identify her cultural affiliation. In the interview, she stated:

Well, I kinda feel I am culturally deficient, maybe. Because I don't know about culture. I don't know much about Korean culture other than food perhaps, then I know almost nothing about American culture 'cause I don't like to go out and watch movies. Or I don't know about all about historical American details. I don't listen to American music much, so when my friends talk about these things, I don't know. Also about TV. They think everyone watches TV. My family doesn't.

(Ashley, personal communication, March 26, 2009)

For Ashley, the USA is her homeland. However, she does not associate with the cultural activities in which her American peers at Orange High School take pleasure. She admits that she does not have a strong sense of American identity. Conversely, according to Ashley, her younger sister, who enjoys American youth culture, has developed a stronger American identity than Ashley has. One's attachment to a particular culture seems to be entangled with one's social identity (Ying, Han & Wong, 2008).

As indicated, Ashley believes that she is not an authentic Korean since she was not born in Korea. Palmer (2007) mentions that Korean-born Korean American students are likely to differentiate US-born Korean American students from themselves since US-born students are too "Americanized." Ashley told me that when she is with other Korean-born Korean Americans who are members of a small Korean church in the Midwestern state, she feels that people see her as an unauthentic Korean because she does not speak the Korean language well and she is half Chinese. As Gee (2001) indicates, one's strong sense of belonging to an affinity group affects how one constructs an identity. Thus, the fact that she does not fit well in Korean affinity groups to some extent hinders her from developing her Korean identity.

Nevertheless, Ashley's desire to build up and sustain her Korean identity does not cease. As I communicated with her via emails, I noticed that the last name that appears on her email account differs from her real last name, which she inherited from her Chinese father. The last name that she used for her email account is a family name commonly used in Korea. I asked her how she came up with the Korean last name. She answered, "That's my mom's last name. I just used that online." Edwards (2006) maintains that one's name is connected with the construction of one's social identity. Ashley's tight bond with her mother prompts her to cherish her Korean heritage. By using her mother's last name as her online name, she inwardly develops and embraces her Korean identity.

The recent immigrant Tamika likewise began learning the importance of constructing a new identity that masks her "foreignness":

Hidehiro: When you met other Filipinas in class, did you speak your native language?

Tamika: Filipino? No! English.

Hidehiro: Because other people were there too?

Tamika: Yeah.

(Tamika, personal communication, March 13, 2009)

Tamika, who misses speaking her mother tongue with other Filipino/as, did not communicate with other Filipina students in her school. As described in Kevin's statements in the previous chapter, some students respond negatively towards the foreign languages spoken in the school environment. Tamika perhaps intuited that one who spoke a language other than English will be the object of the other students' attention and avoided initiating conversations with the Filipina student in Filipino. She just began constructing a new identity that enables her to blend in the US high school milieu.

The Asian students who are culturally and racially/ethnically marginalized youths in the Midwest construct a social identity that allows them to integrate into host school society (Kibria, 2000; Palmer, 2007). While developing a social identity, the Asian students also undergo cultural negotiations by hovering between their heritage customs and US school culture in order to find a self with which they can be content.

The theoretical theme, intricate identity construction allied with language and culture, signifies the complicated process that the Asian high school students undergo in discovering who they are. Maintaining a bicultural and bilingual/trilingual status has an impact on how the Asian students construct their social identities and how they develop their self-esteem as persons of Asian descent in the Midwestern state.

## Conclusion

In the Midwestern educational environment where Asian ethnic values are largely disregarded, there are hardly any opportunities for the Asian students to embrace their ethnic backgrounds at school. Thus, the Asian students need to conceal their cultural backgrounds, which are often seen as too "foreign" in the Midwestern educational environs. As a consequence, they venerate spending time with their family with whom they share their ethnic values and bonds. In the Midwestern educational environs, the ethnic values and bonds are only sustained in their family.

The findings of this study also represent the vulnerability as well as the isolation of the Asian students, particularly the recent immigrant students, Tamika and Kevin, who are marginalized from the mainstream school society. Kevin and Tamika undergo more intricate social and cultural adjustment process than the other two participants in the Midwestern area due to their unfamiliarity with the dominant school culture and the language barriers between them and their mainstream peers.

The challenge to provide Asian students in the USA with better educational opportunities can be a never-ending trial. However, I believe these efforts can be transformed into knowledge that guides both current and future educators to learn what it is like to be an Asian student in the US educational environment and to become more culturally sensitive to Asian students.

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The logo for 'iafor' is centered on the page. It consists of the lowercase letters 'iafor' in a light blue, sans-serif font. Surrounding the text are two large, thin, curved lines that form a partial circle. One line is a light red color and the other is a light blue color, matching the text color.

*An Action Research of Design Thinking Integration to the High School Science and Technology Education*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

An action research of Design Thinking with integration to the science and technology education at a senior high-school has been proposed. The students involving in this research belong to the 12<sup>th</sup> grade at the senior high-school where the researcher is that school teacher. According to our preliminary studies, there are three major problems when a senior high-school tries to integrate the design thinking into science and technology education. The school authorities, the teachers, and the students have their own problems from the traditional education system, which will be discussed in this paper. The future prospects and the potential benefits of the design thinking education will also be included and discussed here.

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## **I. Introduction**

Since 1990, mankind has entered the era of knowledge economy. The United States (U.S.) and the European Union economy, which are highly developed countries alike, realize the importance of secondary education reform; Science education to enable students to take the initiative to identify problems and integration solutions for scientific and technical knowledge to create the core of this study. The core spirit of such process to make the change is “design”.

Based on the foregoing ideas, 1992, the British national curriculum framework stipulated that "Design and Technology" (DT) is a required course. Some design companies in the U.S., the Industrial Designers Society of America (IDSA) pull strings with some of the State Board of Education will co-design into secondary school teaching.

However, traditional education in science and technology is leaded by two major Entrance Examinations of Universities in Taiwan. The General Scholastic Ability Test is held around February in winter recess and the Department Required Test is held around July in summer recess. As a result, the courses are divided as prescribed courses and elective courses respectively. In Taiwan, senior high school students are mostly selected through their scores in the high school entrance examination. The students in Chung-Gang Senior High-school (CGSH) are graded among 70% to 80% with the best students graded 99%.

Our research program attempts to implement British "design and technology" of the national curriculum framework as the core, with the U.S. industrial design and design education into secondary school teaching with the university cooperation. The collaborative members include CGSH, National United University (NUU), and other members such as Koi-Mei Primary School, Washington Senior High-school, and National Yun-Lin University of Science and Technology.

## **II. What's Design Thinking? How to Proceed?**

The program is composed of three groups with the funding from Taiwan government, National Science Council (NSC). The professors in the universities are the first group which plays the role of advisors in this project. The high school teachers and staff are the second group. The final group is the students who are regarded as study objects. In the very beginning of this research, we have to find some teachers who are willing to learn. As a result, a summer workshop is provided by a design company (Gixia Inc.) in July and August 2011. After the training courses of Design Thinking, the teachers then become the instructors and speakers of the training courses for students. The students then do their projects based on the principle of the design thing.

The study methodology is a portfolio assessment by Delphi Method which can make the research a reflective practitioner (Avrramidou & Zembal-Saul, 2002), (Gibson, Bernhard, Kropf, Ramirez, & Van Strat, 2001), (Swanson, 2000), (Schön, 1983, 1988).

Based on the definitions of Design Thinking (Brown, 2010), we summarize the qualifications of Design Thinking with the following abilities; observation, user analysis, empathy, definition, ideate, prototype, and testing. The activation of

humanity and active learning and the skill training of new science and broad abilities are finally toward the ability of problem-solving.

On the other hand, in order to motivate the students in this Design Thinking Project, we need to take care of the students needs, which contain at least three categories. The first is the preparation of the career guidance of the students. Because the Portfolio is asked by the General Scholastic Ability Test for the applied students, the designs of the Portfolio can be guided by the Design Thinking. The second is the feeling experience of traditional prescribed courses. The incorporation of Design Thinking is expected to prevent the boring experience on classes. The last category is to make the project embedded into traditional courses which can improve students' capabilities.

The first year project is to implement the design thing in the science and technology course and encourage students to do some small projects. One example will be discussed in the following sections.

### III. Redesign on flag-raising platform

An example is executed by the redesign on flag-raising platform. Initially, the authors make the students observe the platform and analysis the experience of themselves on the original platform. Followings are their conclusions. The appearance is a traditional building. The usage frequency is below once per year. The location is at bolder area of the campus. The overall evaluation is that it could be better or it should be better. Based on their experience, the first author proposes his redesign platform which is a physics teacher-based proposal. In order to ideate the user-based thinking, the author uses a "Like" button on Facebook in order to ask the students: What's the platform you like? In this design, the Design Thinking, new science, and feeling experience are embedded experimentally. The fish bone diagram is applied and depicted in Fig. 1.

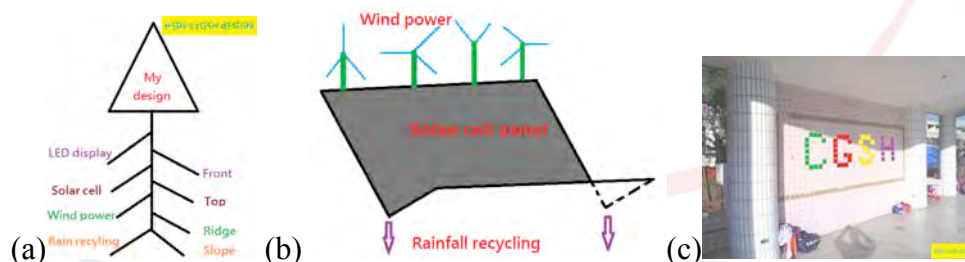


Figure 1 : (a) Fish bone diagram as an example of Design Thinking. (b) Schematic diagram of sample redesign platform. (c) Schematic LED display in the front of the platform.

In Figure 1, the platform is proposed to set a LED display on the front, solar cell panels on the top, a wind power module on the ridge, and rain fall recycling system on the slope. Due to our former study which is joined to the Science Fair, in CGSH people encounter very strong northern wind in winter. As a result, the wind power in new science is introduced. Finally, the author asks students: Is there any other crazy ideas like some reports on the newspaper which is redesigned for the bus stops as a school-bag and a magic cube. What if we design the platform as a very huge concentrated solar energy module?

#### **IV. Related bright-spots and the Students Feedback**

Besides the embedded courses, the students are encouraged to join the invention contests. For International Exhibition for Young Invention (IEYI) 2012 in Taiwan, two teams of the High Scope Program in CGSH win silver medal awards.

As the High Scope Program is a three-year project. The embedded course is executed by three stages recursively. The first stage is a preliminary test as external course after joint examination. The second stage is an elective course. These two stages had been finished in last year which is the first year of our project. The final stage is being executed and embedded into prescribed course in this year. It is observed that the student designs are limited by traditional shape design and are not sufficiently satisfied due to the lack of training courses in stage 1. Contrarily, in stage 2, the student designs are colorful and emerged with environments around CGSH. For example, the location of CGSH is near the Taichung-Port, it is observed that many designs are ship-shaped accordingly. More fruitful designs can be observed such as the usage of mind-map and specialized CG-ark. It is also noteworthy that a student introduces the idea provided in the class. He claims that the best design is no design. As a result, keep the platform as it is. More interesting designs not related to the platform can be seen in their design notes.

#### **V. Conclusions and future challenges**

In summary, on the good side, High Scope Program is beneficial for the integration of university, high school faculty, teachers, and students to develop their own professional enhancement. An embedded course with Design Thinking is beneficial for the promotion of feeling experience in Science and Technology curriculum. We are not intended to find the best solution, but, instead, the better solution.

Contrarily, on the down side, additional burden and loading are not avoidable for the integration of university, high school faculties, teachers, and students. For example, the ability of program execution for high school faculties is desired. The peer-relationship of teachers should be handled with care. The motivation of students should be activated by various approaches in the beginning of this project. As a result, more skills and experience are needed for some other innovative curriculums. Survey and investigation of curriculum, student feedback, and activity design could be helpful for the improvement of this project.

As a result, more investigations are needed. For example, because Design Thinking is not so easy to be qualified, evaluations are still under construction in this project. In our future works, the evaluations can be at least three dimensions which are depicted as Fig. 2.

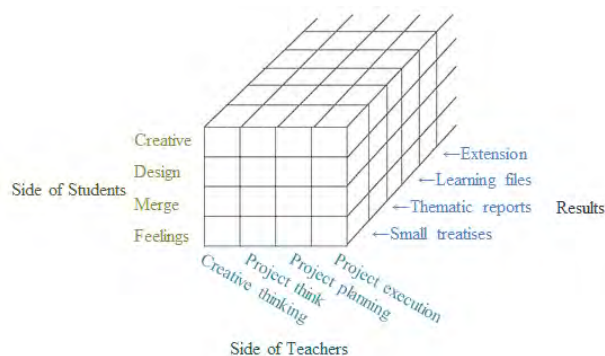


Figure 2 Three dimensions of the project evaluation.

## Acknowledge

This work was supported in part by the National Science Council (NSC) of Taiwan under grant NSC 100-2514-S-791-011.

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*A Framework for Transforming Faculty Development to Promote Mobile Teaching  
and Learning*

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The Asian Conference on Education 2012

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## **1. Introduction**

Use of mobile technologies is growing worldwide, and especially among students. A 2012 study of undergraduate students at universities in the United States showed that 62% owned smartphone devices (Dahlstrom 2012), which is higher than the rate among all adults in the US, which was 35% (Smith 2011). Smartphone ownership among students has increased for a number of years, growing 5545% since 2004 (Dahlstrom 2012), and this growth trend among students indicates the shape of things to come.

More than mere ownership, students feel that their mobile devices are important to academic success (Dahlstrom 2012). According to the 2012 ECAR Study of Undergraduate Students and Technology (Dahlstrom 2012), 37% of students feel their smartphones are extremely very important to academic success, and 67% of students who own a smartphone have used it for academic purposes, which is almost double the 37% who felt the same way in 2011 (Dahlstrom et al. 2011).

Although students have been eager to adopt new mobile technologies, faculty members need more time and support to adapt their courses and pedagogies to accommodate and utilize mobile devices. Faculty members must consider both curricular and pedagogical issues. They must also address infrastructure and institutional policies before transforming their teaching.

There have been numerous articles in the news media criticizing the use of mobile devices in the classroom (Childs 2012), which has made some faculty apprehensive about adopting mobile learning. They cite many reasons, but the most common are that mobile devices are too distracting in the classroom, they are usable only for entertainment or texting, they are too expensive, and they are difficult to use for learning purposes. This accompanies a general belief that mobile devices are not appropriate for academic use because they cannot be used for productive, high-level work.

At the same time, many faculty members are excited about the opportunities provided by mobile technology, but do not know what is possible and may struggle to support students' technology use. These individuals need help exploring device capabilities, finding technology and software solutions, and incorporating pedagogical best practices into their activities.

Faculty Development or Teaching and Learning Centers play a significant role in academia in promoting effective teaching and learning strategies, and they can play a significant role in addressing the needs of both types of faculty members, those who are apprehensive about mobile learning and those who are willing to explore them, by demonstrating the uses of mobile technologies, dispelling misconceptions, and modeling effective pedagogical practices. By meeting the needs of both faculty and students, the Centers can advance their missions, increase visibility on their campuses, and lead their institutions to adopt active and engaged teaching and learning strategies to meet the learning needs of students (Lefoe et al. 2009).

## **2. Misconceptions**

One of the first steps in any transformation process is to dispel myths and misconceptions that impede such a transformation. For those who are critical or apprehensive of mobile teaching and learning, Faculty Development Centers can help to dispel misconceptions and reduce concerns

about mobile technologies. The negative opinions prevent them from being open to new ideas and from being willing and able to learn something new. Some deeply held beliefs, like an aversion to technology or annoyance with SMS (texting) as a means of communication, can be challenging to overcome. In these cases, it may be difficult to show the faculty member the positive benefits of mobile learning at least initially until they see their colleagues use the technologies successfully or recognize students' demand for integrating such technologies in the classroom. Alternatively, they may recognize the benefits but still believe that does not justify the negative aspects.

Faculty misconceptions about mobile learning cover a broad range of topics and types. From conversations with faculty development support staff from a variety of institutions, we have identified that the most common misconceptions are related to devices, software, communication, teaching, learning, training, and support. For example, some are still unsure if mobile devices are appropriate for learning. Some faculty members think that mobile learning can only occur with smartphones, or particularly with iPhones. In reality, mobile learning can be accomplished with a wide variety of devices, including traditional cell phones, smartphones, tablets, netbooks, laptops, eReaders, and student response systems. Some believe that the small screen of a smartphone is not useful for serious tasks, like reading course materials or research documents. While some screens are quite small, most mobile devices allow for content to be enlarged in size, and materials or portals can be developed or adjusted to fit the smaller screen.

Another area of common misconceptions relates to the software used for mobile devices. Faculty members may believe that the apps available for mobile devices are only for games or social networking. They dismiss mobile devices as being only useful for entertainment purposes. However, a great number of productivity apps are available for creating or editing documents, managing tasks, recording data, and more. If they are aware of these apps, faculty may believe that the apps are expensive. However, many of the most commonly used apps are free or cost less than their Windows- or Mac-based counterparts. A web search for "free education apps" will return a multitude of lists compiled by other educators.

Some faculty members do not understand the communication methods used by mobile devices. For example, they may believe that WiFi is a requirement for mobile teaching and learning, which limits the locations where mobile devices can be used. Others believe that cellular internet access is necessary and that those networks (either 3G, 4G, or LTE) are only available in metropolitan areas. To the contrary, many devices can operate with either method of communication. In many rural or developing areas, cellular internet networks are readily available, more reliable, and faster than wired broadband. For many academic uses, network connection is not necessary in the field. Instead, the devices can be used without connection and the results can be uploaded to a website or course management system after returning to an area with more connectivity.

Misconceptions also exist around mobile teaching and learning strategies. Some faculty members believe that mobile devices can only be used in certain disciplines. Another common misconception is that mobile devices are not useful for teaching content. This is related to the belief that mobile devices are only for entertainment rather than intellectual pursuits. Mobile

devices are indeed being used for teaching content, and particularly to encourage students to construct knowledge themselves.

Finally, faculty members believe that they would require extensive training to implement mobile learning, both on the use of the devices and the apps they would plan to use. Faculty members also overestimate the type and extent of technical support they and their students would require. Many mobile learning initiatives take advantage of a few easy-to-use free apps, and so there is no need to learn complex development platforms or coding languages. There are also plenty of “how to” videos on YouTube and other web sources on using the apps for teaching and learning purposes. It is critical to address the mentioned misconceptions before transforming faculty development to promote mobile teaching and learning, and there is a wealth of literature available already to aid in the transformation process (Boise State 2011; Crow 2010; Grush 2011).

### **3. A Framework for Supporting Mobile Teaching and Learning**

Faculty Development, and Teaching and Learning Centers that want to begin developing mobile learning initiatives need to address four areas for a successful transformation. First, they need institutional support for the process, although this support may be incomplete until they can demonstrate progress. Second, the Center will need to acquire and explore mobile devices and apps. It is powerful to be able to share personal experience when discussing the use of mobile devices and apps with faculty members. Third, Centers need to research and design strategies to overcome resistance to mobile teaching and learning, and address some of the misconceptions mentioned earlier. Finally, there is a need for a logical approach or framework to guide the faculty development transformation process to support mobile learning.

We propose a framework with four components that address the process of transforming a faculty development centers to promote mobile teaching and learning. Figure 1 shows the framework. The four components of the framework are (1) technology, (2) pedagogy, (3) infrastructure, and (4) training and support.

#### **3.1 Technology**

Technology for mobile learning includes the devices and software utilized for mobile learning. Faculty development centers that want to support mobile teaching and learning initiatives must become familiar with the technology before pushing for faculty use. They should investigate both the strengths and weaknesses of the devices and be aware of the limitations inherent in smaller devices. It is important to gain experience with a variety of mobile devices. Some faculty development centers have only explored a single platform, which gives the impression to faculty that only one platform is appropriate for mobile learning. This can also undermine the credibility of the Center by making it appear that they are simply promoting particular company's products.

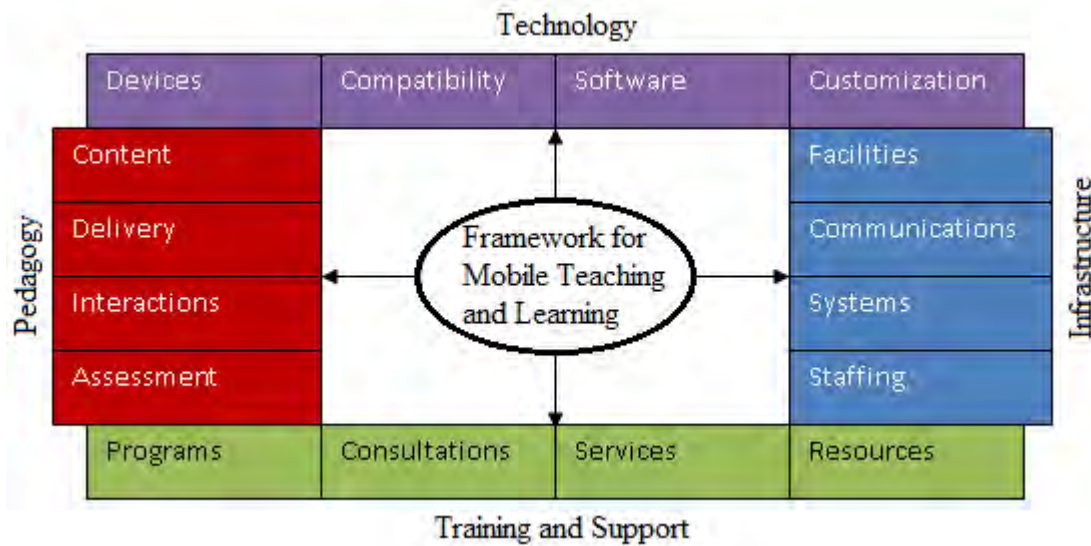


Figure 1. Framework for Mobile Teaching and Learning

In addition to acquiring and evaluating mobile devices, Centers should also make an effort to stay current with the constantly shifting landscape of mobile technology and capabilities. This can be accomplished by following the press releases of the most significant mobile manufacturers or by reading articles and reviews published by technology news aggregators and bloggers.

Faculty development centers should also become familiar with a wide range of mobile software. The best way to gain experience is by trying different apps, but purchasing and distributing apps within an educational institution can be challenging, particularly for tax-exempt institutions. However, there are a plethora of free apps that are ideally suited to educational purposes that do not require special contracts or purchasing.

It is also important to collect app and accessory recommendations for different disciplines and content areas in addition to those that support general productivity. For example, being aware of apps and workflows for managing classroom attendance, grading from a mobile device, and maintaining an appointment calendar can benefit faculty members from any discipline, but there are also scientific reference apps, foreign language learning apps, and graphic design apps that would benefit faculty members and students from specific academic programs and disciplines.

Within the institution, faculty development centers should also be aware of the compatibility between mobile devices and existing institutional technology. Centers can assist faculty members who want their or their students' mobile devices to integrate with classroom technology, learning management systems or online system portals.

### 3.2 Pedagogy

Another way that faculty development centers can transform themselves to support mobile learning is to learn about pedagogical strategies and approach for incorporating mobile technology into the classroom. This is more than recommending devices or apps, and is most effective if the Center staff members have instructional experience or training.

Because of particular capabilities of mobile devices and the environments they are used in, pedagogical approaches for mobile learning are not identical to more traditional delivery approaches. Most mobile users do not focus entirely on the content on the device, and so it is important to consider length of time and depth of concentration when designing content. Content delivery should be divided into multiple short segments in mobile-friendly delivery formats.

Mobile learning also makes it possible to use more active learning strategies, like problem-based or experiential learning or situated learning. Faculty can also use constructivist approach in encouraging students to create content using their mobile devices. Game-based learning is also a powerful teaching strategy that is well-suited to the use of mobile devices. Faculty development centers should become familiar with these methods to support advanced mobile learning initiatives.

Mobile devices can be incorporated into any delivery model because they are so flexible. Faculty development centers can add mobile learning strategies to current programs or resources for face-to-face, blended, or online teaching. In addition, while mobile devices are most advantageous when used on-location and in the real world, there are many applications in the classroom. Student response systems (clickers) are one example of how mobile devices can be incorporated into face-to-face teaching in a traditional classroom. Most current clicker providers have or are developing a solution for students to use their personal mobile devices such as smart phones instead of purchasing a dedicated device.

Because they were originally designed as communication devices, it is simple to find examples of mobile devices used for interaction in courses. Short Message Service (SMS), or texting, is possible from nearly all mobile devices and can be used to send reminders to students or for students to submit comments or questions to faculty members during or after class. Free polling tools available from online polling services such as [pollev.com](http://pollev.com) allow faculty to conduct quick polls in class for which students can text their responses to indicate their comprehension of course topics covered in a lecture.

Mobile devices can also be used to assess student learning. In particular, the photo and video capabilities of even basic cell phones make it simple for students to create their own media for assessment purposes. They can be used in class, as clickers, or on location to record and respond to stimuli in the environment. Faculty development centers can assist faculty members with selecting authentic assessment techniques for use with mobile devices, but they may also need to remind faculty to match assessment techniques with the instructional objectives. It is easy to be carried away with excitement for fancy technology and choose tools based on popularity or impressive features rather than instructional benefit.

### **3.3 Training and Support**

Training and other forms of support are a significant factor in any technology-related teaching and learning initiative. For mobile learning, faculty members need training about devices, apps, and pedagogy. However, for some, training may not be sufficient. Some faculty members may need ongoing support in addition to or instead of training, in the form of consultations or teaching observation or other services as their technology skills and discipline-specific needs may vary.

Faculty development centers that already offer training programs like workshops or institutes can begin to offer additional programs on mobile learning topics. Centers that do not provide training can begin to offer such training or can partner with a department or unit at their institution that does offer workshops or other programs. Because mobile learning is such a broad field, it may be helpful to begin by planning a sequence of programs on progressively more advanced topics, starting with a general introduction or overview to mobile learning. Other topics can include specific mobile capabilities, like text messaging, or mobile learning strategies, like using student-generated media or assessment using mobile devices.

Past experience with technology-based workshops suggests that it is more effective to weave technology and pedagogy into the same program rather than separating them. Hands-on or technology-specific programs are generally more popular because they appear to be more interesting or exciting than programs focused only on pedagogy. If technology and pedagogy are presented independent of one another, many participants will not learn effective pedagogy. In addition, it can be harder for faculty members to connect them when they are not discussed together.

In some circumstances, it may be more beneficial to work with faculty members through consultations. These sessions can be customized to meet the needs of the specific participants. Consultations can be held individually or with a group of faculty who are working in the same discipline or on the same project. Because of the individualization of a consultation, it is possible to provide more practical suggestions. Faculty members often prefer the one-on-one attention, but this is more time-consuming for faculty development centers and can strain possibly limited resources.

For faculty members who have implemented a mobile learning lesson or activity, there are other services that faculty development centers can provide. The easiest is to review lesson plans or design documents to provide feedback on the proposed mobile learning activity. It may also be possible for Center staff to observe the class session or on-location activity and provide feedback on the actual event. These observations are the most taxing for Center resources, since they may require extended time or more than one observation. For on-location events, the observations may also require travel and a longer time out of the office. However, the benefits of observations and feedback are worth the cost, as long as the resources are available.

Faculty development centers may also want to create or acquire and make available additional resources to support mobile learning. It may be helpful to collect links to online mobile learning resources, like guides for devices reviews, app recommendations, and other technical documentation, including tutorials for installing or using apps. When such resources do not exist, it may be the responsibility of the faculty development center to create them. Having a central repository of resources will support faculty members in their design and development efforts and promote independence. But such online resources require ongoing maintenance as new updates of devices and apps are released. For training sessions and consultations, it is also helpful to have a set of mobile devices faculty members may use. For those faculty, who do not own a smartphone or tablet, being able to try one is the first step towards exploring mobile teaching and learning, and faculty development centers can make available devices for faculty to experiment with and this will require some considerations in budgeting and equipment policies.

### **3.4 Infrastructure**

Supporting mobile learning initiatives requires significant resources and infrastructure. Some of these may be outside of the purview of faculty development centers, but they should at least consider making recommendations to the appropriate departments or units at their institutions. For example, student learning spaces may need to be modified in order to accommodate the increased use of student-owned technology. In the classroom, this should include flexible seating, ways for students to integrate mobile technology with existing classroom technology like projectors and audio systems, and additional electrical outlets for charging or powering devices. Similar accommodations are needed in informal learning spaces, as well, where students can meet in groups to study or work collaboratively on class projects.

Communication networks also need to be prepared for an increase in mobile traffic. Wireless (WiFi) networks need to be expanded to increase coverage for both academic and student living spaces. Capacity should be increased as well, so that the ever-growing number of devices can connect and use the network efficiently. Cellular internet coverage and capacity should also be considered. Institutions can partner with cellular providers to ensure adequate service. Network security is another important issue. Security protects user data and network integrity, but should be balanced with openness to maintain usability.

Infrastructure also extends to the integration of mobile devices with institutional systems like student and employee record systems, course registration, library materials, and the learning management system (LMS). According to the ECAR report (Dahstrom 2012), the top three tasks students want to complete from their mobile devices are accessing course websites or syllabi, using the course or learning management system, and checking grades, but administrative tasks like registering for classes, ordering books, and accessing library materials were in the top ten.

With increased mobile use and integration, technical support for students must also increase. Technical services can help students connect to networks, assist with device configuration, and use of the integrated tools. This support may be available by phone, email, live chat, or drop-in centers where students can get face-to-face assistance with their devices.

Faculty development centers can discuss these issues with administrators at their institutions and advocate for increasing mobile access on their campuses. However, faculty development centers should also ensure that they have sufficient resources for training and support of mobile learning. Centers should have devices for experimentation, access to a wireless network, and physical space conducive to training and experimentation. Faculty development centers can use the devices, network, and space to offer training programs specifically on mobile learning or they can use the resources to model mobile learning strategies during other programs. Finally, due to the time required for supporting mobile learning initiatives through training and other means (e.g. consultations and creating resources), faculty development centers may need to hire additional staff members or student help and provide training to new and existing staff.

### **4. Mobile Learning Support at Northern Illinois University**

At Northern Illinois University (NIU), the Faculty Development and Instructional Design Center has been supporting mobile learning in a variety of ways that align with the mobile learning support framework. The Center began experimenting with mobile learning in 2005 by offering

training programs on podcasting and exploring the use of mp3 players for educational purposes (Faculty Development and Instructional Design Center 2012a). In 2006, the Center launched its first two podcasts, both of which are still active (Faculty Development and Instructional Design Center 2012b). Since then, the Center's mobile learning support has expanded to include technology, pedagogy, training and support, and infrastructure.

The Center has experimented with a number of mobile devices, beginning with early mp3 players and notebook computers. These devices have also included netbooks, eReaders, advanced mp3 players, and tablets. Staff members have worked with both Android and Apple devices as well as multiple form factors, including both seven- and ten-inch tablets. For official purposes, the Center has primarily used free apps to limit costs, but staff members have used other apps on personal devices.

In addition to learning about technology, the Center has researched pedagogies that support mobile learning. These include Integrated Course Design, Problem-Based Learning, Game-Based Learning, Team-Based Learning, and Experiential Learning. Staff members attended and presented at conferences and workshops related to these techniques as well as those dedicated to mobile learning.

While the NIU Faculty Development and Instructional Design started training about mobile learning with podcasting workshops, offerings have significantly increased since then. In 2011, the Center launched a Mobile Learning Series of workshops. To date, the workshops have covered such topics as location-based learning, media, eBooks, text messaging, QR Codes, mobile grading, and using the LMS to create mobile-friendly courses. The Center has also enlisted the help of experts from other institutions to discuss mobile learning design and pedagogy, including a day-long institute in June 2012 about mobile learning. The Center has modeled mobile design techniques by developing mobile handouts for day-long programs and conferences as well as by ensuring that all documentation is mobile-friendly.

To provide ongoing support, the Center created a website of mobile learning resources. The site includes app recommendations, links to documentation provided by device manufacturers, and custom documentation to demonstrate setting up a device for NIU's email and other web services. As part of its mission, the Center also maintains documentation on using NIU's learning management system. This documentation also includes details about working with the mobile access to the LMS.

Through partnerships with other units at Northern Illinois University, the Center has been able to provide recommendations on infrastructure. The Center has collaborated with committees to support the academic experience of undergraduate students and used the opportunity to promote the needs of active learners with mobile devices. The Center has also kept administrators informed about technology advances, like mobile technology, that impact the university and its students. The Faculty Development and Instructional Design Center is grateful for the opportunity to provide input to these and other groups on campus, which in turn, has helped to transform faculty development to promote mobile teaching and learning. Figure 2 shows screen captures of a sample mobile device documentation website developed by Faculty Development

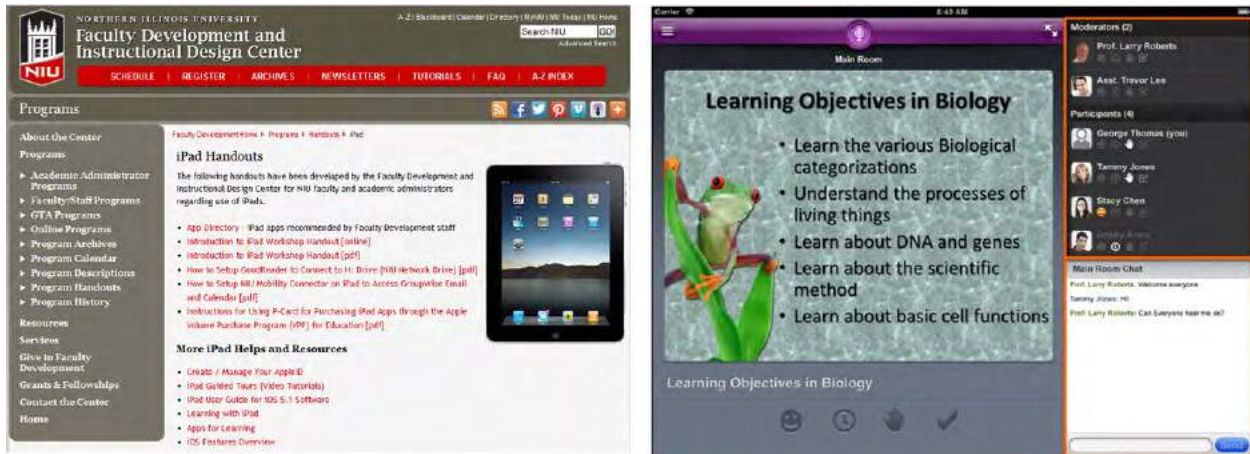


Figure 2. Sample Mobile Device Documentation Website (left) and a Sample Screen from Blackboard Collaborate™ Web Conferencing for Mobile Devices (right)

and Instructional Design Center and the Blackboard Collaborate™ web conferencing feature available for mobile devices.

## 5. Conclusions

The increase in mobile teaching and learning at higher education institutions requires faculty development and teaching and learning centers to be proactive in their support. Students have and want to use the technology, but faculty members need support to be open to experiment with mobile learning. Misconceptions about device capabilities and the role of mobile technology in the classroom may interfere with willingness to engage in mobile learning, and faculty development centers must work with faculty to dispel the misconceptions.

Faculty development and teaching and learning centers are well-suited to support mobile learning because of existing relationships within their institutions, but they need to transform themselves to influence mobile learning initiatives. By addressing technology, pedagogy, training and support, and infrastructure issues, these centers can have a positive impact on the growth of mobile learning. The centers can focus on the first three of these areas, and provide advice and recommendations on infrastructure as it may be outside the scope of their direct responsibilities.

Implementing the framework is a gradual effort. The change cannot be rushed without risking further resistance. Resources for technology will need to be built over time, as will openness and excitement for the pedagogies of mobile learning. It is possible that mobile learning, when gradually incorporated into existing teaching and learning strategies, can have a positive impact on student engagement.

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*Geographic Information System (GIS) Management Strategies for schools  
in Bangkok Metropolitan Administration*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

Schools in Bangkok Metropolitan Administration's strategies for managing Geographic Information Systems (GIS) play a crucial role in the success of the technology within the organization. As with any technological innovation, the key factor in GIS success is how it is applied to solve the school's administrative problems. Corporate wide strategies to introduce, implement, and operate the GIS how well it serves administration school needs. School management issues associated with GIS technology adoption in complex organizations. I discuss issues related to managing the introduction and use of GIS and alternative strategies for integrating GIS into education operations. The article draws on key organizational factors that must be considered when developing a GIS strategy.

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## Introduction

There are many changes in the present world as per the dynamic of Information Technology. Thailand is focusing on the development of her capacity and competition among other countries. The people development requires the development of education administration together with other parts of development Thai Education Act mentions on education for all and contribution from everyone to manage the education (all for education). This is the fundamental of education administration, which is agreed by all over the world (UNESCO, 2000). Thai government allocates the budget as a support funds to schools, facilitates and promotes the education role. To reduce the block grants problem, especially the insufficient of the capital, the limitation of the capital, capital decentralization problem and insufficient of long term funds and to give the ability to schools to administrate according to the state of society, economic including information technology, which have been dynamically changed, to satisfy the community and social needs and to fulfill the quality of education administration. According to the education reform follow up and evaluation report, the research from Education Council (2006) shows the problems in budget allocation, the Basic Education budget per student was not conform to the current situation, the needs of students, size and school's location, especially for the small size schools, which have not had sufficient budget to administrate and improve the education to reach expected quality and slow budget allocation. The expense per student makes the schools lack of budget to improve students' quality and the resource gathering is not widely operated. Government sectors have to promote and encourage the private sectors and the community to give the contribution to schools and support them to gather the education resource for school improvement according to their ability and latency. There are some recommendations regarding to budget allocation, which should be considered in terms of local needs.

Bangkok Metropolitan Administration provides the basic education curriculum to under supervision schools. It is necessary to follow the decentralization strategy in terms of academic, budget, personnel administration and general administration Bangkok Metropolitan has been followed the policy to improve the education quality in the small schools but in the reality, the schools under Bangkok Metropolitan supervision have the continuous problems , which conforms to the evaluation results of The office for National Education Standards and Quality Assessment (ONESQA) , which found that the overall efficiency. School is not effective education resource management that consists of resource capital, human resource, equipment and technology, assets and learning resource to develop the Basic School and lack of approach in Information Systems development and implementation and the information was scattered and not linked.

The way for the school administrators to manage the schools effectively is to emphasize on the implementation of MIS as it is the important strategy tool to win the opportunity and to improve work efficiency. At the present, the Geographic Information System is one of the modern Information Systems Management too, it is the powerful, which could be able to collect the

spatial data by integrating and collecting the area based data and store data as the database. The system is able to amend, analyze, display and present the Topological data and spatial data (Burrouh, 1989; Star and Estest, 1990; Montgomery & Schuch, 1993; Pickles, 1995; Rodrigues, 1995). Other than that, Geographic Information System can be applied in education administration to promote the equality and fairness in education as the system will support the school administrators to access the students' data, teachers' data and provide the solution for facility management and to promote and support the schools to search for the education resources such as wisdom scholars, outstanding teachers and knowledge source outside classroom. The administrative schools issues related to introducing and implementing technology in an organization are often more crucial to success than the technological issues. Specialized organizational and management approaches and their role in the organization's school operations the current state of GIS technology and its future directions, the relationship of GIS technology with other. GIS is a broad term used to refer to many different types of technologies and organizational implementations. In fact, the GIS in one organization could be very different from that in another.

Therefore, The researcher hope that the applied of GIS and management strategy will make the equality and the right of education resource management as the geographic information will be able to provide the information of education resource, students, teachers and the guideline of education resource management that consists of resource capital, human resource, equipment and technology, assets and learning resource to develop the Basic School.

The study of GIS management strategy for the school. Bangkok Metropolitan Administration. IT administrators can make the necessary spatial planning decisions to solve problems in the management of educational resources relevant and timely to the school achieve continuous improvement. The strategy was developed based on the principles of the possibility. Acceptable and appropriate to the context of the school. To guide the management of the school's educational resources. To have a better and more efficient and effective anyway. This will contribute to the development of quality education by the spirit of the National Education Act.

### **Research question**

How the feasible GIS management strategy for Bangkok Metropolitan Administration School for resource management administration, which would be accepted and suitable for the school context should be?

### **Objectives of Research**

To study GIS management strategy for Bangkok Metropolitan Administration School for resource management administration, which would be the feasible accepted and suitable for the school context

## **Scope of the Research**

- 1) Population and sample in this research were as the unit of analysis small schools in Bangkok Metropolitan Administration with no more than 400 students on the basis of criteria defined by the Department of Education ,total 131 schools consist of administrator and teacher involve administration
- 2) Educational resources, including financial resources, capital consists of 5 elements: Funding , Human Resources, materials and technology, Land and buildings, Learning resources.

## **Keywords**

**The Geographic Information System for school:** The information system that collects the data, analyses data and presents the output in the form of information, which could be able to use as a geographic reference. The system responds the management needs in school to plan the decision, implement and follow up according to the framework or tasks of the school

**GIS Management Strategy;** the implementation of GIS for supporting the management to make it success and efficient according to the vision.

**Education resource;** direct and indirect factors related to the education administration, which consist of capital resource, human resource, equipment and technology, assets and learning resource. There are the support factors, which make the education administration successful and efficient according to the school vision.

## **Expected benefits**

### **Academic benefits;**

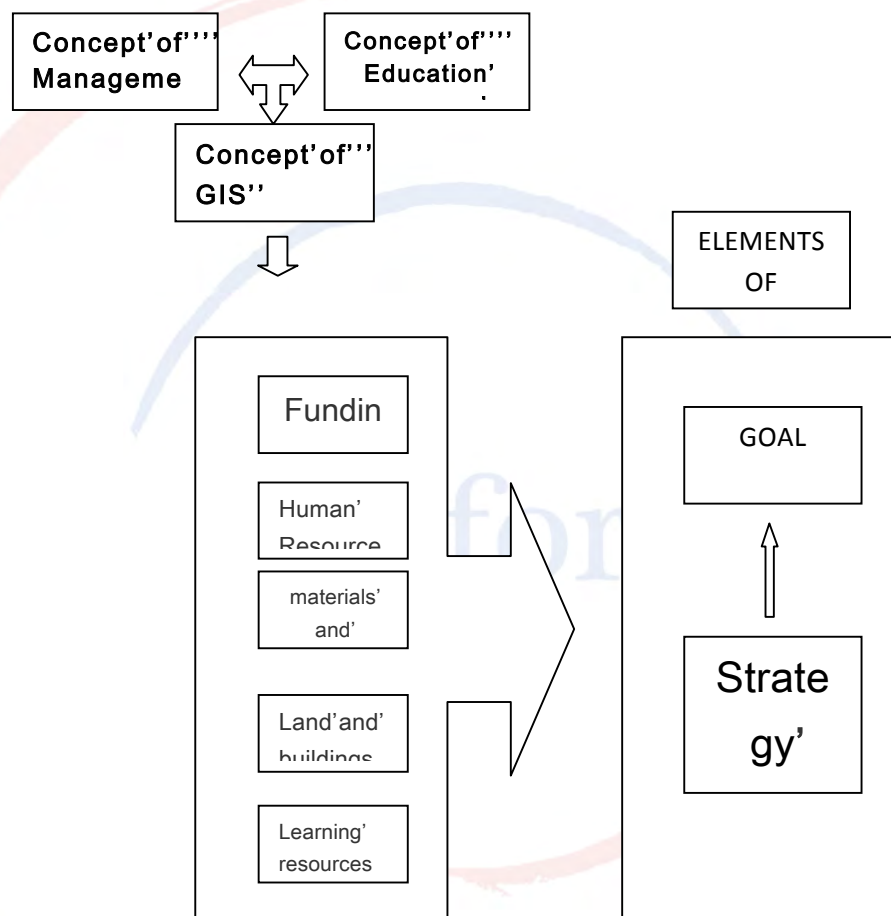
- 1) The research presented in the policy research and case study which would be applied to the research and implementation in different functions.
- 2) Having the GIS management strategy for school, which has been gone through the contribution process and be able to use as a strategy guideline, the implementation of strategy, systematically and efficient strategy evaluation and the knowledge of resource gathering distribution to improve the school for future study.
- 3) Good for interdisciplinary learning by integrating the methods in Management of Information Systems, Geographic Information System and Education Administration

### **Applied benefit;**

School will be able to use and apply the guide line of GIS for school strategy recommendation to implement in resource gathering for efficient education administration.

## **Conceptual framework**

Researchers have defined framework elements is the purpose of the strategy consists of determining the direction of the basic education of the public, including goals by the strategic management of educational resources to improve education, which will be presented in five points. which will be presented in each issue. A synthesis and a research framework .



## **Research Methodology**

### **Phrase 1. Context study for strategy draft**

- 1) Documentary study and analysis; to study, analyst and synthesize the internal and external factors related to policy, law, regulation or national plan, level of influence that effects to education resource and school context.
- 2) Survey study; to study the current state, problem of education resource management in school and management strategy of GIS for Bangkok Metropolitan Administration schools for education resource management.

**The sample** were the unit of analysis from 131 schools consist of administrator and teacher involve administration .

### **Data collection tool**

In this phrase, questionnaire for data collection designed by research would be used as a tool. The questionnaire consists of;

**Part 1** General data from interviewees. The questionnaire is Check list

**Part 2** Current state of education resource management in school. The questionnaire is Rating Scale questionnaire.

**Part 3** Management strategy of GIS for education resource management guideline for Bangkok Metropolitan Administration School. The questionnaire is open ended questions.

### **The development of tool**

1.The tool was verified by experts to evaluate the content validity and used the result to analyst the conformity by finding Item Objective Congruence index or IOC and considered only the questions, which had  $IOC = 0.50$  or more that means the questions were related to the objectives or contents.

2.Tool Try out The selected questions were selected to make the complete questionnaire and distributed the questionnaire to 30 school executives and teachers, which were not in the sample group. The data from try-out were analyzed to find research tool's efficiency, which were reliability by using the formula  $\alpha$  - coefficient according to Cronbach, 1970. The result of Reliability of the questionnaire was 0.961.

### **Data collection**

Researcher sent the questionnaires and the permission of data collection letters to the sample by post. The sample replied the questionnaires by post and received the retuned of the questionnaires from 104 schools (79 present).

### **Data analysis**

Researcher received the questionnaires and verified the completion of them then analyzed the data as below;

**1) Quantitative data analysis;** by using computer software to calculate the percentage mean standard deviation then read the meaning of average by comparing to the range as below (Best, 1978). Current state of school's education resource management;

4.51-5.00 means the management problem is critical

3.51-4.50 means the management problem is high

2.51-3.50 means the management problem is moderate

1.51-2.50 means the management problem is not much

1.00-1.50 means the management problem is low

**2) Quality data analysis;** by using content analysis method then summarized in essay. GIS management strategy for Bangkok Metropolitan Administration School for resource management administration.

## **Phrase 2 Strategy development and verification**

1) In-depth interview of experts; the objective of the interview is to verify goal, strategy, strength, weakness, opportunity, obstacle in school education resource management and to use them as the basic information to consider the GIS for Bangkok Metropolitan Administration School management for education resource management strategy that feasible and was accepted from stakeholder according to Majchrzak (1984) concept.

## **Sample**

The sample of this research were experts in policy level who have knowledge and hold/are Doctorate degree, the position of Associated Professor and have an experience in education resource management strategy by using GIS, which consisted of 9 experts. Researcher provided the "strategy draft" to the experts as a reference.

## **Data collection tool**

Data collection tool was semi-structured interview designed by researcher, which included goal, strategy, strength, weakness, opportunity and obstacle in school's education resource management.

## **Data analysis**

- 1) Quality data analysis; by using content analysis method then summarized in essay .
  - 2) Conduct public hearing of stakeholders; to verify the strategy draft by stakeholders.
- The stakeholders who attended the public hearing seminar were school executives, teachers and parent representatives, all together 30 persons. By affirming GIS management strategy for Bangkok Metropolitan Administration School for resource management administration.

## **Research summary**

As a result of the draft strategy. The in-depth interviews with experts. The public hearing. And criteria for evaluation of the strategies on the basis of a (feasible) and accepted by all stakeholders as perceived by Majchrzak (1984) deals with the stakeholders group. The result of the operation. The strategy was to mobilize resources for the development of basic education.

As a result : Current state of the resource management problems of school education. Results are as follows.

- 1) the funds or budget. Found to have a moderate level ( $\bar{X} = 3.02$ ).
- 2) the person is found to have a moderate level ( $\bar{X} = 2.61$ ).
- 3) the material, equipment and technology. There is a moderate level ( $\bar{X} = 2.81$ ).
- 4) The land and buildings. Found to have a moderate level ( $\bar{X} = 2.60$ ).
- 5) the learning that is at a low level ( $\bar{X} = 2.42$ ).

GIS management strategy for Bangkok Metropolitan Administration School for education resource management could be summarized into 5 sectors according to the strategy.

## 1) Capital or budget strategy

**Goals:** to assign the area for capital or budget gathering to develop the process of the efficient learning and teaching activities and to elevate the quality of students, teachers, and schools.

### **Spatial**

### **strategy:**

The first strategy is create a culture of team work and a strong network.

- 1) arrange a meeting to plan the funding or budget consistently.
- 2) Encourage team or network be submitted extensive Lange and listen to the opinions of all members.
- 3) Using GIS systems to track and monitor a team or network participation by all members.

Strategy 2: that promote student performance. Teachers and schools constantly and consistently.

Strategy 3 :that parents and the community were aware of the financial status of the school with a variety of methods. The opportunities. Continuously.

Strategy 4: Use GIS to manage the budget, the Parties shall participate in the development process

## 2) Personnel strategy

**Goals:** personnel, experts, local experts, monks, community leaders who have expertise, energy, money and knowledge will join to improve the quality of students, teachers and schools for the academic excellent as other countries and to establish local-wisdom teachers to promote the sustainable development.

### **Spatial strategy:**

The first strategy is coordinate relationships jointly develop sustainable youth Thailand. Through a strong network of local wisdom teachers.

Strategy 2: The development of students and staff through meaningful learning activities and network development

Strategy 3: Transparent personnel management by focusing on the individual and community participation in the implementation and monitoring.

Strategy 4: Coordinate, direct and indirect contact with the person. Guardian development network. And community development that focuses on students is significant and lasting

Strategy 5: Personnel management develop a plan that is focused on the involvement of parents. Network development. And as a community

Strategy 6: Target. Methods and evaluation of management personnel with the responsibility of knowledge and ability

Strategy 7: Thailand and Cognitive Development expert scholars to participate in the development of learning activities for students

### **3) Equipment and technology strategy;**

**Goals:** to utilize equipment and technology to improve the efficiency of learning activity management. Encourage all students to have knowledge, ability and skill according to individual learning ability. Establish the information technology and communication learning center for learning, training, student, teacher and personnel development.

**Spatial strategy:**

Strategy 1: Projects to support the equipment. And from parents or community organizations, local government organizations. The alumni network.

Strategy 2: Develop a plan to manage the materials. Equipment and information technology in both the short and long term continuous operation

Strategy 3: Push for laws governing tax for education purpose

Strategy 4: Students develop a strong networking and community involvement

### **4) Asset strategy**

**Goals:** to gather the resource to renovate or build student building, service building and special rooms to support and improve the education administration to reach the standard requirement from certified organization and to manage school's assets, which can make profit for school development. Establish the learning park in Basic School by utilizing the donation fund and provide the necessary facilities for learning park.

**Spatial strategy:**

Strategy 1: Build a strong management team of the school property.

Strategy 2: Property Management System to generate revenue transparency and accountability.

Strategy 3: Park was established learning through modern information technology. To encourage students to learn throughout life and community service.

Strategy 4: Relationships and a better understanding of the treatment and utilization of land and buildings in the school, together with others in the community.

Strategy 5: Land and resource management plans for the building of a school that produces income

### **5) Learning resource strategy**

**Goals:** to gather outside and inside school learning resource and internet learning resource to administrate the learning activities according to school curriculum and to encourage the learners to be self-directed learners with ethic and be able to live in the society with happiness and also develop the learning resource on the internet for Basic School.

**Spatial strategy:**

Strategy 1: School leaders and role models of development and conservation learning in school and learning within the community.

Strategy 2: Schools and communities together to develop and create learning networks. High up in the school or community.

Strategy 3: Accelerate the good relations and build relationships with individuals and the community in learning together effectively.

Strategy 4: Development and building a network of learning efficiency. To provide services to students and the community thoroughly.

Strategy 5: Network with alumni, parents and the community in the use and study of various sources. Both inside and outside of school efficiency with a variety of activities

## **Research result**

**1) Content coverage;** it was found that the research covered all goals, mission, strategy, measure and indicator. It was systematically coverage from broad thinking to specific thinking (Razik and Swanson, 2001). Goal was considered as a final result, the schools wanted to accomplish or make it happen in the future (Desired end) , which considered as a part of strategy that specified in the gathering of education resource and a part of suitable strategy determination guideline. Measure and indicator was suitable according to the concept of the correct way of development (do the right things) referred to Bartol et al. (2001) concept. The strategy of each function showed the measure and clear achievement indicator in quantity and quality of process. The strategy included the framework of the administration activity was needed the systematically decision making process by contribution or decision from every sectors. It is the directed planning, flexibility and environment conformity, the process of participation strategy, decentralization and encouragement. The strategy guideline showed the decision process related to the future vision and current circumstance by considering the outside environment and inside, which focused on planning that led to the goal development of desired vision.

Therefore, to implement the GIS strategy and to administrate the education resource for training goal process and to conform to the principle of reaching the school based management, schools had the power in efficient administration by considering in the actual needs, existing resource and focused on participation that made schools to achieve the efficiency resource gathering for school development in the future.

## **2) Context conformity**

Strategy development came from the actual context on insufficiency of quality in education administration. By using the standard to verify the development of strategy to see the outcome according to Majchrzak (1984) concept, it had been divided into 2 categories; 1) Feasibility, considered from the ability of the process by having sufficient resource, risk, regulation that promoted the implementation and 2) Acceptability from stakeholders, considered from the process to get the strategy, coverage duty, prominent point, law conformity, regulation, policy from original affiliation and school's context.

### 3) System approach

System approach was conducted according to Seiler's successful resource gathering concept (Timoty L. Seiler, 2003). In the process, the school executives and team must adhere to the ethic in resource gathering (ethical in fund raising or resources mobilization), which conformed to Stenbeck (2006) concept that includes lawful, truthful, accountable and respectful to donors. The process could be easy applied to implement in education resource gathering and conformed to the quality cycle process of Deming's cycle or be able to apply to conform the operation cycle. In every process, school executive should focus on the participation from every function, especially from parents and community.

### Research recommendation

#### 1. Research recommendation for result usage

1) The strategy have been applied according to school context and implemented to the school which have the insufficiency of resource, accessibility problem, different economic and context. However, the user should stick to the participation in process in various ways, continuous and long term process and conduct the evaluation and report the operation process frequently.

2) There should be the way to promote and develop teachers and executives to have knowledge, understanding and have efficient skill in GIS administration for resource management. School may ask for the expert or knowhow from academic institute to support the implementation in terms of workshop or training for school personnel. Other than that, there should be a support and encouragement for the resource gathering in every school such as establishment of the network for patronage people who supported school and presenting them the commemorative certificate.

#### 3) Recommendation for the future research

3.1) Development of the education resource gathering model to support the different size, location, readiness and context of school in the community.

3.2) Study of model for knowledge skill development and attitude of school executive in education resource management.

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*The Study of Knowledge Management of Teacher Professional Training Schools,  
Faculty of Education, Rajabhat Rajanagarindra University, Thailand*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

The research objectives were to investigate knowledge management of professional teacher training schools and to compare those knowledge management as classified by type of school and Location of school. The research samples consisted of 17 administrators and 110 teachers. The research data were collected by questionnaire and interview. Mean, standard deviation and ANOVA were employed for statistically data analysis.

The research findings were as followings :

1. The Knowledge management of teacher professional training schools which cooperated with faculty of Education, Rajabhat Rajanagarindra University as a whole was at a high level. Ranking by mean scores from the highest to the lowest were Knowledge utilization, Knowledge identification, Knowledge acquisition, and Systematic knowledge management respectively.
2. Comparison of Knowledge Management of teacher professional training schools which cooperated with faculty of Education, Rajabhat Rajanagarindra University as classified by type of school, The opinions toward knowledge management of administrators and teachers in primary and secondary schools were not significantly differences.
3. Comparison of Knowledge Management of teacher professional training schools which cooperated with faculty of Education, Rajabhat Rajanagarindra University as classified by location of school, The opinions toward knowledge management of administrators and teachers in schools which situated inner city area and outer city area were significantly differences. and there was no co-effect between school type and school location to the Knowledge Management of teacher professional training schools.

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## Introduction

### Background and Significance of the Study

In globalization and changing world, many countries including Thailand are facing the New Economy System (NES) which utilizes information and knowledge materials. This system encourages society to create innovations to elevate capability of national competitiveness. As the result, our society in New Economy System has continuously developed to knowledge-based society. which has arisen because countries and international organizations recognize that knowledge as the critical element to develop politics, economic and society both domestic and international. Moreover, knowledge has become a significant factor of economic growth in the era of information technology revolution. Hence, we can state that knowledge in human being is the main factor in economics and society development. (Pathomlek, 2003)

The country's capability measurement is changed from economic growth index and GDP to the ratio of international innovators of each country because knowledge has become the factor that determines rules and profit of the new economic system. In the other words, knowledge is the most important factor in manufacturing and can be transferred as Intellectual Capital which is the most valuable property of organization. Wealth in the new economic system and utilization the new capital have become the most mission of all organizations. In the other words, nowadays, the world community gives priority to intellectual capital or knowledge capital since it has become an important factor for creating advantages to society and nation and has become an energy to drive social development. In the organization level, to survive in such high competitive situation, each one needs knowledge and ability about Knowledge Management (KM) because the concept of knowledge management has more involved and effected to the changing world.

Especially, government agencies must change their paradigm to increase ability and efficiency to compete in international level (Charoenwongsak, 2002: 4). Panitch (2004: 5) stated that Thai society has needed to develop knowledge and ability to create innovation from knowledge which has been the force to drive the change and the paradigm change of Thai society to survive in globalization phenomenon. So, every organization has to adapt itself for inventing new innovation and knowledge (Kettut. 2001: 69-70). Knowledge management is an important factor that facilitates organization to learn more rapidly and efficiently and to gather fragments of knowledge together then the organization can utilize it and encourage their staffs to learn more and more.

Characteristic of new era organization that can adapt themselves to rapidly change is the organization that seeks for opportunities to change systematically. In changing, they must develop their management system to support growth by (1) becoming a learning organization which consists of leadership, teamwork and systematic thinking, (2) applying Total Quality Management, and (3) applying continuous process improvement and Knowledge Management. Learning organization is the organization that increases their performances and vision continuously and everyone in organization learn together continuously. (Sarattana, 2004 : 10).

The important factors that encourage schools to success is knowledge and awareness about knowledge. Especially in learning society era, the school must shift their paradigm and adjust management system to emphasize on knowledge management that leads to sustainable development. Knowledge management is new issue for school. Moreover, it is a very vast framework that is difficult to apply entirely. So, clearly organization goals will lead to efficient and effective knowledge management in school. Knowledge management has four important elements as diversity people, gather them to work creatively, find the new ways to work and trial

and learn new knowledge from outside organization properly. (Panich : Online) The most important problem in knowledge management is that the organization doesn't concern about one of knowledge management elements which interrupts the knowledge cycle. (Wongprasert, 2005 : 72). Likewise, Watchai (2003 : Online) said that academic achievement must achieve both in quantitative and qualitative aspects and must consider its effect on environment, health, ethics, law and society. So, the instrument to enhance education of nation to meet the third criteria: developing learning society is to develop robust method of learning which can measure by academic service and cooperation with community to become a learning society and knowledge society for supporting learning source and learning mechanism, and knowledge invention and knowledge management in every level of society.

The faculty of education has a very important mission to create high quality teachers by developing the curriculum which contains four courses - Teaching Observation and Participation, Train Teaching, Professional Teaching Practice in School 1 and Professional Teaching Practice in School 2 – to encourage teacher students to learn from experiences in real situations and environment in schools. The schools must prepare learning resources such as profession teachers, learning source and knowledge for teacher students. And the faculty has selected schools by their readiness which leads to experiences and attitudes that are gained by teacher students. So, schools need to adapt their role in knowledge management to response to the present education system. Knowledge management is the process to gather scatter knowledge in organization systematically, and to make it accessible and utilizable. Knowledge management method comprises of various processes such as inventing, collecting and processing knowledge for utilizing the knowledge accurately, promptly and suitably. The objective of knowledge management is to develop work quality, human resource and knowledge base. Therefore, the factors that effect to knowledge management must be concerned in order to lead their organization to be effective learning organization. These factors are policy and objective, structure of organization, vision, mission, teamwork, information technology, leadership, motivation, environment and learning culture of organization.

The researcher who is responsible for teacher professional training program of the faculty of education interested to study about knowledge management of teacher professional training schools to gather information for further teacher professional training development and program improvement.

### **Objectives**

1. To investigate knowledge management of teacher professional training schools, faculty of education, Rajabhat Rajanagarindra University.
2. To compare knowledge management of teacher professional training schools categorized by school type and school location.

### **Method**

This research intended to study knowledge management of teacher professional training schools that cooperated with faculty of education, Rajabhat Rajanagarindra University by following procedures;

#### **1. Population and sample**

- 1) The population comprised of 18 administrators and 155 teachers from teacher professional training schools under Chachoengsao Educational Service Area 1 and 2 in academic year of 2010.
- 2) The sample consisted of 17 administrators and 110 teachers from the schools. Size of sample was decided according to Krejcie & Morgan table. (Krejcie &

Morgan. 1970 : 607-610). Sample obtained by the mean of simple random sampling technique.

## **2. Instruments**

The instruments were consisted of interview form and questionnaire. The questionnaire divided into two parts:

Part one: Background information (checklist)

Part two: 48 questions about knowledge management with a set of 5 item-Likert's rating scale questionnaire as followings:

- 5 = Extremely applied knowledge management
- 4 = Much applied knowledge management
- 3 = Moderately applied knowledge management
- 2 = Little applied knowledge management
- 1 = Seldom applied knowledge management

## **3. Developing the instruments.**

- 1) Studied theories, concepts, documents, textbooks, and research about knowledge management.
- 2) Developed questionnaire about knowledge management.
- 3) Developed interview form about knowledge management.
- 4) The questionnaire and interview form were approved by experts, for content validity.
- 5) Adjusted questionnaire and interview form according to experts' comments.
- 6) Interviewed sample.
- 7) Tried adjusted instruments to the schools that were not the sample. The reliability of instrument was 0.894.
- 8) Collected data by the instruments.

## **4. Collecting data.**

- 1) Contacted professional training schools for permission to collect data.
- 2) Interviewed sample (conducted on November, 24<sup>th</sup> 2011).
- 3) Sent questionnaires to 15 schools.
- 4) Ten days later, sent staff to collect the questionnaires.
- 5) Check the collected questionnaires.

## **5. Statistical analysis.**

- 1) frequency and percentage were analyzed for background data and information.
- 2) Mean ( $\bar{X}$ ) and standard deviation (*S.D.*). were employed for data analysis of knowledge Management
- 3) ANOVA was applied for comparison between factors.

## **Results**

The findings revealed as followings:

1. Background information of the samples, there were 35 males and 92 females. Most of the samples (61.90%) graduated bachelor degree. Samples were one-hundred and ten teachers and seven-teen administrators. One-hundred of them worked in secondary schools and twenty-seven worked in primary schools. Sixty-nine of them worked in schools located outer city area of Chachoengsoa and fifty-eight of them worked in schools which located inner city areas.
2. Knowledge management: In overall, teacher professional training schools which cooperated with the faculty of education Rajabhat Rajanagarindra University much applied knowledge management (mean = 3.86). The elements of knowledge management ranking from the highest to the lowest scores were Knowledge utilization, Knowledge identification, Knowledge acquisition, and Systematic knowledge management. Each element had details as followings;
  - 1) Knowledge identification: found that all aspects of this element gained rather high score. The aspects ranking from the highest to the lowest score were to encouraging staff to learn, participate and work independently and create new invention, having strategies or policy that encourage habit

to learn, arranging training courses, seminars, workshops or academic events to enhance staff efficient and arranging training courses, seminars, workshops or academic events both inside and outside the organization for knowledge sharing.

2) Knowledge acquisition : found that in overall and every aspects of this element gained rather high score. The aspects ordered from highest to the lowest score were administrator encouraging staffs to participate in training courses, meetings and seminars continuously and encouraging to applied gained knowledge to work, schools searching for knowledge from many sources and introducing to staffs, schools recognizing worth of staffs and encouraging them to introduce knowledge to all of staffs and the least score aspect was school searching for knowledge systematically.

3) Knowledge invention and use : found that nine aspects of this element gained rather high score and an aspect gains medium score. The most ranking aspect was staffs interesting in getting knowledge and seeking for advice from experts without hesitation. The second ranking aspect was school arranging activities to enhance knowledge of staffs. However, there was the aspect that gained medium score which was school preparing budget for staffs to get additional knowledge.

4) Systematic knowledge management: found that in overall and most aspect of this element gained rather high score and only aspect gained medium score. The first three highest score aspects were school managing knowledge systematically, School emphasizing on working method report and school having up-to-date equipments in searching collected knowledge. However, there was the aspect that gained medium score which was school summarizing knowledge into essay and upload to school's website.

5) Sharing knowledge: found that in overall and every aspects gained rather high score. The aspects ranking from the highest to the lowest score were school organizing activities for knowledge sharing, school acknowledging value of knowledge, skill and expertise of teachers and encouraging them to share those knowledge throughout the school, Information system of school being up to date and reliable information which enhanced working skills, and the least score aspect was that school staffs often having chances to learn from experts.

6) Knowledge utilization : found that in overall and every aspects of this element gained rather high score. The aspects ranking from the highest to the lowest score were staffs using knowledge to enhance their efficient, staffs planning in important activities, staff use knowledge for themselves, others and society and, the least score aspect was that staffs using knowledge to create innovation both in work life and personal life.

7) Knowledge service: found that in over all and every aspects of this element gained rather high score. The aspects ranking from the highest to the lowest score were teachers having creative thinking skill to integrate knowledge and use the results efficiently, school permitting other organizations to study about their knowledge management system, school updating knowledge continuously and knowledge management system of school facilitating teachers to conveniently utilize knowledge easily and rapidly.

3. The opinion of administrators and teachers in primary and secondary schools about knowledge management of teacher professional training schools were not significantly differences. ( $p = .297 > .05$ ). But the opinion of administrators and teachers when categorized by school location (inner city area and outer city area) was significantly difference ( $p = .048 < .05$ ). However, school type and location had no co-effect to knowledge management ( $p = .298 > .05$ ).

## Discussion

As the findings have shown, there are important issues to be discussed as followings;

1. In overall, knowledge management of teacher professional training schools which cooperated with the faculty of education Rajabhat Rajanagarindra University gained high score, corresponds with study result of Lachuntuk (2003:Abstract), Maswanna (2008: Abstract), Saraprang (2008 :Abstract) and Karnsa-ard (2008 :Abstract). But contrast with study of Harnpanich (2003 : Abstract) which found that administrators of universities had noticed that, in present, knowledge management was merely applied. However, the result corresponds with the study of Charoenpat

(2009 :Abstract) about knowledge management of staffs in Krungsri Ayudhaya Bank (Co, Ltd.) in Phuket. The objectives of his research were to study overall knowledge management of it's staffs, and to compare personal factors that affect knowledge management. The study found that in overall knowledge management was rather much applied and emphasized on knowledge invention, knowledge searching, knowledge specifying, knowledge storage, knowledge sharing and knowledge utilization, respectively. However, the result doesn't correspond with the study of Srikwanchai (2007: Abstract) that studied about knowledge management in elementary schools under Ayudhaya Educational Service Area 1. His study found that teachers little applied knowledge management in overall and also in each element: knowledge invention, knowledge storage and knowledge utilization. Except, knowledge searching was moderate applied. From abovementioned results, we may conclude that from now on, knowledge management is the key element of successful organization to achieve it's goals. (Makhum,2006: 280-281; citing Sallis; & Jones. 2002: XIV). Knowledge Management is modern management idea that realizes the value of human resource. Every staffs of organization can responsible for every main tasks and work as team to drive the organization effectively. Knowledge management is coordinated process of each units in organization to use knowledge for better overall efficient. Also, it is the process of practitioners. Theorists or academics are only resource persons or facilitators in the process. Bacha (2000, cited in Putes,2008 : 24) stated about benefit of knowledge management that knowledge management made the organization to retain their expertise, skill and knowledge that may lost when they lost some staff. Knowledge management can enhance efficient of decisions by facilitate in acquiring information and knowledge which needed for the decision.

Due to decision makers must decide rapidly with quality knowledge management that adaptable and flexible, it made them understand about works objectives and create good attitude toward work. In aspect of service, the knowledge management made staffs to understand in customers, tend and competition then it can narrow the gap between competitors and open opportunities to compete. Makhum (2006: Abstract), studied about developing indicators of knowledge management of teachers in basic education schools under the Ministry of Education. The objectives of this study were to develop teacher's knowledge management indicators and to examine correspondence of LISREL model of knowledge management indicators. The study found that there are six main elements of knowledge management of schools under the Ministry of Education as knowledge identification, knowledge searching, knowledge invention, knowledge sharing, knowledge storage and knowledge utilization. As of the policy of the ministry, the schools rather much applied knowledge management.

2. The highest score element was knowledge utilization which corresponds with the study of Saraprang (2008:Abstract) which found that guideline in developing knowledge management were opportunities to share knowledge, experience and skill with experts and to create friendly environment in workplace which lead administrators and teacher to share more knowledge and extend their network to sharing knowledge in order to utilize the gained knowledge in different context.

3. The lowest score element was systematic knowledge management which corresponds with the study of Srikwanchai (2007:Abstract) which found the same result. Then, the school may need to find new convenient and safe system to collect knowledge such as information technology system according to Education Act (1999 and The additional 2002) section 22 which emphasizes on encouraging students to gain skills in information technology on learning and their lifelong learning. Panich (2003:84-90) proposed that collecting knowledge by efficient technology is the way to enhance efficiency in knowledge flow, knowledge storage and retrieve. Also, Maquarde. (1996: 27-30; cited in Makhum. 2549: 294) found that systematic knowledge storage was rather few applied when compare with other elements. This may because of schools

lack of readiness in staff, equipments, technologies, skill and knowledge to collecting data systematically. As well, Nekmanurak, (2007,cited in Srikwanchai .2007 : 70) stated that teachers in primary school rarely applied knowledge management method to enhance their teaching efficiency and their schools lack information in systematically knowledge management.

4. When categorized by school type, the study found that no different between administrators' opinion about knowledge management. The result correspond with the study of Karnsa-ard (2008: Abstract) which found that government officers who worked in difference school size had no difference in their opinion concerning knowledge management. In other hand, the result contrasted with the study of Maswanna (2008 : Abstract) which found that the schools that had different sizes had different knowledge management.

5. When categorized by school location, the study found that administrators have different opinions. The result corresponded with the study of Charoenpat (2009 : Abstract) which found that in different agents there was difference in level of knowledge management. The reasons of difference might be the result from difference in context of inner city area school and outer city area school. Most of inner city schools were large size schools and had sufficient staffs. Meanwhile, most outer city area schools lack of staffs and other resources. Beside, modern technology is one of important factors in successful knowledge management because technology can support working and learning of staff. In addition, technology is the easy way to create and manage database and to share knowledge. After all, It doesn't mean that we need the expensive technology to create knowledge management system, what the most important is the knowledge. The Fourth Asian Conference on Education 2012 Official Proceedings Osaka, Japan

management system or method that corresponds with characteristics of the organization that lead to maximize knowledge management utilization.

## **Recommendation**

### **1. For utilization of research results.**

- 1) Support persons in school to store knowledge management systematically.
- 2) Arrange training courses, meetings, seminars and academic events as channels to transfer knowledge to both inside and outside organizations.
- 3) Each school should arrange activities to increase staff knowledge such as training courses, meetings, seminars, presentation and mentoring. Also, prepare budget for human resource development.
- 4) Each school should gather knowledge of their teachers and transform to essay for uploading to their website as knowledge storage.
- 5) School staffs should often have opportunities to gather knowledge from experts.
- 6) Encourage school staff to utilize knowledge in both work and personal life.
- 7) Schools should set convenient knowledge management system for their staffs to retrieve knowledge easily.

### **2. For further research.**

- 1) Study about knowledge management in qualitative research and other factors of knowledge management.
- 2) Study about factors that effect to knowledge management of schools.
- 3) Study relationship between change leadership and knowledge management in schools.

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*A Learning Process Suitable for Contents in Education Law Course*

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Official Conference Proceedings 2012

Abstracts

The purpose of this research is to study a teaching method by using a learning process suitable for contents in Education Law Course. This Course is an educational foundation for teaching profession program of the Faculty of Education and a mandatory class for first-year students.

The research is conducted by using samples of selected 40 first-year students. The students are divided into 10 groups of 4 in order to perform designed activities. The research consists of two sets of tools which are 1) a group study set 2) an after teaching and idea sharing among groups set. Each set includes a case study on Education Law, a knowledge test, and a problem-solving and creativity test.

The study finds that the learning process which is suitable for contents in Educational Law Course is a teaching method based on an exchange of views among group members combining with instruction and guidelines from an instructor. Such method will help students to develop skills in two ways which are as follows:

1. Knowledge skill – The students are able to understand more clearly on the goal of the subject, to better conclude the key contents and points, and to apply the principles to various situations.
2. Problem-solving and creativity skill - The students are able to develop practical problem-solving guidelines, an alternative problem-solving, an ability to foresee problem-solving and future events and to predict future behaviors and occurrences from related experiences, and a logical reference to situations, culture, influences of information technology and surroundings. Moreover, the students' skills on using language for communication are improved that the students can better communicate in writing by knowing how to make a sequence of situations, how to utilize and connect information in an analyzing process, and how to select proper words or language for explanation.

**Keyword :** Learning process, Knowledge teaching, Problems solving and creative thinking teaching, Contents in Education Law Course, Case study.

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## Introduction

Learner emphasis policy is directly relevant to determine learning and teaching methods, emphasizing on learners studying in their areas of interest, participating, researching, practicing and application. The policy had lead to student centered learning (or child centered learning) which has been known throughout the Thai academic community for a long period of time. However student centered learning hasn't been as successful in practice due to the fact that teachers still adhere to the conservative pedagogy. Although Thailand's education reform had launched the new regulations in Thai education policy; stating that every teacher now has to apply the student centered method. Teacher began to emphasize this method, which lead to studying, understanding and finding ways to apply this method tangibly (Chowkeeratipong, N. et al, 2010).

Education Act (1999) sections 4-22 states the tenet of education management is that everyone has the ability to learn and develop themselves and that learners are the most important element. Thus, the learning processes must encourage learners to develop themselves naturally and to their full potential. The 1999 Act, section 24 (learning arrangement method) regulates that education institutes and relevant agents have to (1) Assign contents and activities according to learners' interests and aptitude by emphasizing their individuality. (2) Drill skills, thinking methods, management, handling situations and applying knowledge to prevent and solve problems. (3) Provide direct experience with emphasis on thinking skills and stimulating learners' enthusiasm. (4) Integrate knowledge proportionally, cultivate virtue and good value. (5) Encourage teachers to arrange their learning environments using research as a learning process. (6) Encourage continuous learning with the cooperation of parents and local communities. Section 28 states that all curriculums must be designed in accordance to the diversity of learners at each level, age and potential. Curriculum content must include both academic matters and technical matters. Also, the curriculums must put emphasis on balancing knowledge and virtue. Especially, at the undergraduate level which has to emphasize on high level professionalism and research.

Peers are very important to learners. In the group study method, learners had a chance to share their knowledge in groups and cooperate in the learning process. Cooperative learning is a method that builds good relations between learners, encouraging them to share their ideas and problems creating a good learning atmosphere. Also, learners learnt about peer behaviors which lead to adjusting themselves to their communities and understanding themselves and also others. Moreover, they had chances to share experiences and create a good attitude towards teamwork (Intaya, Y. 2007). If the cooperative learning process is used continuously, it will develop member's cooperative learning skills (Kemmanee, T. 2005).

Teaching models are important for the efficiency of teaching methods. Teaching models that conform to theories and learning principals will guide learners to gain knowledge appropriate to their courses. Teaching methods are processes that teachers use to teach the objectives of their courses. Incidentally, each teaching method has its merits both strong and weak. An example of this is the lecture format method in which learners play a passive role in the lesson and in accordance to this lecturer's must have the ability to communicate captivantly to gain the learners attention. Additionally, the lecture format method can't respond to the learner's individuality (Rattanasasi, K. 2007). The case study method's strong point is its openness to learning but if the learners have an unequal level of knowledge and experience, the method will

not yield an appropriate outcome. Moreover in the case study method, opinions of learners usually incline towards group opinion, leading to failure of the method (Rattanasasi, K. 2007).

The educational foundation for the teaching profession department has many courses that are relevant to law and many other mandatory courses.

Courses about law are usually taught using the lecture format method and contain a lot of information that students have to learn and remember. From the above mentioned problems and benefits of the various teaching methods, this research was to study teaching methods suitable for Education Law courses.

### **Research Question**

What is a suitable learning process for contents in Education Law Course?

### **Objective**

To study learning processes suitable for contents in Education Law Course.

### **Area of Research**

#### **1. Content**

Main issues of the studying learning process (1) knowledge teaching and (2) creative thinking skills and problem solving teaching.

#### **2. Population**

Population was first year students from the Faculty of Education at Universities throughout Thailand whom had enrolled in subjects relevant to education law.

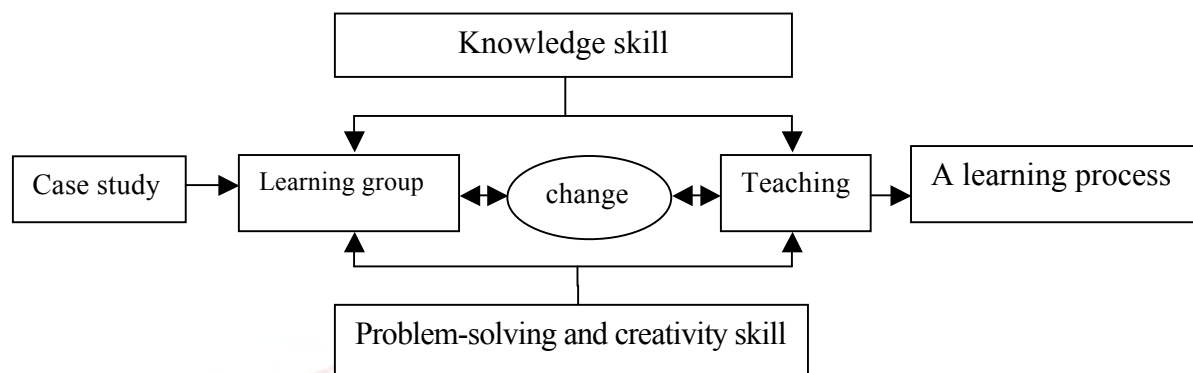
Samples were 40 first year students in the Faculty of Education of Rajabhat Rajanagarindra University. The sample was selected by purposive sampling method and then divided into ten groups of four.

### **Expectations**

1. Use result as guidance in developing teaching subjects that are relevant to education law.
2. Use results as guidelines in the development of other student centered methods.

### **Framework**

From Bloom's Taxonomy (1956) and Bloom's Revised Taxonomy Anderson (2001), researcher developed framework:



## Method

Research method was separated into five steps:

1. Literature review, included the opinions of experts, selected case study and developed tools.

1.1 Research Tools comprised of:

1.1.1 A case study about education law.

1.1.2 Knowledge, problem-solving and creativity tests.

1) A Group Study Set.

2) After Teaching and Idea Sharing Among Groups Set test.

2. Sampling process

2.1 The population in this study was first year students whom were studying in the faculty of education throughout the universities and enrolled in courses that were relevant to Education Law. The sample of the study was first year students who were studying in The Faculty of Education of Rajabhat Rajanagarindra University. Forty students were selected by purposive sampling then were separated in to ten groups of four.

2.2 Applying the case study and tools to the sample.

2.2.1 Separated the sample in to ten groups of four.

2.2.2 Distributed copies of the case study to all students and distributed the Group Study Set test to each of the groups.

2.2.3 Each group studied the case and completed the Group Study Set test.

2.2.4 After 30 minutes, the researcher collected the Group Study Set test

2.2.5 Instructor lectured about content, gave guidance and discussed with the class for 15 minutes. Then gave another 15 minutes for groups to completed the After Teaching and Idea Sharing Among Groups Set test.

2.2.6 Discussion.

3. Compared results of the first and second test.

4. Summarized issues and then presented in a table.

5. Summarized knowledge that had been gained, creative thinking skills and problem solving skills used.

## Result

The results are presented in following table;

Group number	Learning group		Teaching and change	
	knowledge	Creative thinking skill	knowledge	Creative thinking skill
1.	- Can summarize content from the case study.	- Found problems and means to solve the problems.	- Better composing in presenting idea. - Better sequencing. - More detail. - Can analyze the case study.	- Can present the means to solve problems concretely. - Various problem solving means.
2.	- Can summarize content from the case study.	- Can reasoning the issues from the case study but can't clearly define means to solve problem.	- Clearly set the goal of reading the case study. - Can brief the issues in the case study. - Found more issues in the case study.	- Have concrete problem solving means. - Can categorize problems in difference issues. - Various problem solving means.
3.	- Can summarize content from the case study.	- Found ordinary means to solve the problems.	- Apply Education Law as criteria.	- Use situation, culture and information technology as criteria in problem solving. - Can reasonably predict behavior and situation to prevent the problems.
4.	- Can summarize content from the case study.	- Can define the problem solving means from the case study.	- Can completely and clearly summarize the issues.	- Found problem solving means that beyond the information in the case study.
5.	- Can summarize content from the case study.	- Can broadly define the problem solving means from the case study but can't apply concretely.	- Better in summarizing critical issues.	- Have clear problems solving means. - Can set priority to the problems.
6.	- Can	- - Can broadly	- Better in	- Can define problems and

	summarize content from the case study.	define the problem solving means from the case study but can't apply concretely. - Some problems in communication.	summarizing the critical issues. - Better in composing. - Better in reasoning.	problem solving means specifically. - Can present briefly and clearly.
7.	- Can summarize content from the case study.	- Can define the problem solving means from the case study.	- Can summarize critical issues. - Better composing the issues.	- Have clear problem solving means - Can present briefly and clearly.
8.	- Can summarize content from the case study.	- Can broadly define the problem solving means from the case study but can't apply concretely.	- Gain knowledge beyond the case study. - Additional analyzing.	- Have clear problem solving means - Can present briefly and clearly.
Group number	Learning group knowledge	Creative thinking skill	Teaching and change knowledge	Creative thinking skill
9.	- Miss some critical issues from the case study.	- Can define the problem solving means from the case study.	- More summarizing and analyzing critical issues. - More emphasize on the causes of problems.	- More concrete problem solving means. - Have various problem solving means for each problem. - Can present briefly and clearly.
10.	Can summarize content from the case study but miss some issues.	- Use problems as base to find the means to solve.	- Can analyze the causes of problems.	- Found more problem solving means. - Emphasize on analyzing the causes of problems.

The results from the “Group Study Set and the After Teaching and Idea Sharing among Groups Set test” can be summarized as follows:

### The Group Study Set

Knowledge: Sample understood assigned content, could summarize the content but not clearly, understood some issues. In addition, they could recognize some details or important issues.

Creative thinking and problem solving: Sample could use creative thinking skill to analyze the problem solving process according to the content. But couldn't create any new ways in which to

change other than the content they had been given, thus couldn't define clearly the problem solving process.

### **The After Teaching and Idea Sharing Among Groups Set.**

Knowledge: Sample completely understood assigned content. They could define the intention of the content and could clearly present the ideas. They saw more facets of the case and could refer to Education Law. Also, they could present their ideas clearly and briefly.

Creative thinking and problem solving: The sample could create ideas beyond the assigned content, could analyze and find problem solving means and could categorize the issues of the problems. In addition the group used their knowledge of their culture, personal experiences and IT as reference to create new ways to think creatively, problem solve and predict the desired solution which subsequently led to more ways to prevent the problems, thus could define more specifically the solution to the problem. Moreover, they could prioritize their problems according to need, importance and urgency. With this they could present their ideas clearly and briefly in a practical way.

### **Discussion**

From the study's results, the researcher could discuss results as follows;

1. From the literature review, previous studies showed that the group method could develop learners' learning skills via cooperative learning leading to success increasing learners' enthusiasm and encouraging them to delve further for true understanding that could lead them to find their true efficiency and aptitude (Johnson & Smith, 2008). In addition, group work can help weak learners to get along with other learners via cooperation and sharing, both academic and personal (Intaya,Y,2007). Group work also increases learner's personal responsibility, encourages them to participate and express their abilities, gain knowledge from experiences and select learning material by themselves (Bruner, 1963). For improvement and better efficiency in the use of the group method; learners should participate continuously in group activities and learn from appropriate level material and gradually moving on to more difficult material.

Setting learners in various situations will encourage more effective adaptation to the situation (Tylor, 1998). In developing learners' knowledge, in addition to the group method, teaching methodologies are very important factors in creating knowledge and skills. There are many varieties in teaching method each having their advantages and disadvantages. Instructors may need to combine teaching methods in order to obtain the best results. The most important principal is to select suitable teaching methods for the learner, subject and size of class (Ratanarasri, K. 2007).

2. Creative thinking and problem solving skills; group method develops learners' learning skill via cooperative creative thinking. In the group method, weaker learners often give less cooperation and don't recognize their importance within the group. Alternatively, superior learners often use their abilities to problem solve; when group member don't cooperate they often do all the work alone. In addition, superior learners can think faster, sometimes too fast to the point that other learners can't catch up with them. Some of them lack the ability to control their emotions causing relationship problems; while weaker learners often look down upon themselves. These problems would be lessened if the instructor paid proper attention and encouraged the

group to gain better understanding and solve the problems together, thus leading to efficient learning (Intaya, Y, 2007).

Teaching by the group method can stimulate thinking skills as stated in Bloom's Taxonomy (1956) which develops creative thinking skills and problem solving skills based on knowledge, comprehension, application, analysis, synthesis and evaluation. Except for drilling, these thinking skills can be better develop via coordinated learning. Bloom's revised Taxonomy (Anderson, 2001) describes that learners must develop through all thinking skills before they can acquire better creative thinking and problem solving skills. Creative thinking skills will emerge when learner have enough knowledge and experience to apply these new skills.

3. The suitable teaching method relevant to education law is the group learning method with lectured guidance. The method can develop learners' knowledge, creative thinking and problem solving skills. Moreover, the method can develop learners' communication and presentation skills which are consistent with Kitti Rattanasri's study (2007). In which the study stated that; in any subject, content often aims to create knowledge, skill and attitude. Teaching knowledge is given through content, theory, principal and fact to learners. While drilling target skills until learners gain expertise can be a viable method.

Teaching by using case study isn't intend to find the only answer for each question but encourages learners to find various answers and reasons which lead to circumspect decisions. In addition, case study method encourages learners to face and solve the problems and stimulate learners to analyze the case.

The study of Yuphin Intaya (2007) supports the use of the group learning method. The study found that using the group learning method created positive attitudes to learning. The majority of the sample (97.81%) had a positive attitude towards the group learning method. Pattamarin Kerdsonkram (2011) studied the use of the group learning method in Thai teaching. The study found that teachers preferred to use the group learning method as it encouraged cooperation, teamwork and opportunity to practice. Learners' efficiency is highly significant towards a more positive attitude towards learning. Springer & Mary (1999) studied the efficiency of small group learning at SMET (Science, Mathematics, Engineering and Technology) and found that learners' efficiency had increased.

## **Suggestion**

### **1. Using study results.**

1.1 Study all processes and overview the methods thoroughly before applying them to the classroom. Follow the process carefully, but may need experimentation before application in a class room environment.

1.2 The method could be applied to students of any other faculty or university as the method was developed in accordance to core subject matter of the undergraduate curriculum.

### **2. Suggestions related to the policy.**

2.1 Universities should encourage staff to learn more about learning methodologies to be applied in their courses.

2.2 Universities should encourage staff to develop new learning methods on a continuous basis.

2.3 Universities should do more research on the group learning method so as to reach a standard and applicable method in teaching.

3. For further study

3.1 Compare the results of this group learning method with other related research

3.2 Bring the study to a national scale.

3.3 Study the learning process in various ways to develop new methods

3.4 Replicate this study and tools used to develop a more suitable learning method for subjects relevant to education law.

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*Structural Model of Sketching Skills for Design Education*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

A great deal of research has been conducted on the effects of sketching for design educations. However, previous studies have failed to elucidate the ways in which sketching skills such as the use of perspective and shading influence these effects. If the role and effects of sketching skills could be elucidated, it would be possible to transform sketching training, on which so much time has conventionally been spent in acquiring skills, into an avenue for the effective acquisition of techniques for generating ideas for design features. This could be expected to make it possible to use sketching to easily generate ideas towards the resolution of problems. Seeking to shed light on the role and effects of sketching skills in relation to the generation of design ideas in the process of product design, the research discussed in this paper clarified the elements that make up sketching skills and the relationships among them. Specifically, the authors observed the process of sketching skills acquisition in a sketching class and evaluated sketches drawn by students in the class. By analyzing the evaluation results using the interpretive structural modeling (ISM) method, quantification method III, and the cluster analysis method, the authors elucidated the relationships among the elements making up sketching skills, enabling a structural model of sketching skills to be proposed. This made it possible to analyze the purposive use of sketching skills and methods of acquiring these skills, and assisted in the design education.

Key words: Design Education, Sketching, Structural Model of Sketching Skills

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## 1. Introduction

Most product designers use display techniques, of which sketching is a representative example, in generating ideas for design features. This is because designers recognize that sketches stimulate new ideas and creativity, and most continue to use sketching even in this age of advanced computer-aided design (1, 2). Sketching skills are considered to be fundamental skills, and a great deal of time is spent on acquiring them in the process of product design education. However, almost no research has been conducted that scientifically considers the role and effects of sketching skills in the generation of ideas for design features. Elucidation of the role and effects of sketching skills would allow a transformation of sketching training, in which so much time is conventionally spent on acquiring basic skills, into an avenue for the effective acquisition of techniques for generating ideas for design features. This would make it possible not merely for product designers, but also for mechanical designers and product planners, to use sketching to easily generate ideas towards the resolution of problems. The project discussed here aims at clarifying the role and effects of sketching skills in the generation of ideas for design features, and clarifies the elements that make up sketching skills and the relationships among them. In terms of method, the project first confirms the validity of the research, focusing on sketching skills by producing an overview of the use of sketching in product design and summarizing previous research concerning sketching and the generation of ideas for design features. Next, previously untrained participants engage in sketching training, and the process of acquiring sketching skills is observed. Finally, the relationship between the elements making up sketching skills is considered through analysis of participant sketches, and a structural model is created.

## 2. Related Work

The display techniques used in design are techniques that aim to illustratively express how the subject of the design will look, for example through models and prototypes created by isolating and expressing the design characteristics of the subject. Sketching is one such technique, and is used by many designers to generate ideas for design features because sketches can be quickly created whenever paper and drawing implements are available.

A great deal of research has been conducted on the uses of sketching in design. The following are reported as representative functions of sketching (1, 3):

- Stimulating new ideas and creativity
- Communicating intentions beyond what can be formulated in words
- Simultaneously linking all elements
- Providing an interface between implicit expression and verbal expression
- Identifying features that cannot be overlooked
- Promoting serendipitous discovery of ideas
- Clarifying vocabulary
- Suggesting possibilities for new design proposals

In the field of design science, research taking sketching as a guidepost is being conducted to clarify the structure of creative thought in design (4-6). In the field of cognitive science, research is being conducted on the relationship between creative thought and sketching to shed light on “creation” as a human intellectual activity (7), and sketching is viewed as an action that assists in design reasoning. This research posits the discovery of unanticipated visual attributes, the associative generation of new concepts through the reinterpretation of visual attributes, and the creation of new design demands. As indicated above, despite the fact that a great deal of research has been conducted on the effects of sketching in promoting the generation of ideas for design features, because there has been no focus on the detailed causes of those effects, the role and effects of sketching skills in the generation of ideas for design features have not been clarified (Figure 1). Although sketching skills are considered important in both design practice and education, almost no research has focused on their concrete role, or on how a designer’s level of mastery of these skills affects the generation of ideas for design features.

Because of this, the authors believe that elucidation of the role and effects of sketching skills in the generation of ideas for design features will allow students to efficiently acquire techniques for the generation of concepts during the process of design education. The authors also believe that offering this form of education to mechanical designers and planners as well as industrial designers will enable the generation of ideas for design features during the various processes of product development, stimulating the development of innovative products.

### **3. Methods**

#### **Observation of the training in sketching skills**

Training aimed at promoting the acquisition of sketching skills was offered to a group of university students with no previous design education, and the process of skill acquisition was observed.

Participants were 13 science students with some mechanical design knowledge. The participants were provided with sketching training consisting of a 90 min lecture and a 210 min practical session. The lecture promoted understanding of perspective drawing, drawing basic shapes, and basic techniques for representing solids through drawings made by the participants.

Following training, the participants formulated design proposals using sketching exercises, working with the theme of a self-propelled robot vacuum cleaner. Using the internal parts shown in Figure 2, subjects were required to decide on a sketch-based design concept in 180 min, and then to produce multiple idea sketches based on that concept in a 90 min period.

## Observation of the acquisition process of sketching skills

The skill acquisition process was observed in sketching education. Observations indicated that sketching skill can be classified according to difficulty, as follows:

- (1) Skills that are quickly acquired  
Many participants mastered basic skills, such as expression of figures and fundamental solids by shading, in a short time. Such skills are considered to be relatively easily acquired.
- (2) Skills whose acquisition requires varying amounts of time  
For some complex skills such as drawing curved surfaces, freehand drawing, and mastering the parts that constitute design elements, participants had varying levels of accomplishment within the allotted time. Such skills are considered to be relatively difficult to acquire.

## Observation of the practical use of a sketch

In the exercise, each participant successively drew 3 to 14 proposals (91 in total) using the perspective method. The following was verified for each sketch:

- (1) Development of structural design  
Following sketches for the original proposal, subsequent development of unrelated design elements, such as differing structures or composition of parts, or different internal structure (Figure 3).
- (2) Development of exterior design  
Following sketches for the original proposal, subsequent development of designs that maintained similar structure but with modified external forms (Figure 4).
- (3) Development of design elements  
Development of design proposals in which control and functional components are drawn in a way that describes function or specification as an industrial commodity

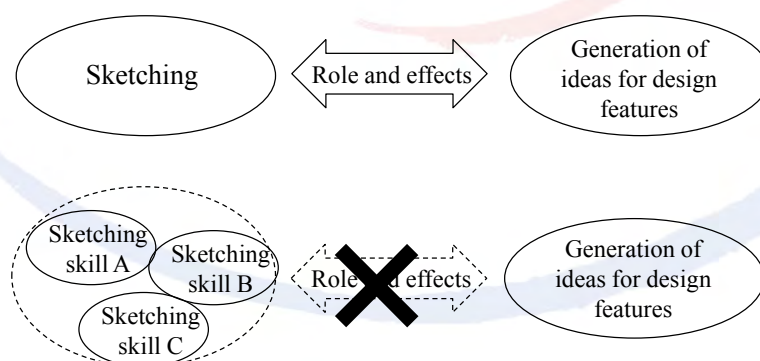


Fig. 1. The role and effects of sketching skills in the generation of ideas for design features

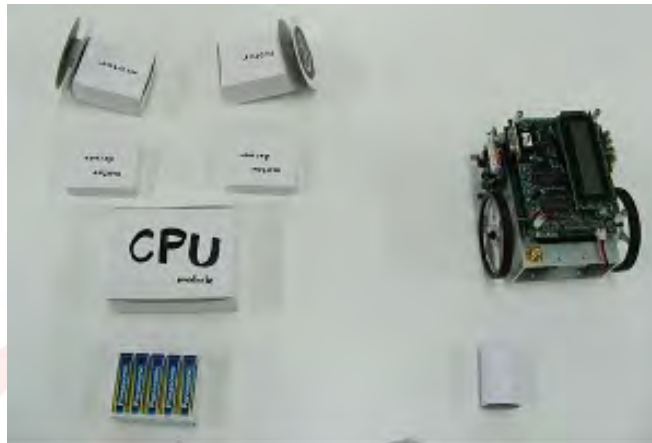


Fig. 2. Internal parts of a self-propelled robot vacuum cleaner 動

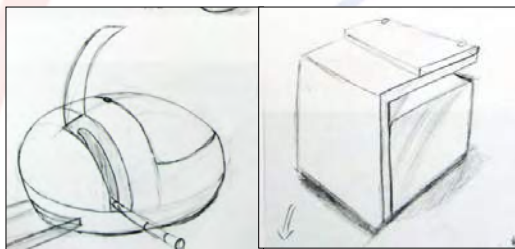


Fig. 3. Development of structural design 動

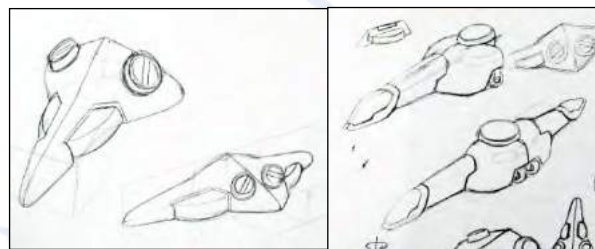


Fig. 4. Development of exterior design 動

### Classification of sketching skills

Sketching during design enables designers to clarify ideas in their minds by visualizing images, thus effectively linking ideas to subsequent steps. To clarify ideas, it is essential that designers possess techniques that accurately express the characteristics of a desired form, allowing it to be captured on paper (8). To effectively link ideas to subsequent steps, the designer must furthermore be able to develop multiple design proposal candidates, and to select the best from among them. From the above, for this project sketching skills were broadly categorized as expression skills, techniques for the accurate expression of forms, development skills, or techniques for the development of a large number of design proposal candidates, and an attempt was made to elucidate the structure of each skill set.

### Evaluation of expression skills

The items used in the evaluation of expression skills were abstracted from the perspective drawing method, and from methods of setting angles and expressing the three-dimensionality of the object of design, as presented in a design handbook introducing basic sketching techniques. Also evaluated were techniques enabling the intent and features of the design to be emphasized, as presented in a design handbook

introducing advanced sketch expression techniques (9, 10). Ten items were abstracted, as follows:

(E1) Expression of perspective

Does the participant understand perspective drawing and use it correctly to express designs?

(E2) Expression of shadows and materials

Does the participant use shadows to give a sense of three-dimensionality and adequately express materials?

(E3) Expression of three-dimensional form

Does the participant understand the three-dimensional form of the design, and express it correctly?

(E4) Application of perspective

Has the participant used perspective drawing based on an adequate perspective and setting of vanishing points?

(E5) Expression of ridge line

Has the participant adequately expressed “corner R,” as formed by ridge line and vertices?

(E6) Expression of curvature

Has the participant adequately expressed curved forms that describe the curvature of the object?

(E7) Expression of profiles

Has the participant adequately expressed profile lines that describe the external form of the object?

(E8) Expression of constituent elements

Has the participant adequately expressed the position, size, shape, etc. of constituent elements such as operating sections and movable sections that represent design accents?

(E9) Freehand expression

Has the participant drawn smooth freehand lines?

(E10) Expression of emphasis

Has the participant emphasized and expressed the characteristics of the intended form and other features using the boldness, thickness, etc. of lines?

### **Evaluation of development skills**

Based on the results of the sketching observations, in addition to the total number of developmental sketches, development skill evaluation items were isolated by categorizing skills as “Development of structural design” or “Development of external design.” In addition to items indicating the quantity of information expressed in sketches for each proposal or the quality of the development in each case as indicated by its presence or absence, the following nine evaluation items were formulated:

(D1) Number of uses of perspective

A count of the total number of sketches employing perspective.

(D2) Number of developments of shape

Number of sketches developing different external shapes while maintaining the same structure.

(D3) Number of developments of structure

Number of sketches developing different overall structures through the use of different sectional structures or compositions of parts.

(D4) Number of developments of shape for same structure

The average number of developments of the shape of the object for the same structure in each continuously drawn series of sketches.

(D5) Number of developments of form

Within the development of the shape of the object, the number of variations in basic form that represent design motifs, for example the use of cylindrical shapes and rectangular parallelepipeds.

(D6) Development of constituent elements

Separate from the development of the external shape, expression or non-expression of the constituent elements of the subject of the design, such as operating sections, drive sections, and functional components, sketched to demonstrate its function and structure as an industrial product.

(D7) Development of explanation of shape

In addition to sketches from a single perspective, presence or absence of supplementary sketches demonstrating the shape of the object, made to enable correct expression of its shape as a three-dimensional object.

(D8) Development of structural elements

Presence or absence of sketches intended to demonstrate the structure of the object and the functioning of moving parts, etc.

(D9) Development of detail elements

Presence or absence of sketches of detail elements separate from the basic shape, such as sketches including expression of elements providing design accents.

Evaluation was performed by two professional designers and one design teacher using the 10 “expression skill” criteria and 9 “deployment skill” criteria listed above.

## 4. Results and Discussion

### Correlation between evaluation items for expression skills

Table 1 shows correlation coefficients for the “expression skill” evaluation items. Except for the 0.698 correlation coefficient between E6 and E8, coefficients of correlation of 0.7 or higher were obtained for the correlations between (E5) “Expression of contours,” (E6) “Expression of curvature,” (E7) “Expression of profiles,” (E8) “Expression of constituent elements,” (E9) “Freehand expression” and (E10) “Expression of emphasis,” which are “Skills whose acquisition requires varying amounts of time” in Table 1. On the other hand, 0.8 or higher correlations were obtained between (E1) “Expression of perspective” and (E3) “Expression of three-dimensional forms,” which are “Skills that are quickly acquired.” This result indicates that categorization of “expression skill” may be possible using the time required for acquisition.

### Correlation between evaluation items for deployment skills

Correlation coefficients of the evaluated “deployment skill” items shown in Table 2 indicate that (D2) “Number of developments of shape” has a 0.7 or higher correlation with (D1) “Number of uses of perspective,” (D5) “Number of developments of form,” and (D7) “Development of explanation of shape.” On the other hand, between (D3) “Number of developments of structure” and other “deployment skills,” high correlation coefficients were not seen, except for (D5) “Number of developments of form.” From this, while “Development of exterior design” tends to have a high correlation with the total number of deployed sketches and “Deployment of design elements,” correlation with “Development of structural design” and other “deployment skills” tends to be low.

### Correlation between evaluation items for expression skills and evaluation items for development skills

Correlation coefficients of the evaluated “expression skill” items shown in Table 3 indicate that (D9) “Development of detail elements” has a 0.7 or higher correlation coefficient correlation with all “expression skills” except (E2) “Expression of shadows and materials.” This result indicates that detail used to accent designs or detail elements accompanies improvement in “expression skill.”

Correlation coefficients of 0.7 or higher were seen between (E7) “Expression of profiles,” which is a “Skill whose acquisition requires varying amounts of time,” and (D2) “Number of developments of shape” which is a “design deployment of form.” Furthermore, 0.7 or higher correlation coefficients were also seen between (E10) “Expression of emphasis” and (D2) “Number of developments of shape.” It is thought that “Skills whose acquisition requires varying amounts of time” tend to have correlations with both “design deployment of form,” and “design deployment of an element.”

Table 1. Correlation coefficients between expression skill items

	(E1) Expression of emphases	(E2) Expression of shadows & materials	(E3) Expression of three- dimensional	(E4) Expression using perspective	(E5) Expression of ridge lines	(E6) Expression of curvature	(E7) Expression of profiles	(E8) Expression of constituent elements	(E9) Freehand expression	(E10) Expression of emphases
(E1) Expression of perspective	1.000									
(E2) Expression of shadows and materials	0.530	1.000								
(E3) Expression of three-dimensional form	0.815	0.496	1.000							
(E4) Expression using perspective	0.626	0.447	0.719	1.000						
(E5) Expression of ridge lines	0.573	0.502	0.758	0.803	1.000					
(E6) Expression of curvature	0.298	0.477	0.582	0.650	0.793	1.000				
(E7) Expression of profiles	0.537	0.130	0.718	0.715	0.800	0.705	1.000			
(E8) Expression of constituent elements	0.616	0.326	0.775	0.919	0.865	0.698	0.866	1.000		
(E9) Freehand expression	0.589	0.297	0.774	0.820	0.902	0.754	0.894	0.872	1.000	
(E10) Expression of emphases	0.375	0.193	0.604	0.652	0.822	0.790	0.722	0.700	0.892	1.000

Table 2. Correlation coefficients between development skill items

	(D1) Number of uses of perspective	(D2) Number of developments of shape	(D3) Number of developments of structure	(D4) Number of shape for 1structure	(D5) Number of developments of form	(D6) Development of constituent elements	(D7) Development of explanation of shape	(D8) Development of structural elements	(D9) Development of detail elements
(D1) Number of uses of perspective	1.000								
(D2) Number of developments of shape	0.815	1.000							
(D3) Number of developments of structure	0.373	0.421	1.000						
(D4) Number of developments of shape for 1structure	0.627	0.496	-0.091	1.000					
(D5) Number of developments of form	0.573	0.773	0.714	0.169	1.000				
(D6) Development of constituent elements	0.334	0.290	-0.233	0.377	0.314	1.000			
(D7) Development of explanation of shape	0.689	0.778	0.167	0.219	0.614	0.574	1.000		
(D8) Development of structural elements	0.055	-0.277	0.071	0.066	0.000	0.333	-0.133	1.000	
(D9) Development of detail elements	0.310	0.540	0.091	0.333	0.596	0.532	0.532	0.000	1.000

Table 3. Correlation coefficients between development skill items and expression skill items

	(D1) Number of uses of perspective	(D2) Number of developments of shape	(D3) Number of developments of structure	(D4) Number of shape for 1structure	(D5) Number of developments of form	(D6) Development of constituent elements	(D7) Development of explanation of shape	(D8) Development of structural elements	(D9) Development of detail elements
(E1) Expression of perspective	0.446	0.523	0.543	0.282	0.587	0.175	0.453	0.058	0.704
(E2) Expression of shadows and materials	-0.102	0.057	-0.011	0.209	0.033	-0.029	0.098	-0.239	0.446
(E3) Expression of three-dimensional form	0.579	0.579	0.194	0.362	0.462	0.376	0.656	-0.070	0.795
(E4) Expression using perspective	0.458	0.655	0.088	0.598	0.456	0.541	0.541	-0.074	0.783
(E5) Expression of ridge lines	0.393	0.525	0.009	0.454	0.509	0.606	0.606	0.000	0.865
(E6) Expression of curvature	0.252	0.451	-0.083	0.342	0.478	0.534	0.486	-0.180	0.759
(E7) Expression of profiles	0.617	0.734	0.145	0.497	0.653	0.476	0.617	0.000	0.824
(E8) Expression of constituent elements	0.573	0.660	0.030	0.664	0.492	0.656	0.604	0.000	0.820
(E9) Freehand expression	0.541	0.750	0.062	0.432	0.654	0.627	0.777	-0.063	0.910
(E10) Expression of emphases	0.474	0.668	0.091	0.235	0.697	0.722	0.838	-0.073	0.745

## Creation of a structural model of expression skills

A structural model was created using interpretive structural modeling (ISM) to verify the causal relationship between each of the evaluation items for expression skills.

Each subject's evaluation result for the "expression skills" was used to create an adjacency matrix. When 80% or more of subjects with a given expression skill A specifically had the expression skill B, it was judged that expression skill B was a necessary condition for expression skill A. Figure 5 shows a layered structural model of the expression skills from the reachability matrix. That figure shows skills with strong connection relations, indicated by enclosing frames. The structure was divided into four levels. (E10) "Expression of emphasis," (E9) "Freehand expression," and (E5) "Expression of contours," which were classified as "Skills whose acquisition requires varying amounts of time," were shown in the third and fourth levels, levels that imply acquisition of other skills. (E1) "Expression of perspective," (E3) "Expression of three-dimensional form," (E4) "Expression using perspective drawing method," and (E7) "Expression of profiles" are shown in the first level.

## Categorization of expression skills

Hayashi's quantification method III was applied to the evaluation data to organize the ten evaluation items relating to expression skills. The eigenvalues and contribution ratios shown in Table 4 were obtained. Figure 6 shows category scores for the first, second, and third components. Using category score features, the primary axis can be considered to be an evaluative axis indicating the degree of difficulty of skill acquisition. The secondary axis can be considered to be an evaluative axis indicating expression of three-dimensionality and shape, and the third axis can be interpreted as showing "expression of curved surface form."

Because the cumulative contribution ratio up to the third component was 0.8, cluster analysis (Ward's method) was applied to the category scores up to the third component to produce four categories (Figure 7).

The four categories of expression skills were named as follows, based on the characteristics of the evaluation items included in the categories:

- Skills for expression of perspective  
This category is made up of (E1) "Expression of perspective," (E2) "Expression of shadows and materials," (E4) "Expression using perspective drawing method," and (E8) "Expression of constituent elements." These are skills based on an understanding of the perspective drawing method, enabling expression including expression of constituent elements.
- Skills for expression of three-dimensional form  
This category is made up of (E3) "Expression of three-dimensional form" and (E7) "Expression of profiles." These are skills for the accurate expression of three-dimensional form, based on an understanding of that form.
- Skills for the expression of curved form

This category is made up of (E6) “Expression of curvature.” These are skills in the expression of soft curves, enabling accurate expression of curved designs.

- Skills for the expression of the object image

This category is made up of (E5) “Expression of contours,” (E9) “Freehand expression,” and (E10) “Expression of emphasis.” These are skills based on skill in freehand drawing, enabling accurate expression of the design image through elements including expression through the relative strength and vigor of lines and the expression of outlines.

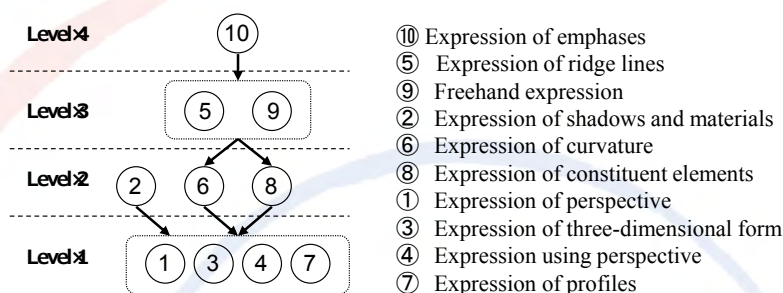


Fig. 5. The layered structural model of expression skills

Table 4. Eigenvalues and contribution ratios of expression skills

Axis No.	Eigenvalue	Contribution ratio	Cumulative contribution ratio
1	0.218	39.2%	39.2%
2	0.139	25.0%	64.2%
3	0.087	15.7%	80.0%

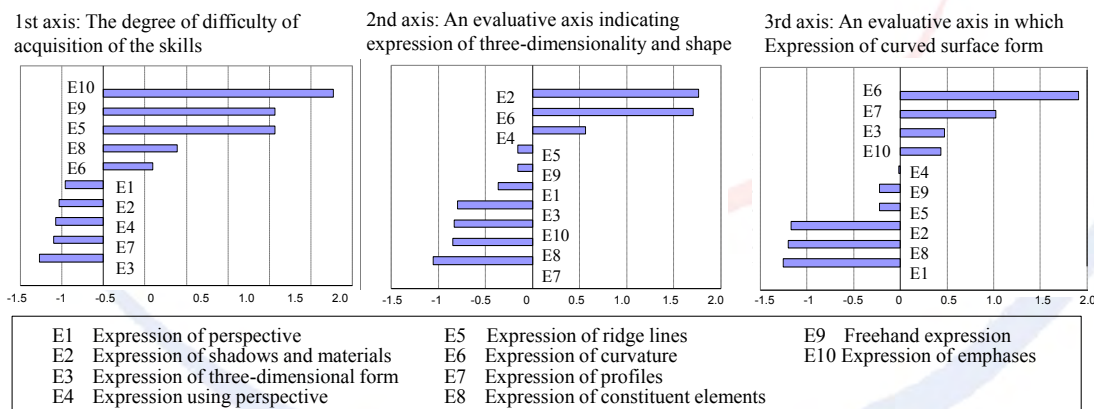


Fig. 6. Category scores of expression skills

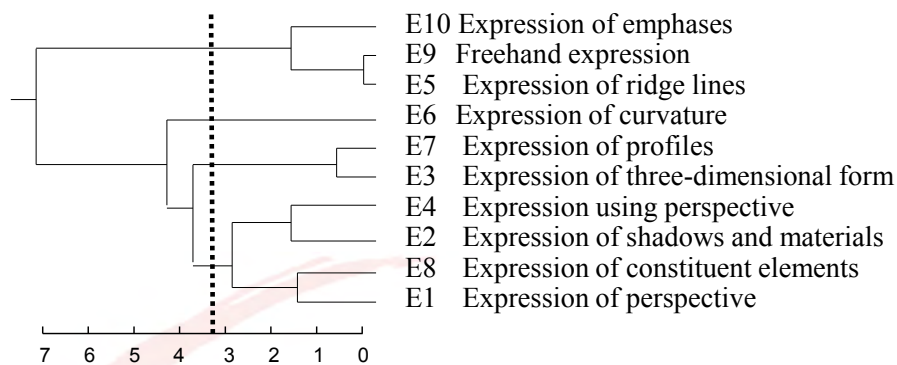


Fig. 7. The cluster tree diagram of expression skills

### Creation of a structural model of development skills

A structural model was also created using ISM to verify the causal relationship between each of the nine evaluation items for development skills.

Using the results of the evaluation of development skills, a structure graph was formulated using ISM (Figure 8). (D2) “Number of developments of shape,” (D4) “Number of developments of shape for same structure,” and (D9) “Development of detail elements,” items classified as “Development of external design,” were shown in the second and third levels, levels that imply acquisition of other skills. (D3) “Number of developments of structure” and (D5) “Number of developments of form,” items classified as “Development of structural design,” and (D1) “Number of uses of perspective” and (D6) “Development of constituent elements,” items classified as “Deployment of design elements,” were shown in the first level. These results indicate that “Development of external design” is learned after acquisition of “Development of structural design” and “Deployment of design elements.”

### Categorization of development skills

Hayashi’s quantification method III was applied to the evaluation data to organize the nine evaluation items related to development skills. The eigenvalues and contribution ratios shown in Table 5 were obtained. Figure 9 shows category scores for the first, second, and third components. Using the category score, the primary axis can be considered to be an evaluative axis showing “Development of structural design” and “Development of external design.” The secondary axis can be considered to be an evaluative axis for the type of information displayed as elements making up designs, and the third axis can be considered to be an axis in which “deployment of shape” is shown.

Because the cumulative contribution ratio up to the third component was 0.71, cluster analysis (Ward’s method) was applied to the category scores up to the third component to produce four categories (Figure 10).

The four categories of development skills were named as follows, based on characteristics of the evaluation items included in the categories:

- Skills for development of structure  
This category is made up of (D1) “Number of uses of perspective,” (D3) “Number of developments of structure,” (D5) “Number of developments of form,” and (D7) “Development of explanation of shape.” These are skills for developing variations on basic structure and form, making up the basic shape of the design.
- Skills for development of shape  
This category is made up of (D2) “Number of developments of shape” and (D4) “Number of developments of shape for same structure.” These are skills for developing differing external shapes for the same basic structures and forms.
- Skills for development of constituent elements  
This category is made up of (D6) “Development of constituent elements.” This is a skill for the development of constituent elements that serve as distinctive features of the object, separate from the external shape that constitutes its basic form.
- Skills for development of detailed shape  
This category is made up of (D8) “Development of structural elements” and (D9) “Development of detail elements.” These are skills for developing detail elements such as details and explanations of structure that serve as distinctive features of the object.

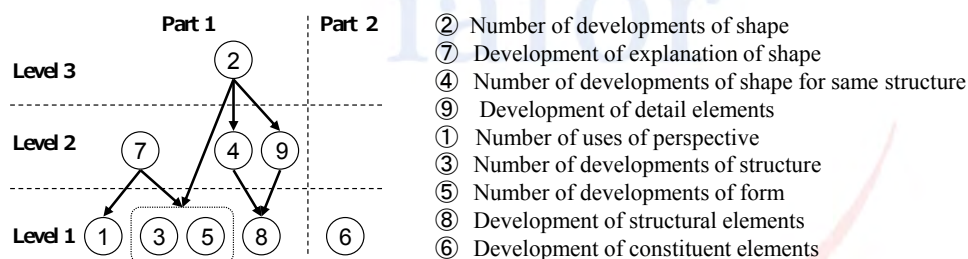


Fig. 8. The layered structural model of development skills

Table 5. Eigenvalues and contribution ratios of development skills

Axis No.	Eigenvalue	Contribution ratio	Cumulative contribution ratio
1	0.305	31.6%	31.6%
2	0.244	25.3%	56.9%
3	0.139	14.4%	71.3%

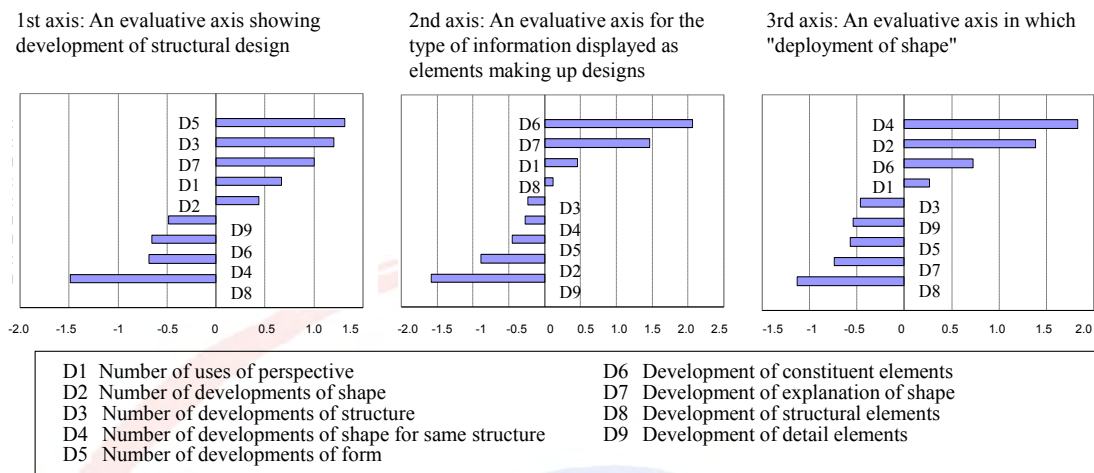


Fig. 9. Category scores of development skills

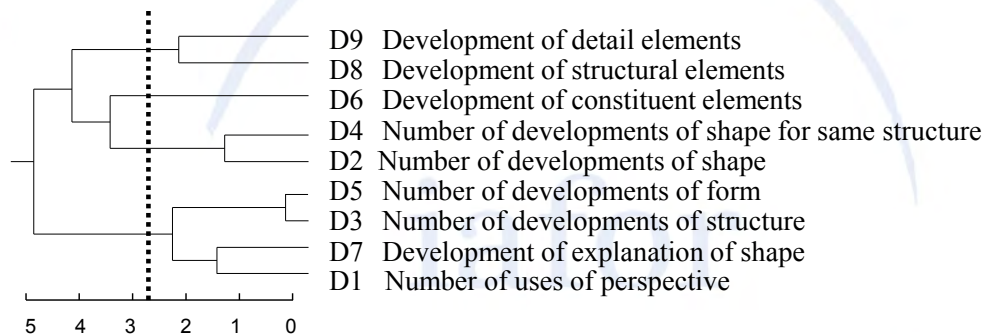


Fig. 10. The cluster tree diagram of development skills

## 5. Structure of sketching skills

### Structure of expression skills

Figure 11 shows the category score graph for expression skills obtained by Hayashi's quantification method III, incorporating arrows expressing the causal relationships demonstrated by ISM and the four categories of expression skill.

Acquisition of "Skills for expression of object image" requires acquisition of the "Skills for expression of curved form," "Skills for expression of perspective," and "Skills for expression of three-dimensional form." Moreover, "Skills for expression of perspective" and "Skills for expression of three-dimensional form" are skills mutually learned by being the requisite, and it is shown that acquisition of "Skills for expression of curved form" will be the requisite.

### Structure of development skills

Figure 12 shows the category score graph for development skills obtained by Hayashi's

quantification method III, incorporating arrows expressing the causal relationships demonstrated by ISM and the four categories of development skills.

It is thought that acquisition of “Skills for development of shape” is premised on acquisition of “Skills for development of structure” and “Skills for development of detailed shape,” in many cases. In addition, it is thought that “Skills for development of constituent elements” is an independent skill that does not influence acquisition of other deployment skills, and furthermore does not require acquisition of other skills.

### **Structural model of sketching skills**

Figure 13 shows a proposed structural model of sketching skills, based on the results of a study of the structures of expression skills and development skills. “Sketching skills” are here divided into “expression skills,” which enable accurate expression of the shape of a design proposal, and “development skills,” which enable the development of numerous candidates for design proposals.

Expression skills are made up of “Skills for the expression of three-dimensional form,” “Skills for expression of perspective,” “Skills for expression of curved form,” and “Skills for expression of object image.” Development skills are made up of “Skills for development of structure,” “Skills for development of external design,” “Skills for development of constituent elements,” and “Skills for development of detailed shape.” Each skill is typified from its relation with skills in two groups, “design deployment of form” and “design deployment of structure.” A skill in connection with “design deployment of an element” belongs to neither. Skills shown with arrows in this structural model indicate necessary conditions for the skill (the origin of the arrow).

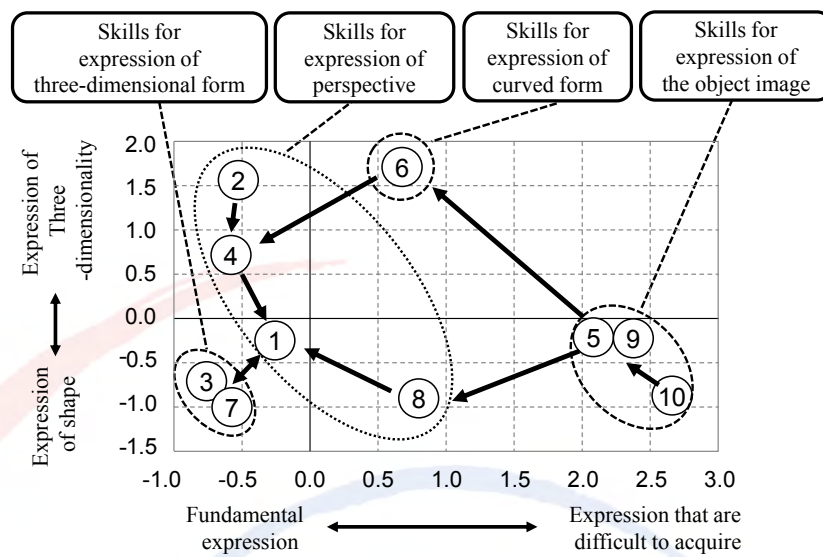


Fig. 11. The category score graph for expression skills

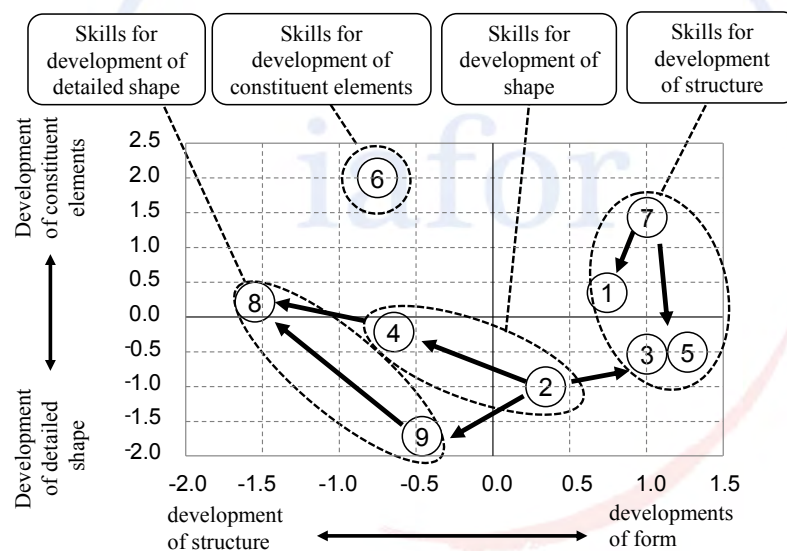


Fig. 12. The category score graph for development skills

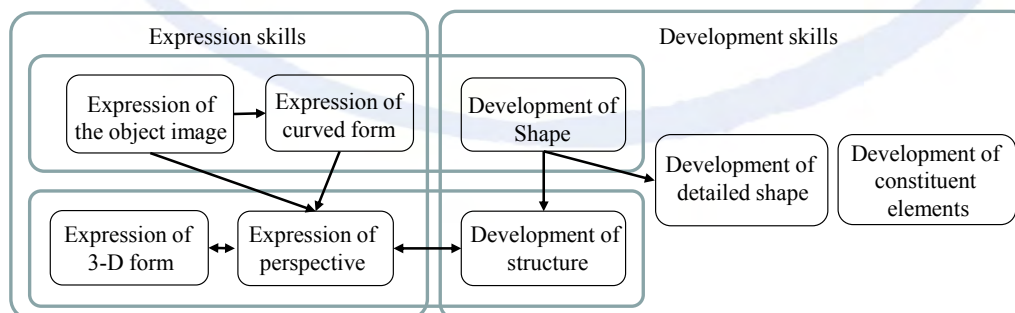


Fig. 13. A structural model of sketching skills

## 6. Summary

The project discussed in this paper aimed at clarifying the role and effects of sketching in the generation of ideas for design features, and was conducted to elucidate the structure of the skills involved.

To this end, the authors observed the process of sketching skill acquisition in a sketching class and evaluated sketches drawn by students in the class. By analyzing the evaluation results using ISM, Hayashi's quantification method III, and the cluster analysis method, the authors elucidated the relationships among the elements making up sketching skills, enabling a structural model of sketching skills to be proposed.

Use of this model would allow transformation of sketching training, in which so much time is conventionally spent on acquiring basic skills, into an avenue for effective acquisition of techniques for generating ideas for design features. This would allow not only product designers, but also mechanical designers, product planners, and others to use sketching to easily generate ideas for problem resolution.

However, this model was formulated based on the results of an experiment in which sketching training was provided to subjects with no design experience. Further verification is therefore necessary, for example through comparative analysis of subjects who already possess sketching skills.

In the future, in addition to testing the validity of the proposed structural model of sketching skills, the authors intend to further elucidate the function and role of sketching in the generation of ideas for design features on the basis of this model.

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The logo for the International Association of Facilitators (iafor) is centered on the page. It features the word "iafor" in a light blue, lowercase, sans-serif font. The text is enclosed within a circular frame composed of two concentric, hand-drawn style arcs. The outer arc is a light red color, and the inner arc is a light blue color, matching the text. The arcs are slightly irregular, giving the logo a hand-drawn or artistic feel.

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*Analysis of Students' Activities in the Language Exchange Program*

Hiroshi Hasegawa

0257

Curtin University, Australia

The Asian Conference on Education 2012

Official Conference Proceedings 2012

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## Introduction

Due to the common use of information and communication technology (ICT) in the field of education in recent years, a great deal of attention has been paid to learner autonomy or independent learning outside the classroom by many scholars, including Jackson and Shenton (2010) and Valentine (2002). This, however, creates a number of conflicts for students learning second/foreign languages in Australia, since they have a natural tendency to employ English as the medium when conducting any communication practice in the target language outside the classroom. If there is no specific guidance available, the increase of the students' reliance on English usage can be observed. It must be agreed that the independent learning environment is restricted severely by limited class contact hours, and it is unrealistic to expect students to maintain regular practice of the target language outside as well as in the classroom. Therefore, as Hasegawa (2012) claimed, following the studies of Barker (2004), Pickard (1996), and Springer and Collins (2008), the ideal situation for second/foreign language education is to provide sufficient opportunities for students to acquire communication skills and knowledge in the target language in class and then apply these and exercise the language use outside the classroom. Implementation of this kind of practice will not be successful unless mechanisms are established to encourage students to carry it out as a regular task.

It has been documented that overseas second/foreign language students have limited opportunities to use the target language outside the classroom, even while living and studying in the target country (Cotterall & Reinders 2001). This can be interpreted to suggest that they lack the opportunities to interact with local people in the countries where they are studying. Consequently there is potential to create the right set of circumstances for two groups, the local students studying the target language and the overseas students and/or local residences who are native speakers of the target language. The Language Exchange Program (LEP) at Curtin University provides an opportunity for this to occur. This has been running since 2003, as a special program for Curtin University students enrolled in the second year Japanese course. It requires them to team up with native Japanese students/residents in the Perth area and to meet once a week or more to communicate, mainly in Japanese, for a minimum of 60 minutes. LEP participation has a weighting of 5% of the entire unit assessment, so students who meet with their designated Japanese native language partners for the LEP purpose are eligible to obtain the full 5% mark irrespective of what they do in their meetings. Repeated reminders are given throughout the semester to all students participating in the LEP that Japanese language practice and cultural information exchange are the ideal types of activities, and the official stance of the LEP as a component of the unit assessment is maintained solidly.

Students in the LEP may take advantage of participating in the program through some arbitrary tasks such as having a general conversation and/or checking the assessment tasks linked directly to their Japanese lessons. However, due to its flexible nature and the need to rely on the participating students' self-responsibility, the LEP can easily turn into an effortless and superficial social chat session unless it is accompanied by a carefully designed program guideline. (Refer to Hasegawa (2006) for further information about the LEP.) Thus, it is vital for the program coordinator to understand the nature of the students' program activities and to provide suggestions and coherent language learning philosophy about how they can ideally organise their weekly meeting tasks with their native-speaking Japanese partners in order to enhance the value of the LEP. The purpose of this research was to contribute to this understanding, describing a concrete analysis of the students' activities based on previous LEPs.

## Value of the Contact with Native Speaker in LEP

Despite the fact that there have been widespread discussions about the use of the controversial lexical item 'native/non-native', this paper employs these terms because 'none of the alternative phrases have come into common use' (Medgyes n. d. p. 429). Traditionally there has been a prevalent theory that a native speaker of a target language has the ideal grammatical judgement (Chomsky 1965) and is the best person to teach the target language due to an intuitive and inherent sense of culture, pragmatics and linguistics, aka Sprachgefühl (Merino 1997, p. 71). In the early 1990s', however, many began questioning this theory and it became this subject of research (Mahboob, 2005; Moussu & Llurda 2008). Phillipson (1992), for example, has highlighted that this argument should take into account the Native Speaker Fallacy, criticising that this is inappropriate due to 'nativization' referred to by Kachru (1986) (cited in Phillipson 1992), which means that acculturation in the target language can eventually be seen outside the classroom. Nevertheless, both the advantages and negative effects of certain aspects of language use have been discussed with increasing momentum by numerous scholars including Andreou and Galantomos (2009), Gill and Rebrova (2001), Mahboob (2005), Medgyes (1992), Medgyes (n. d.), Merino (1997), Moussu and Llurda (2008), Phillipson (1992), and Sung (2010). The current linguistics and sociolinguistic perspectives do not accept the 'native speaker ideal' theory for second/foreign language learners to achieve (Andreou & Galantomos 2009) but consider that the effective target language employment should be the ultimate goal for learners (Medgyes n. d.).

Despite differences in target participants' demographic backgrounds, the majority of learners still support the native speaker ideal theory or Chomsky's Native Speaker model (Butler 2007a; Butler 2007b), at least in terms of the target language proficiency and cultural connotations (Coma & I 2010; Sung 2010). In other words, the Native Speaker model does not seem to contribute in any way to decreasing an individual's motivation to learn a target language as part of the learning process. Also, it is important to bear in mind that there has not been any conclusive empirical evidence to suggest that native-speaker teachers have any critical negative impacts on second/foreign language learning outcomes (for example, Butler's (2007b) research on Korean students' listening/comprehension skills), despite a few inconsistent results that have depended on research conditions and target participants (Butler 2007b). In fact, it is clearly not enough just to rely on native speakers of the target language without also taking into account their pedagogical and methodological skills. In this regard, it could be valuable for learners to have contact with both native and non-native speakers (Medgyes 1992; Merino, 1997).

Consequently, there have been suggestions to give students access to both native and non-native speaking teachers in class. However, currently there are any situations in which this balance does not occur, with non-native teachers teaching non-native students, or non-native students conducting their exercises together in the target language at great length in the classroom, and little or no contact with native speaker sat all. Consequently, there is a need to create opportunities for students to interact with both native and non-native speakers outside the classroom (Alptekin 2002). Where this has occurred (for example, Andreou and Galantomos (2009)), especially students have perceived the experience to have been beneficial in terms of both second/foreign language learning and intercultural communications and understanding. (Without opportunity for contact with native speakers, it is not feasible for students to encounter even the 'nativization' noted above.) However, an ideal interactive setting outside the classroom can also only be established if the teacher and/or students make a strategic effort to initiate it. In this sense, the LEP, in enabling students to maintain the regular contact with the native speakers outside the classroom, can be a valuable learning experience.

## **Research Objects, Methods and Target Participants**

This research aimed to investigate the types of activities that the Curtin University students do in the LEP and how these activities make up their weekly meetings. The research was designed to address the following research objectives (ROs):

- RO1: To find out the frequencies of meetings.
- RO2: To discover the lengths of meetings.
- RO3: To figure out the proportion of Japanese language usage at the meeting.
- RO4: To identify the types of activities and the extent to which each is used.

The research drew on the LEP report sheet distributed weekly to each student during one designated class per week in Semesters 1 and 2 in 2011. The LEP report sheet contained the following sections: participant's name and ID, meeting date, length of each meeting, proportion of Japanese language used in the meeting, content of the meeting including each activity, weighting of each activity in the meeting, and the partner's signature as confirmation of the meeting. A report sheet was filled in by each participating student in a self-report style and returned to the researcher in exchange for a new report sheet for the following week. The reminder was also given frequently that the types of activities carried out at the meeting would not affect the assessment, so the students were expected to complete the LEP report honestly.

Naturally, the target participants were the students involved in the LEP offered in the 2<sup>nd</sup> year Japanese language course (that is, the units Japanese 211 and Japanese 212) at Curtin University in 2011. The total number of target students for this research was 35, including 19 students in Semester 1 and 16 students in Semester 2. Some students undertook the units Japanese 211 and Japanese 212 consecutively in 2011, while others selected one or the other for a variety of reasons, such as a requirement to take a single unit for an elective, 2<sup>nd</sup> semester university enrolment, or the suitability of their Japanese levels at the time of their enrolment. All students who were enrolled officially in the unit until the end of the semester, irrespective of their class attendance rates, were considered for this research. The following sections focus on the research outcomes and the discussion relating to each RO.

### **RO1: To Find out the Frequencies of Meetings**

The LEP is organised specifically for students in the second year Japanese language course at Curtin University. In other words, the course at this level includes students who have completed the first year Japanese language course at Curtin University or its equivalent and those who have already studied Japanese language at other institutions. Since the LEP does not commence in the first week of the semester, due to the need for students to become familiarised with the university system and for the lecturer to set up the administrative arrangements, it begins in Week 3. This means that students are required to meet their Japanese language partners at least ten times per semester. (One semester consists of 12 teaching weeks.) A summary of the recorded meeting numbers can be seen in Table 1 below.

**Table 1**

	1	2	3	4	5	6	7	8	9	10	Total (/10)	Ratio (/100.00 %)
S1	-	1	1	-	1	1	1	-	-	-	5	50.00%
S2	1	1	1	1	1	1	1	1	1	1	10	100.00%
S3	1	1	1	1	1	1	1	1	1	1	10	100.00%
S4	1	1	1	1	1	-	-	1	1	1	8	80.00%
S5	1	1	1	1	-	-	1	1	1	1	8	80.00%
S6	-	-	1	1	-	1	-	1	-	-	4	40.00%
S7	1	1	1	1	-	1	1	1	1	-	8	80.00%
S8	1	1	1	1	1	1	1	1	-	1	9	90.00%
S9	1	1	1	1	1	1	1	1	1	1	10	100.00%
S10	1	1	1	1	1	1	1	1	1	1	10	100.00%
S11	1	1	1	1	1	1	1	1	-	-	8	80.00%
S12	1	1	1	1	-	1	-	1	-	-	6	60.00%
S13	1	1	1	1	1	1	1	1	1	1	10	100.00%
S14	1	1	1	1	1	1	1	1	1	1	10	100.00%
S15	1	1	1	1	1	1	1	-	-	-	7	70.00%
S16	1	1	1	1	1	1	1	1	1	1	10	100.00%
S17	-	-	-	-	-	-	-	-	-	-	0	0.00%
S18	-	-	-	-	-	-	-	-	-	-	0	0.00%
S19	1	-	-	-	-	-	-	-	-	-	1	10.00%
S20	-	-	-	-	-	-	-	-	-	-	0	0.00%
S21	1	1	1	1	1	1	1	1	1	1	10	100.00%
S22	1	1	1	1	1	1	1	1	1	1	10	100.00%
S23	1	1	1	1	1	1	1	1	1	1	10	100.00%
S24	1	1	1	1	-	1	1	-	-	1	7	70.00%
S25	1	1	1	1	1	1	1	1	1	1	10	100.00%
S26	1	-	-	1	-	-	-	-	-	-	2	20.00%
S27	1	1	1	1	1	1	-	1	-	1	8	80.00%
S28	1	-	1	1	1	-	1	1	-	1	7	70.00%
S29	1	1	1	1	1	OK	1	-	1	-	7/9	77.80%
S30	1	1	1	1	1	1	1	1	1	1	10	100.00%
S31	1	-	1	1	-	-	-	1	-	1	5	50.00%
S32	1	1	1	1	1	1	1	1	1	1	10	100.00%
S33	1	1	1	1	1	1	1	1	1	1	10	100.00%
S34	1	1	0.83	0.83	0.91	-	-	1	-	-	6	60.00%
S35	1	1	1	1	1	1	1	1	1	1	10	100.00%

15 students out of the total 35 (42.86%) conducted their once-a-week meetings properly. One student (1/35: 2.86%) missed only one meeting, five students (5/35: 14.29%) met their language partners 8 times, three students (3/35: 8.57%) conducted their meetings seven times, two students (2/35: 5.71%) met their partners six times and two (2/35: 5.71%) met five times. One student (1/35: 2.86%) met his/her partner four times, one student (1/35: 2.86%) twice, and one student (1/35: 2.86%) met his/her partner only once. Three students (3/25: 8.57%) failed to meet their allocated partners at all. Student No 29 was required to meet his/her partner only nine times during the semester due to illness, and they actually met seven times.

These statistics can be examined further by setting up the different categories. Considering the fact that LEP requires students to meet their language partners only once a week, a meeting rate of 80% can be regarded as Category A, indicating that the students had achieved the target fully or satisfactorily. At the other extreme, Category E can be used to describe those who failed to conduct their meetings properly. Based on this categorisation, 60% of the students (21/35) can be rated as A, 11.43% as B (4/35), 5.71% as C (2/35), 5.71% as D (2/35), and 17.14% as E (6/35). This summary can be seen in Table 1-1 below.

**Table 1-1**

<b>Category</b>	<b>Student</b>	<b>Quantity of student</b>
<b>A</b> <b>(80.00-100.00%)</b>	S2, S3, S4, S5, S7, S8, S9, S10, S11, S13, S14, S16, S21, S22, S23, S25, S27, S30, S35	<b>21</b> <b>(/35: 60.00%)</b>
<b>B</b> <b>(70.00-79.99%)</b>	S15, S24, S25, S28	<b>4</b> <b>(/35: 11.43%)</b>
<b>C</b> <b>(60.00-69.99%)</b>	S12, S34	<b>2</b> <b>(/35: 5.71%)</b>
<b>D</b> <b>(50.00-59.99%)</b>	S1, S31	<b>2</b> <b>(/35: 5.71%)</b>
<b>E</b> <b>(0.00-49.99%)</b>	S6, S17, S18, S19, S20, S26	<b>6</b> <b>(/35: 17.14%)</b>

Unlike in tests or examinations, all students can potentially attain the 100% meeting rate, or at least achieve the highest category, A, if they are willing to do so. However, 40% of the students, for various reasons, failed to achieve an A rating. This can be considered as the result of one or more of three possible factors: (1) a geographical problem, such as the student and Japanese language partner living a long distance apart, (2) lack of commitment during their spare time, (3) reluctance to meet the Japanese partner due to some kind of incompatibility, and (4) communication problems/difficulties. These problems can be reduced or solved by the LEP coordinator introducing practical strategies to take these factors into consideration when setting up the partnership.

The first factor can be addressed by the program coordinator's careful planning to match the partners' residential locations in order to avoid long commuting times for their meetings. Where no appropriate match can be made, the LEP coordinator should ensure that one of the pair has access to reliable transport. The second influential factor relies heavily on how the students spend their spare time; part-time employment is one of the major factors reducing their spare time and thus affecting meeting times. This can be eased by the LEP coordinator recommending that the students build their meetings into their weekly routines from the start. The third factor can be solved by replacing the Japanese participant. It is important to take a certain amount of time to analyse the problem deeply after considering the partners' individual explanations. Nevertheless, the LEP is a ten-week program, so allocating a different partner is the most practical solution since this kind of problem usually appears after a few sessions have already passed. The fourth factor is caused mainly by miscommunication between interlocutors. Hasegawa (2006) pinpointed this issue and suggested a practical and simple communication method such as a direct telephone conversation to make, cancel or change an appointment. In fact, most of these cases are not caused by unsatisfactory linguistic skills but by superficial daily communication habits. Instant responses and conformation should be encouraged for the purpose of the LEP, so some less direct IT devices, such as e-mail or mobile text messaging which transfer messages in a non-simultaneous manner, should be prohibited.

## RO2: To Discover the Lengths of Meetings

The LEP requires the target students to meet their Japanese partners once a week and spend 60 minutes or more at each meeting. With ten meetings per semester, they are to spend at least 600 minutes together. This investigation of the lengths of their meetings has been synchronised with the frequencies because students sometimes attempt to meet their partners less frequently and spend more time, or vice versa. The information about meeting lengths can be observed in Table 2. It can be seen that only three of the 35 students (3/35: 8.57%) recorded slightly shortened meeting times: S26 showed 50 minutes (1<sup>st</sup> meeting), S32 showed 40 minutes (1<sup>st</sup> meeting), and S34 recorded 50 minutes, 50 minutes, 50 minutes and 55 minutes (at his/her 2<sup>nd</sup> 3<sup>rd</sup> 4<sup>th</sup> and 5<sup>th</sup> meetings respectively).

**Table 2**

	1	2	3	4	5	6	7	8	9	10	Total (/600 min)	Ratio (/100.00 %)
S1	-	60	60	-	60	60	80	-	-	-	320	64.00%
S2	60	60	90	90	90	90	90	90	60	90	810	135.00%
S3	60	60	90	120	90	90	80	120	150	150	1010	168.30%
S4	60	70	60	60	60	-	-	70	120	70	570	95.00%
S5	90	70	65	60	-	-	60	70	60	120	595	99.20%
S6	-	-	60	90	-	90	-	-	-	-	240	40.00%
S7	60	-	75	60	-	60	90	75	105	-	525	87.50%
S8	240	120	180	240	180	120	160	120	-	120	1480	246.70%
S9	60	60	90	90	90	90	90	90	60	90	810	135.00%
S10	90	60	60	70	70	60	90	60	75	90	725	120.80%
S11	90	70	90	110	60	90	100	60	-	-	670	111.70%
S12	75	60	60	70	-	90	-	60	-	-	415	69.20%
S13	270	180	150	70	150	60	120	75	120	90	1285	214.20%
S14	60	60	60	60	60	60	60	75	75	60	630	105.00%
S15	90	90	90	90	60	70	75	-	-	-	565	94.20%
S16	90	90	80	90	60	60	60	60	60	60	710	118.30%
S17	-	-	-	-	-	-	-	-	-	-	0	0.00%
S18	-	-	-	-	-	-	-	-	-	-	0	0.00%
S19	180	-	-	-	-	-	-	-	-	-	180	30.00%
S20	-	-	-	-	-	-	-	-	-	-	0	0.00%
S21	60	120	60	60	60	60	60	60	60	80	680	113.30%
S22	60	60	60	90	90	80	90	70	65	100	765	127.50%
S23	70	60	90	60	60	60	60	60	60	75	655	109.20%
S24	60	300	150	120	-	180	240	-	-	360	1410	235.00%
S25	150	240	180	300	120	120	120	120	180	60	1590	265.00%
S26	50	-	-	60	-	-	-	-	-	-	110	18.30%
S27	60	60	60	60	60	60	-	90	-	70	520	86.70%
S28	60	-	60	60	90	-	60	60	-	60	450	75.00%
S29	60	60	60	60	60	OK	60	-	60	-	420	60.00%
S30	100	160	120	120	100	90	60	90	90	90	1020	170.00%
S31	70	-	70	70	-	-	-	90	-	70	370	61.70%
S32	40	80	60	60	60	60	60	60	60	60	600	100.00%
S33	90	90	90	60	60	95	60	60	60	90	755	125.80%

<b>S34</b>	60	50	50	50	55	-	-	60	-	-	<b>325</b>	<b>54.20%</b>
<b>S35</b>	105	60	60	60	60	60	60	60	60	60	<b>645</b>	<b>107.50%</b>

The statistics in Table 2 can be examined further by defining six categories; A (100.00% or more of total time required to be spent), B (80.00-99.99%), C (70.00-79.99%), D (60.00-69.99%), E (50.00-59.99%), and F (0.00-49.99%). Over half of the students (18/35: 51.43%) spent more than the required time (600 minutes) in total and five (5/35: 14.29%) spent 80-99%. There were one student (1/35: 2.86%), four students (4/35: 11.43%) and two students (2/35: 5.71%) who spent 70.00-79.99%, 60.00-69.99% and 50.00-59.99% of the required time respectively. Another five students (5/35: 14.29%) failed to spend enough time or to spend any time at all. This summary can be seen in Table 2-1.

**Table 2-1**

Category	Student	Quantity of student
<b>A</b> <b>(100.00% or more)</b>	S2, S3, S8, S9, S10, S11, S13, S14, S16, S21, S22, S23, S24, S25, S30, S32, S33, S35	<b>18</b> <b>(/35: 51.43%)</b>
<b>B</b> <b>(80.00-99.99%)</b>	S4, S5, S7, S15, S27	<b>5</b> <b>(/35: 14.29%)</b>
<b>C</b> <b>(70.00-79.99%)</b>	S28	<b>1</b> <b>(/35: 2.86%)</b>
<b>D</b> <b>(60.00-69.99%)</b>	S1, S12, S29, S31	<b>4</b> <b>(/35: 11.43%)</b>
<b>E</b> <b>(50.00-59.99%)</b>	S19, S34	<b>2</b> <b>(/35: 5.71%)</b>
<b>F</b> <b>(0.00-49.99%)</b>	S6, S17, S18, S20, S26	<b>5</b> <b>(/35: 14.29%)</b>

Concentrating on the people who clearly met the required time criteria, the average number of hours spent by the 18 students in Category A (18/35: 51.43%) is 902.78 hours (/16250 hours in total). Moreover, there were four students who spent over 900 minutes, or 150% of the required length; S3 (1010 minutes/ 168.3%), S8 (1480 minutes/246.7%), S13 (1285 minutes/ 214.2%), S24 (1410 minutes/ 235%), and S25 (1590 minutes/ 265%). The 2011 students were asked not to count time spent on watching a DVD or movie at a cinema. However, going out together and/or spending time at someone's house for a social occasion were not officially noted; this was the main reason for the very long session recorded by S24 - 360 minutes recorded for the 10<sup>th</sup> meeting.

### **RO3: To Figure out the Proportion of Japanese Language Usage at the Meeting**

Meeting their language partners as required regularly does not necessarily mean that students are taking advantage of the opportunities to use Japanese language and attempting to improve their language proficiency. Although acquiring the broader knowledge of the target language is one of the main purposes of the LEP, a basic practical component is for the students to use Japanese outside the classroom. (In theory the knowledge of the target language can be acquired through the usage of the target language, which is ideal for the language learning.) The overall average of their Japanese usage during meetings is 56.48% and the average, disregarding the three students (S17, S18 and S20) who failed to meet their partners at all during the semester, is 61.77%. A rating of more than 50.00% is deemed to be satisfactory when considering the proficiency level of the target students who are enrolled in the second year university units as well as their

Japanese language educational backgrounds, so it is appropriate to interpret this statistical result as being sound. The summary can be viewed in Table 3.

**Table 3**

	1	2	3	4	5	6	7	8	9	10	Japanese Usage Average (/100%)
<b>S1</b>	-	60	60	-	70	40	50	-	-	-	<b>56.00%</b>
<b>S2</b>	90	90	60	70	80	40	60	60	50	95	<b>69.50%</b>
<b>S3</b>	70	65	65	50	60	50	70	60	60	60	<b>61.00%</b>
<b>S4</b>	70	70	60	70	60	-	-	40	65	80	<b>64.38%</b>
<b>S5</b>	15	60	50	50	-	-	60	50	50	50	<b>48.13%</b>
<b>S6</b>	-	-	80	70	-	40	-	-	-	-	<b>63.33%</b>
<b>S7</b>	60	-	50	50	-	10	30	10	40	-	<b>35.71%</b>
<b>S8</b>	30	30	60	55	60	50	60	60	-	65	<b>52.22%</b>
<b>S9</b>	95	90	60	70	80	40	60	60	50	95	<b>70.00%</b>
<b>S10</b>	80	70	50	60	60	55	50	50	90	90	<b>65.55%</b>
<b>S11</b>	40	60	50	60	70	50	60	50	-	-	<b>55.00%</b>
<b>S12</b>	70	80	70	80	-	80	-	85	-	-	<b>77.50%</b>
<b>S13</b>	40	70	70	80	50	60	50	25	50	90	<b>58.50%</b>
<b>S14</b>	70	70	80	70	70	70	50	70	70	80	<b>70.00%</b>
<b>S15</b>	50	50	50	50	60	50	50	-	-	-	<b>51.43%</b>
<b>S16</b>	60	60	65	60	65	60	60	60	60	60	<b>61.00%</b>
<b>S17</b>	-	-	-	-	-	-	-	-	-	-	<b>0.00%</b>
<b>S18</b>	-	-	-	-	-	-	-	-	-	-	<b>0.00%</b>
<b>S19</b>	50	-	-	-	-	-	-	-	-	-	<b>50.00%</b>
<b>S20</b>	-	-	-	-	-	-	-	-	-	-	<b>0.00%</b>
<b>S21</b>	65	60	55	50	60	55	50	60	60	50	<b>56.50%</b>
<b>S22</b>	50	50	60	50	50	50	20	50	20	70	<b>47.00%</b>
<b>S23</b>	60	50	60	70	80	80	70	80	70	80	<b>70.00%</b>
<b>S24</b>	40	40	40	65	-	70	60	-	-	60	<b>53.57%</b>
<b>S25</b>	70	50	50	90	90	90	90	85	90	90	<b>79.50%</b>
<b>S26</b>	80	-	-	90	-	-	-	-	-	-	<b>85.00%</b>
<b>S27</b>	40	40	50	50	60	75	-	50	-	70	<b>54.38%</b>
<b>S28</b>	40	-	10	40	55	-	30	60	-	60	<b>42.14%</b>
<b>S29</b>	60	70	70	80	90	OK	75	-	70	-	<b>73.57%</b>
<b>S30</b>	85	60	60	55	90	60	65	85	65	80	<b>70.50%</b>
<b>S31</b>	70	-	20	65	-	-	-	80	-	70	<b>61.00%</b>
<b>S32</b>	50	60	50	50	50	50	60	60	60	60	<b>55.00%</b>
<b>S33</b>	60	60	60	60	65	60	60	60	60	70	<b>61.50%</b>
<b>S34</b>	80	80	80	80	80	-	-	40	-	-	<b>73.33%</b>
<b>S35</b>	90	70	80	70	90	90	90	90	90	85	<b>84.50%</b>

For a further, more detailed, examination, the statistics in Table 3 above were investigated in the following five categories; A (80.00-100.00% of total ratio of the meeting spent in Japanese), B (70.00-79.99%), C (60.00-69.99%), D (50.00-59.99%), and E (0.00-49.99%). Three students (3/35: 8.57%) were in Category A, eight (8/35: 22.86%) in B, another eight (8/35: 22.86%) in C,

nine (9/35: 25.71%) in D, and seven (7/35: 20.00%) in E. The summary of this categorisation can be seen in Table 3-1.

Considering that an average of more than 50.00% (Categories A to D) can be seen as a satisfactory level, Category E should be examined further. The seven students in Category E were S5 (48.13%), S7 (35.71%), S17 (0.00%), S18 (0.00%), S20 (0.00%), S22 (47.00%), and S28 (42.14%). Excluding the three students S17, S18 and S20, who abandoned the LEP entirely, there were only four who may have needed extra attention and/or a warning from the LEP coordinator regarding the need to use Japanese language as a medium more frequently. Since this is a small number of students, the coordinator's encouragement to establish the routine to engage with Japanese use early in the semester, along with sending information and reminders to their Japanese partners, should be effective in future LEP implementations.

**Table 3-1**

Category	Student	Quantity of student
<b>A</b> <b>(80.00-100.00%)</b>	S26, S27, S35	<b>3</b> <b>(/35: 8.57%)</b>
<b>B</b> <b>(70.00-79.99%)</b>	S9, S12, S14, S23, S25, S29, S30, S34	<b>8</b> <b>(/35: 22.86%)</b>
<b>C</b> <b>(60.00-69.99%)</b>	S2, S3, S4, S6, S10, S16, S31, S33	<b>8</b> <b>(/35: 22.86%)</b>
<b>D</b> <b>(50.00-59.99%)</b>	S1, S8, S11, S13, S15, S19, S21, S24, S32	<b>9</b> <b>(/35: 25.71%)</b>
<b>E</b> <b>(0.00-49.99%)</b>	S5, S7, S17, S18, S20, S22, S28	<b>7</b> <b>(/35: 20.00%)</b>

#### **RO4: To Identify the Types of Activities and Ratio of Each Activity regarding the Whole Meeting Time Per Case**

There is a variety of activities conducted during meetings which, for this research, can be classified into the following three activity types (ACT): ACT1, Timely completion of formal unit tasks for the semester; ACT2, Japanese language learning activities which are not linked directly to the formal unit task activities; and ACT3, General social oral interaction. Concrete examples of these activities can be seen in Table 4.

**Table 4**

Category	Activity examples
<b>ACT1</b>	Completing weekly homework, preparing for the weekly task, the mid-semester examination and the end of semester examination.
<b>ACT2</b>	Reviewing Japanese structures learnt in the past and/or to be learned in the future, pronunciation, katakana and kanji, and checking materials written in Japanese such as newspapers, books or magazines.
<b>ACT3</b>	Teaching English to their partner, talking about weekend and/or from casual to deep and serious issues.

In order to identify the proportions of time spent on each activity, it should be taken into account that some students failed to meet their language partners even though they were expected to organise their meetings at least ten times in a semester. Table 5 below shows the proportion of time spent on the three different categories of activities during the meetings.

Generally speaking, the activities can be divided into two major categories: focusing on the structures the students are learning at the time, or simple general chat. Not many students used their meeting times for practices such as reading particular magazines/books or vocabulary/kanji practices. At the same time, it was assumed and/or expected that some students implemented further extra tasks such as writing resumes or letters or writing official documents (application form and cover letter for overseas exchange study program) in Japanese. However, there was not even one single student who conducted such activities. Because of the fact that the LEP could be the students' only opportunity to use their target language and to communicate with the native speaker of the target language, the program coordinator's clear direction to obtain some assistance from their Japanese language partners in advance would be helpful, especially for those who are applying for exchange programs.

**Table 5**

	<b>ACT 1</b>	<b>ACT 2</b>	<b>ACT 3</b>
<b>S1</b>	60.00%	20.00%	20.00%
<b>S2</b>	12.50%	-	87.50%
<b>S3</b>	69.50%	-	30.50%
<b>S4</b>	56.10%	12.50%	31.40%
<b>S5</b>	58.80%	6.30%	35.00%
<b>S6</b>	23.30%	-	76.70%
<b>S7</b>	2.90%	-	97.10%
<b>S8</b>	48.90%	-	51.10%
<b>S9</b>	12.50%	-	87.50%
<b>S10</b>	28.00%	-	72.00%
<b>S11</b>	21.30%	8.80%	70.00%
<b>S12</b>	-	-	100.00%
<b>S13</b>	45.10%	7.50%	47.40%
<b>S14</b>	19.50%	6.00%	74.50%
<b>S15</b>	62.60%	3.60%	33.70%
<b>S16</b>	35.00%	4.00%	61.00%
<b>S17</b>	-	-	-
<b>S18</b>	-	-	-
<b>S19</b>	-	-	100.00%
<b>S20</b>	-	-	-
<b>S21</b>	49.00%	-	51.00%
<b>S22</b>	73.00%	-	27.00%
<b>S23</b>	23.00%	7.00%	70.00%
<b>S24</b>	-	-	100.00%
<b>S25</b>	2.50%	-	97.50%
<b>S26</b>	-	-	100.00%
<b>S27</b>	18.80%	-	81.30%
<b>S28</b>	2.90%	-	97.10%
<b>S29</b>	13.60%	-	86.40%
<b>S30</b>	38.00%	27.00%	35.00%
<b>S31</b>	32.00%	-	68.00%
<b>S32</b>	67.70%	13.00%	19.30%
<b>S33</b>	68.50%	5.00%	26.50%
<b>S34</b>	50.00%	16.70%	33.30%
<b>S35</b>	3.00%	-	97.00%

The statistical summary seen in Table 5 above was investigated further to identify students in each ACT category. First, ACT1 will be discussed. Nine students (9/35: 25.71%) said they had employed ACT1 for over 50.00% of the activities, while the other 26 students (26/35: 74.29%) used ACT1 activities less than 50.00% of the time (see Table 5-1 below).

Category E (0.00-49.99%) in Table 5-1 includes 26 students (26/35: 74.29%); since this is the majority, it justifies a further investigation. Table 5-1-1 shows that there are three students (3/26: 11.54%) who used ACT1 at 40.00 to 49.99%, another three students (3/26: 11.54%) who used it at 30.00 to 39.99%, four (4/26: 15.38%) who used it at 20.00 to 29.99%, five (5/26: 19.23%) who used it at 10.00 to 19.99%, and 11 (11/26: 42.31%) who used it at 0.00 to 9.99%. Especially in the last group of ten students, seven; S12, S17, S18, S19, S20, S24 and S26 (7/26: 26.92% or 7/35: 20.00%) entirely ignored implementing any activities associated directly with the unit tasks/assignments regarded as ACT1.

From the unit coordinator's practical perspective, there is a high expectation that the LEP will promote students to engage with their target language use through the weekly assignment/tasks, although it appears that not many students were fully utilising the LED for review and/or preview of the elements directly linked to the unit which they were taking at that time. Nevertheless, such expectation may be suppressed for the future because ACT1 is one of the ACTs which may enhance students' total motivation and interest in Japanese language and learning. In order to let the students implement more balanced program activities, it might be a sound strategy to encourage the LEP as a program for their study assistance, as well as informing the Japanese native speaker participants officially about this particular aim of the LEP. Alternatively, the LEP should be altered to the Language Assistant Program, and it might be better to shift it completely to being volunteer language assistance, rather than the language exchange that it naturally tends to be.

**Table 5-1: Students Conducting ACT1**

Category	Student	Quantity of student
<b>A</b> <b>(80.00-100.00%)</b>	-	<b>0</b> <b>(/35: 0.00%)</b>
<b>B</b> <b>(70.00-79.99%)</b>	S22	<b>1</b> <b>(/35: 2.86%)</b>
<b>C</b> <b>(60.00-69.99%)</b>	S1, S3, S15, S32, S33	<b>5</b> <b>(/35: 14.29%)</b>
<b>D</b> <b>(50.00-59.99%)</b>	S4, S5, S34	<b>3</b> <b>(/35: 8.57%)</b>
<b>E</b> <b>(0.00-49.99%)</b>	S2, S6, S7, S8, S9, S10, S11, S12, S13, S14, S16, S17, S18, S19, S20, S21, S23, S24, S25, S26, S27, S28, S29, S30, S31, S35	<b>26</b> <b>(/35: 74.29%)</b>

**Table 5-1-1: Students Conducting ACT1 for Less Than 49.99% (Category E in Table 5-1)**

Category	Student	Quantity of student
<b>A</b> <b>(40.00-49.99%)</b>	S8, S13, S21	<b>3</b> <b>(/26: 11.54%)</b>
<b>B</b>	S16, S30, S31	<b>3</b>

<b>(30.00-39.99%)</b>		<b>(/26: 11.54%)</b>
<b>C</b> <b>(20.00-29.99%)</b>	S6, S10, S11, S23	<b>4</b> <b>(/26: 15.38%)</b>
<b>D</b> <b>(10.00-19.99%)</b>	S2, S9, S14, S27, S29	<b>5</b> <b>(/26: 19.23%)</b>
<b>E</b> <b>(0.00-9.99%)</b>	S7, S12, S17, S18, S19, S20, S24, S25, S26, S28, S35	<b>11</b> <b>(/26: 42.31%)</b>

Next, ACT2 will be discussed (see Table 5-2 for the summary). All students used Japanese activities linked directly to their unit assignments/tasks for over 50.00% of the LEP. Therefore, the analysis was concentrated only on Category E, which was divided further into five categories: A (40.00-49.99%), B (30.00-39.99%), C (20.00-29.99%), D (10.00-19.99%) and E (0.00-9.99%), which can be seen in Table 5-2-1. There are no data recorded in Categories A and B, two (2/35: 5.71%) in C, three in D (3/35: 8.57%) and 30 in E (30/35: 85.71%). This result indicates that the majority of students did not utilise the LEP as an opportunity to conduct further study or improve their Japanese language. In this case, the concept of the LEP for further core study of the target language should be reconsidered. At the same time, it might be more practical for the LEP coordinator to let the students concentrate more on activities of either ACT1 or ACT3 from the very beginning.

**Table 5-2: Students Conducting ACT2**

Category	Student	Quantity of student
<b>A</b> <b>(80.00-100.00%)</b>	-	<b>0</b> <b>(/35: 0.00%)</b>
<b>B</b> <b>(70.00-79.99%)</b>	-	<b>0</b> <b>(/35: 0.00%)</b>
<b>C</b> <b>(60.00-69.99%)</b>	-	<b>0</b> <b>(/35: 0.00%)</b>
<b>D</b> <b>(50.00-59.99%)</b>	-	<b>0</b> <b>(/35: 0.00%)</b>
<b>E</b> <b>(0.00-49.99%)</b>	S1, S2, S3, S4, S5, S6, S7, S8, S9, S10, S11, S12, S13, S14, S15, S16, S17, S18, S19, S20, S21, S22, S23, S24, S25, S26, S27, S28, S29, S30, S31, S32, S33, S34, S35	<b>35</b> <b>(/35: 100.00%)</b>

**Table 5-2-1: Students Conducting ACT2 for Less Than 49.99% (Category E in Table 5-2)**

Category	Student	Quantity of student
<b>A</b> <b>(40.00-49.99%)</b>	-	<b>0</b> <b>(/35: 0.00%)</b>
<b>B</b> <b>(30.00-39.99%)</b>	-	<b>0</b> <b>(/35: 0.00%)</b>
<b>C</b> <b>(20.00-29.99%)</b>	S1, S30	<b>2</b> <b>(/35: 5.71%)</b>
<b>D</b> <b>(10.00-19.99%)</b>	S4, S32, S34	<b>3</b> <b>(/35: 8.57%)</b>
<b>E</b> <b>(0.00-9.99%)</b>	S2, S3, S5, S6, S7, S8, S9, S10, S11, S12, S13, S14, S15,	<b>30</b> <b>(/35: 85.71%)</b>

	S16, S17, S18, S19, 20, S21, S22, S23, S24, S25, S26, S27, S28, S29, S31, S33, S35	
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Third is the ACT3, which will be discussed by referring to Table 5-3 below. There were 12 students (12/35: 34.29%) conducting activities categorised as ACT3 at 80.00 to 100.00%. This means that activities such as teaching English to their partners, talking about weekend activities and/or moving from casual to deep and serious issues were their main activities during the LEP. In particular, the four students S12, S19, S24 and S26 (4/35: 11.43%) rated 100.00%, indicating that the LEP meetings with their partners were based entirely on activities which were neither directly nor indirectly linked to Japanese language learning. This indicates the need for caution in future LEP management, and an official warning that ACT3 should be engaged as a substitute for ACT1 and ACT2. Identifying students such as these and monitoring their activities from the early stage of the program should ideally be introduced in the future.

The largest category shown in Table 5-3 is Category E (0.00-49.99%), which includes 13 students (13/35: 37.14%). The summary of further examination can be seen in Table 5-3-1 below. Considering that Category E contains three students, S17, S18 and S20 (3/13: 23.08%), who had never attended any meetings at all, it can be said that all of the other ten students (10/13: 76.92%, 10/35: 28.57%) belonging to the other categories B, C and D would be the ones who introduced their activities in an ideal manner, since ACT3 can be a critical aspect which may turn the LEP into a peripheral compulsory assignment.

**Table 5-3: Students Conducting ACT3**

Category	Student	Quantity of student
<b>A</b> <b>(80.00-100.00%)</b>	S2, S7, S9, S12, S19, S24, S25, S26, S27, S28, S29, S35	<b>12</b> <b>(/35: 34.29%)</b>
<b>B</b> <b>(70.00-79.99%)</b>	S6, S10, S11, S14, S23	<b>5</b> <b>(/35: 14.29%)</b>
<b>C</b> <b>(60.00-69.99%)</b>	S31	<b>1</b> <b>(/35: 2.86%)</b>
<b>D</b> <b>(50.00-59.99%)</b>	S8, S13, S16, S21	<b>4</b> <b>(/35: 11.43%)</b>
<b>E</b> <b>(0.00-49.99%)</b>	S1, S3, S4, S5, S15, S17, S18, S20, S22, S30 S32, S33, S34	<b>13</b> <b>(/35: 37.14%)</b>

**Table 5-3-1: Students Conducting ACT3 at Less Than 49.99% (Category E in Table 5-3)**

Category	Student	Quantity of student
<b>A</b> <b>(40.00-49.99%)</b>	-	<b>0</b> <b>(/13: 0.00%)</b>
<b>B</b> <b>(30.00-39.99%)</b>	S3, S4, S5, S15, S30, S34	<b>6</b> <b>(/13: 46.15%)</b>
<b>C</b> <b>(20.00-29.99%)</b>	S1, S22, S33	<b>3</b> <b>(/13: 23.08%)</b>
<b>D</b> <b>(10.00-19.99%)</b>	S32	<b>1</b> <b>(/13: 7.69%)</b>
<b>E</b> <b>(0.00-9.99%)</b>	S17, S18, S20	<b>3</b> <b>(/13: 23.08%)</b>

## Conclusion

The results of this investigation suggest strongly that the LEP instruction should be designed carefully, with clear guide-lines, in order to maximise the positive effects for students. According to the students' activity patterns identified in this research, it is highly recommended that students make the LEP a part of their routine. The LEP coordinator should acknowledge fully the nature of the LEP and ensure that effective contacts are made throughout the semester. Before students establish their meeting patterns, it is crucial that they be given clear guidelines about time, topics and the proportion of time that should be spent on Japanese usage. This might create a motivation issue as this kind of approach would be relying more on external than internal motivation. Practically, however, there should be no negative effects of external motivation. Therefore, overt direction and encouragement to introduce the activities linked to ACT1 and ACT2 should be demanded as core activities, with ACT3 being practised subconsciously, in the LEP meetings with their language partners.

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*Through the Lens of Schools: An Examination of School-based Curriculum  
Innovation (SCI) in Technology-Driven Schools in Singapore*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

This study investigates the school-based curriculum innovations (SCIs) in nine primary and secondary schools in Singapore, including six schools which have implemented information and communication technology (ICT) initiatives in their curriculum, pedagogies and school wide activities. The study adopts a holistic approach and takes both retrospective and in-situ perspectives while looking into the SCIs in these ICT schools with the intent of obtaining in-depth understanding about the conditions, processes, and outcomes of the SCIs in these school contexts. This paper first introduces the general scope of the study, which is followed by the review of the literature on approaches to SCIs and the discussion of the methodologies adopted in the study. The paper ends with the presentation of some preliminary findings; and some major challenges encountered since the study was carried out together with several recommendations proposed by the authors.

**Keywords:** SCIs, SBCE, ICT, curricular innovation, curricular development

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## 1. Introduction

Singapore continues in the second top ranking of The Global Information Technology Report 2010-2011, which exemplifies the government's earnest efforts in adopting and implementing Information and Communication Technology (ICT) advances for increased growth and development. In response to developing a knowledge based and ICT applied economy, the Ministry of Education (MOE) Singapore has developed various initiatives to create an increasing diversity and flexibility in Singapore's education landscape where it is regarded as important to make local decisions and be more responsive to student needs. The major aim of these initiatives is to improve the quality of learning by encouraging and supporting school-based curriculum innovations (SCIs). The term SCI is also known as School-based Curriculum Development (SBCD) in academic and international area, and in this paper we use the two terms interchangeably. In Singapore, this current SCI movement has now involved six cohorts covering nearly all schools (primary and secondary), which is a significant change from previous practice in which curriculum was centrally planned. The study is designed to acquire baseline information and understanding of curriculum initiatives in nine Singapore schools, including six schools which have implemented ICT initiatives in their curriculum, pedagogies and school wide activities.

## 2. Literature Review

As a philosophy approach, SBCD articulates a blend of philosophical/theoretical ideas and ideals regarding education. (Marsh 1992; Skilbeck, 1984). Skilbeck suggests that SBCD necessarily requires the co-construction of curriculum by teachers and students; teacher and student autonomy in curriculum development, and schools' responsiveness to the environment (local conditions). Others highlight collaboration among school staff as a significant aspect of SBCD (Bezzina, 1991). In systemic approach, we refer to works which attempt to discuss curriculum change in the broader context of educational change/reform and organization theory. Thus Fullan's works (1993, 1999, 2001, 2007) highlight the importance of viewing schools as complex systems requiring restructuring and re-culturalizing (i.e., developing organization leadership) to bring about fundamental educational change/reform.

From the West, since 1970s, there are collections of empirical studies on SCIs in countries such as UK, and Australia (Bolstad, 2004). These case studies examine aspects like teacher roles and experiences of teachers involved in SBCD (Bezzina, 1991; Cocklin *et al.*, 1995); student roles (Brooker & Macdonald, 1999), community involvement (May, 1992), and processes (Marsh *et al.*, 1990; Cocklin *et al.*, 1995). However, these works do not focus on whole school curriculum development in which the school staff consciously tries to develop policies which would affect the practice of them all. In the East, empirical work on SBCD has been emergent since the 1990s, mostly initiated in response to national and economic policy of the different countries. Taiwan, Hong Kong, and Korea share in common the development of integrated and interdisciplinary curriculum. In Singapore, there is a dearth of theoretical work on SBCD with the exception of the

work of Gopinathan and Deng (2006). They propose a SBCD model for Singapore which they term “enactment of curriculum” in the context of education reforms in Singapore since the late 1990s. The characteristics of this model include the provision by central authorities of curricular materials in which teachers in Singapore mostly adapt and integrate, rather than create new curriculum to fit the local context (specific school and student needs). Hence, there is a need to conduct more case studies of whole school curriculum development in order to be able to compare within school and across schools towards the development of theory of SBCD and its specific aspects.

### **3. Methodology**

This research involves two phases. The two phases are differentiated by methodology while our research questions apply across the two phases. The first phase focuses on a retrospective study of school based innovations in nine diverse schools over a period of 12 months. From the nine schools, we intend to sieve out the common patterns and divergent pathways in SBCD enactment which will help refine our research focus in the in-situ study in Phase 2. In Phase 2, an in-situ, ethnographic study will be conducted over a period of a year in two schools selected from the nine schools in the first phase. The following research questions in order of priority are:

1. How do schools with diverse conditions enact curriculum innovation?
2. What conditions shape the enactment of curriculum innovations in the case study schools?
3. What are the outcomes of curriculum innovations on key personnel, teachers, and students?

Phase 1 will involve seven NIE (National Institute of Education) researchers and nine MOE collaborators to conduct focus groups in nine schools over nine months. The NIE researchers will be responsible for the research conceptual framework, the research design, data collection, data analysis and written output. The MOE collaborators have, prior to this project, been working with some of the schools and their familiarity with those schools will facilitate the conduction of the research. Apart from aliasing with schools and providing access to schools, the MOE collaborators will participate in the data collection and analysis. Such an arrangement is to ensure a tight network of working relations within NIE team and between NIE researchers as well as MOE collaborators. Workshops at NIE will be held for the MOE collaborators before research commences to ensure a common understanding of research approaches and methodology. In the retrospective study of this first phase, we will be examining the conditions, processes, and outcomes of SBCD from the perspectives of the participants through Focus Group Interviews (FGDs). Phase 2 spans a period of two years; in-situ, ethnographic research work will be carried out in two schools in 12 months for a complete academic cycle, with another one year allocated to data analysis and writing. We will identify two schools that exhibit the most depth and breadth in SBCD enactment for our purpose.

Whereas the emphasis in Phase 1 is on the SBCD participants’ perceived conditions, processes and outcomes, more time in the field in the second phase allows us to also capture SBCD in practice as well as in perception. An ethnographic approach combines on-site observations of SCI enactment

with interviews on practice observed can reveal the congruence or discrepancies in perceived and practised SBCD which in turn will provide insight into negotiations in the practice of SCI, and illuminate conditions explaining the convergences and discrepancies. The fieldwork component is thus very important in this phase. So, apart from FGDs and individual interviews, lesson observations as well as field notes made of committee meetings, teachers' informal exchanges and activities will be studied.

#### **4. Preliminary Findings**

Regarding the first research question, the six Singapore schools which have implemented ICT initiatives in their SCI/SCBCD show a culture of learning as the core theme across the school stories. The culture of learning has four characteristics, namely collaborative (in terms of constant teacher interactions and curricular and pedagogical sharing), autonomous (with teachers having autonomy and empowered to design, plan and implement curricular innovations), open (to diverse opinions and to experimentation) and safe (to express spontaneous and/or dissenting opinions).

As to the conditions, the leaders who share the following common characteristics tend to serve as a catalyst for this culture of learning. They encourage teachers to take risks in experimenting with SCI. They are consultative and often make themselves available for discussion. They also institute supportive structures such as budgetary support, the provision of time as well as project committees for talks across levels and across departments among teachers. Finally, they propel a direction in terms of vision, beliefs and values. These findings are consistent with existing literature on importance of school leadership.

In reference to the last research question, the reported outcomes of curriculum innovation fall mainly into four areas. One such outcome is reflected in the exam grade maintained, particularly as a "non-negotiable" bottom-line for any curriculum innovation. To MOE's credit, the recent emphasis on 21st century learning has encouraged schools to achieve such competencies in varying degrees. Also, gains in teacher learning have been noted in such areas as technological skills, alternative assessments and appropriate ICT integrated and student-centred pedagogy as a result of their involvement in SCI. Finally, for some schools the culture of learning as mentioned above has evolved as an outcome of the school's involvement in SCI.

#### **5. Challenges and Recommendations**

It is worth noting that the discussion in this section will focus on methodologies since the results were still preliminary when this paper was written. The researchers have encountered some challenges since this study was initiated. First, coordinating the common time between the school personnel, MOE staff and researchers was not easy because of the tight schedules under which all three groups of stakeholders work under, thus multiple attempts needed to arrange and rearrange the dates of focus group discussions. There were many delays in the commencements of the FGDs and there were two instances where arranged FGDs were cancelled without advance notifications to the

research team, leading to wastage of time and the need to re-arrange the sessions. Greater attention needs to be paid to the building of a closer relationship and better communication between the schools and researchers. In addition, in a number of FGD sessions, many participants had difficulty in identifying the common SCI initiatives that all of them could relate to in their schools as they lacked the experience of making collective decisions among them, ending up asking each participant to talk about stories in respective departments. The FGD facilitators needed to handle the silence, inquiries and clarifications before arriving at one SCI initiative that the school has implemented. This challenge can be solved by choosing FGD participants from the same department.

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*Human Tape Recorders: Curricular Integration and Team Teaching in Japan*

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Official Conference Proceedings 2012

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## **Introduction**

The dissemination of native-speaking assistant language teachers (ALTs) throughout the Japanese state school system has been proclaimed as ‘the greatest initiative undertaken since World War II related to the field of human and cultural relations’ (CLAIR, 1991, in McConnell, 2000, p. x). The arrival of 848 young, mostly American, recent graduates at a hotel in Tokyo in 1987 marked the start of the Japan exchange and teaching (JET) program, which has grown greatly and continues to this day. With its unprecedented co-operation between three government ministries and multiple aims, the program had to overcome a difficult start in order to establish itself. Despite the reluctance of many local education boards to accept an ALT and a number of highly-publicized criticisms of the purpose of the program from both local and international media, the JET program continued and was able to overcome its early difficulties, and has received many favorable critiques (see Wada, 1994).

Despite its longevity and expansion, its success in revolutionizing English language teaching (ELT) methodology is debatable<sup>1</sup>. Many Japanese teachers of English (JTE) still teach according to a traditional grammar-based approach that does not include the aspects of communicative language teaching (CLT) that the ministry of education’s official ‘course of study’ lays out (Sakui, 2004), and the average scores of Japanese students taking the international Test of English as a Foreign Language (TOEFL) still rank lower than most other countries for which data is available, unimproved from the 1980s when team teaching was introduced in Japan (Gottlieb, 2004).

This study will attempt to assess the extent to which ALTs and their lessons, team taught with a JTE, are integrated into the wider curriculum. By examining the extent to which team teaching is integrated into the English curriculum in Japanese state schools, it may be possible to infer whether team teaching has become an effective component of ELT in Japan, or whether it is a distraction, unrelated to the daily reality of preparation for English examinations.) Particular attention will be paid to the use of the class textbook; as JTEs believe their primary objective when teaching English is to teach the contents of the textbook (Browne and Wada, 1998, in Crooks, 2001), and therefore as the textbook is often the ‘de facto curriculum’ in the classroom (Gorsuch, 1999), evaluating the extent of its use allows for a practical investigation of curricular integration. This is a particularly timely question with the recent introduction of a mandatory ELT curriculum into elementary schools.

## **Team Teaching in Japan**

The reasons for team teaching being embraced in Japan are numerous and are more political than educational, as explained by McConnell (2000). Throughout the 1980s, Japan was under pressure to address its trade deficit with the United States. At the 1986 summit between President Reagan and Prime Minister Nakasone, Japan was once again under pressure to ‘internationalize’. Nakasone’s office had the idea of inviting foreign youth to Japan, but was not sure by what means until coming upon a number of small teaching programs involving

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<sup>1</sup> There are ALTs assigned to teach other languages, but the overwhelming majority teach English.

foreign participants being run by the ministry of education (*mombusho*<sup>2</sup>). The ministry had been running small-scale projects that utilized native-speaker teachers in schools, such as the *Mombusho* English Fellows program and the British English Teaching scheme. These schemes grew steadily in number, to more than 200 teachers in total in 1986, but these schemes did not involve team teaching in any form (McDonnell, pp. 41-43). Nakasone's office came up with the idea of inviting foreign youths into Japanese schools, but not wishing to upset the teachers' union by designating untrained foreign arrivals as teachers, it was decided that program participants were to be assistants to the Japanese teachers.

The JET program was presented to the American delegation as a 'gift' to show Japan's commitment to (1) open its doors to foreign (primarily American) youths, (2) internationalize local Japanese government and (3) improve the English skills of its citizens (ibid.). *Mombusho* was the last ministry to be consulted, after the ministries of foreign affairs and home affairs. The ministry had not requested large numbers of English native speakers, but was informed that 848 participants were to come to Japan as assistant language teachers and the ministry was to find an educational purpose for them. The result of this in the early years of the JET program was that many ALTs complained of being 'human tape recorders' (the experience of being in the classroom only to read out loud conversations and example sentences from the textbook), as local education officials and JTEs did not know what to do with the new arrivals due to the lack of guidance issued to them. Subsequent guidelines, revisions of the ELT curriculum, and the passing of time as all parties involved settled into a pattern helped to clarify the role of ALTs in Japanese schools, though poorly defined roles and the confusion this can create is an issue that lingers (see Mahoney, 2004).

Team teaching in Japan is usually a 45 minute English lesson carried out by two teachers, the ALT and the JTE, who also conducts solo lessons when the ALT is not present. ELT in Japan has traditionally been based on the grammar-translation method, and does not require students to speak in English (Davies & Tsuido, 2008). One of the aims of the JET program is to introduce a more communicative aspect to English lessons by introducing ALTs into Japanese classrooms to undertake team teaching. ALTs must be native speakers of English from a select group of countries<sup>3</sup>, and although they are required to be university graduates, they are not required to be trained in ELT. After receiving a week-long induction and training period in Tokyo, ALTs are distributed to regional boards of education and schools throughout Japan.

The scale of team teaching using foreign teaching assistants is unprecedented. Although similar schemes exist in neighboring countries, they are generally on a smaller scale and use experienced ELT teachers, such as in Hong Kong (Carless, 2006). Indeed, the longevity of the JET program is all the more remarkable when compared to a similar scheme to place ALTs in schools in South Korea, which due to the problems it encountered no longer exists (ibid.).

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<sup>2</sup> *Mombusho* is the Japanese name for the ministry of education that is frequently used in the literature. Therefore the same convention will be followed here.

<sup>3</sup> These countries were initially the United States, the United Kingdom, Australia and New Zealand (McConnell, 2000, p.50), but the list has now grown to include 36 countries: see <http://www.jetprogram.org/e/aspiring/countries.html>

The curriculum of English lessons in Japan is decided by *mombusho*, and is issued as the ‘course of study’. Japan is one of only a few countries to officially authorize textbooks for use in schools (McConnell, 2000). Despite the introduction of ALTs and team teaching being intended to prompt a more communicative-based methodology, the course of study was slow in changing to reflect this (Wada, 1994). ALTs are generally expected to work with the Japanese teacher to produce a lesson plan that incorporates and adapts elements of the curriculum, rather than being provided with a set team-teaching curriculum by *mombusho* or any other official source (CLAIR, 2010). This could provide opportunities for ALTs and JTEs to integrate their lessons into the curriculum, but the lack of guidance provided by *mombusho* and the differing pedagogical approaches of the teachers has the potential to create confusion, conflict and the subsequent marginalization of team taught lessons.

### **Team Teaching on the JET Program**

It may be expected that there is one definitive definition of what is expected in a team taught lesson given by *mombusho* or one of the other agencies involved in the JET program, but this is not the case. The only definition from *mombusho* is to be found in the Handbook for Team Teaching (1994, p.14, in Carless, 2001), written and published by *mombusho* itself and distributed to all JET program participants at their orientation in Tokyo. It states:

‘Any time two or more teachers work together to guide an individual learner or a group of learners toward a set of aims or objectives, that type of teaching can be called team teaching.’

This is a rather broad definition, and does not appear to be specific to the Japanese context. It also does not make reference to the teachers actually being in the classroom together. A more specific definition from Wada, one of the architects of the JET program, states that:

‘Team-teaching is a concerted endeavor made jointly by the Japanese teacher of English and the assistant English teacher in an English language classroom in which the students, the JTE and the AET<sup>4</sup> are engaged in communicative activities.’ (Brumby & Wada, 1990, in Igawa, 2009)

This is very similar to the only other available definition of team teaching in Japan, which is from CLAIR’s<sup>5</sup> Resource Materials and Teaching Handbook:

‘The goal of team-teaching is to create a foreign language classroom in which the students, the Japanese teacher of the foreign language (JTL) and the native speaker (ALT) engage in communicative activities.’ (CLAIR, 2010, p. 22)

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<sup>4</sup> AET (Assistant English Teacher) is sometimes used interchangeably with ALT.

<sup>5</sup> CLAIR, the Council of Local Authorities for International Relations, is a quasi-governmental organisation created to administer the JET program.

These are much more specific definitions, but do not make reference to the expected role of each teacher. They exclude what happens before and after lessons, and only discuss what occurs in the classroom. There is no mention of how responsibility could or should be shared between the teachers, and in fact do not discuss teaching in any form, only that all participants should be involved in communicative activities. The most noteworthy aspect of the definitions of team teaching from CLAIR and Wada is that team teaching in this context is inextricably linked with communicative activities, but no reference is made to planning, evaluation or teacher roles.

The lack of defined roles has consequences. Richards and Farrell (2005) state that knowing and abiding to pre-agreed roles is essential for team teaching, and that only with these elements can the second required element, trust and mutual respect, develop. It is also important for the teachers to agree on how to share or divide various responsibilities during the team teaching process. The emphasis should be on sharing responsibilities, otherwise 'the collaboration dissolves into team teaching in name only' (Sandholtz, 2000). Mahoney's (2004) recent survey assessed the roles of ALTs and JTEs. It contains comments from ALTs such as 'Although my role is as an assistant, I'm actually the teacher of the class'. A significant minority of senior high school JTEs believe the role of the ALT is to lead the class, that the JTE should be the assistant to the ALT and that the ALT should either provide lesson plan ideas or make the whole lesson plan. This may be due to the fact that senior high school classes are divided into reading, writing and speaking classes, and ALTs may be more likely to be placed in speaking classes, where JTEs are more likely to defer to the speaking ability of ALTs. JTEs and students may not see speaking classes as 'serious' exam preparation, and so these classes may not be considered as important as reading and writing classes. This is in contrast to junior high schools, where lessons are not divided into skills and there is less pressure to pass exams (LoCastro, 1996). These results could suggest that team teaching is more successfully carried out in classes where the pressure from exams is less keenly felt.

Time is also an important factor. Teaching teams require 'sufficient time allotted for joint planning, instruction, and evaluation' (ibid.). Allocated time outside the classroom is particularly important, especially when considering that 'only a small part of team teaching actually happens with teachers working together in classrooms. A great deal occurs *before* lessons' (Bailey, Curtis & Nunan, 2001, p. 181). In the long term, time may also be a necessary factor for successful team teaching; Armstrong (1977), conducting an analysis of team teaching research in public education in America, noted that some studies only reported benefits on student performance in the second year of team taught lessons. He concluded that 'this finding may indicate that a teaching team requires a necessary "percolation time" before it becomes an efficient instructional unit'. It is difficult to assess whether JTEs and ALTs are given sufficient time to form the necessary relationships to forge successful teaching teams.

Team teaching successfully carried out may provide educational benefits; Armstrong (1977) reviewed studies on the effect of team teaching in American state schools on academic achievement and found that, although difficult to generalize due to the different nature of each study, team teaching may have a positive effect on academic achievement when compared to solo teaching. Team teaching generally requires a lot of preparation time to be successful: a class should be well coordinated between teachers, as there is a danger that a lesson can simply become two separate classes taught by two teachers in the same room

rather than a coordinated lesson (Sandholtz, 2000). This was noted by McConnell (2000) in his observations of team taught classes; they tended to gravitate to one extreme or the other and either be handed over entirely to the ALT, or the ALT became part of the furniture of the classroom, or the dreaded human tape recorder. Other classes involved dividing the lesson into two sections; a conversation-based section lead by the ALT, and an exam preparation section lead by the JTE. In either case, the potential for spontaneous interaction between the teachers in English is minimized.

## **Methodology & Findings**

Having established that various factors, including time planning together and clearly defined roles, are essential factors in a successful teaching team, I created a survey to attempt to assess how these factors can affect curricular integration of team taught lessons. 68 participants began the questionnaire, of which 57 completed all the questions<sup>6</sup>. 38 (66.7%) of the respondents were female, and the nationality of the participants is shown in table 1.

<b>Table 1: Nationality of participants</b>		
<i>Nationality</i>	<i>Number of respondents</i>	<i>Percentage</i>
USA	31	54.4%
Canada	10	17.5%
UK	10	17.5%
Australia	3	5.3%
New Zealand	2	3.5%
Ireland	1	1.7%

Respondents were overwhelmingly JET program participants<sup>7</sup>, with only three respondents having been recruited by private companies, and one via a sister city program. 93% of participants were former ALTs.

ALTs were asked to participate for various reasons. Practically, as alumni organizations for the JET program and other private companies exist, they were easier to contact than JTEs, for whom no such organizations exist. ALTs have also received more official guidance regarding team teaching, and it is the main activity of their employment, again in contrast to JTEs. As this is a single group, potential participants contacted self-selected into the study by choosing to complete the questionnaire.

<sup>6</sup> Only the responses of those participants who completed the whole survey were included. Therefore the number of questionnaire participants was 57.

<sup>7</sup> I also invited ALTs who had been recruited by private companies to complete the survey. ALTs provided by such companies perform the same roles as those recruited by the JET program.

The questionnaire that was distributed to participants was created on Survey Monkey (SurveyMonkey.com) and distributed electronically. The questionnaire consisted of an information page, consent form, demographic information regarding team teaching, and questions regarding lesson planning and methodology. Three semi-structured interviews were also conducted. One interview was with a former ALT, one with a JTE and one with a Japanese high school graduate. The interviews were between 30 and 40 minutes, and the format was between unstructured and semi-structured.

### **General findings**

Firstly, examining who the lesson plan was created by, the total responses given indicate that ALTs most commonly created lesson plans alone (see table 2). However, the results are slightly more complex when the answers are divided by school level.

<b>Table 2: For team taught lessons, who would usually create the lesson plan?</b>					
	<i>Kindergarten</i>	<i>Elementary school</i>	<i>Junior high school</i>	<i>Senior high school</i>	<i>Total responses</i>
<i>Joint preparation</i>	1	9	19	17	46
<i>Myself</i>	5	21	12	19	57
<i>The JTE</i>	1	6	17	11	35

It may be possible to explain these results when considering the findings of other studies discussed above. Before proceeding to an attempted explanation, it is necessary to consider the role of the curriculum at each school level. As figure 1 shows, at kindergarten and elementary school, no curriculum is provided, or the ALT is required to create their own. This is in sharp contrast to secondary school, where the school or JTE provides the curriculum, although the difference is less prominent at the senior high school level where a significant minority of ALTs were also required to create their own curriculum.

## For team taught lessons, who provided the curriculum?

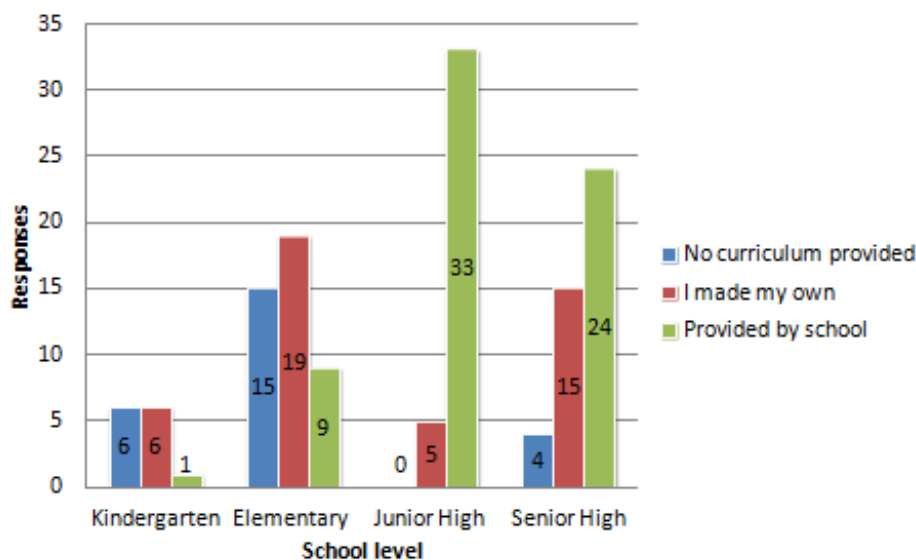


Figure 1

At elementary schools and kindergartens, a curriculum was supplied in only a few cases. It is highly likely that Japanese teachers at these levels did not teach any solo lessons, both because English was not a mandatory subject prior to April 2011 and because of the lower English ability of Japanese teachers reported by some ALTs in their open-ended responses. It would seem that both of these factors contribute to English lessons at these levels being formulated and delivered by ALTs alone. To illustrate this point, one ALT reported that:

‘For elementary I controlled the curriculum and collaborated as I felt necessary, for example, for teachers who wanted to team teach rather than having me take the class.’

Kindergarten and elementary schools must therefore be considered separately from secondary schools. At three of the four school levels, lesson preparation by the ALT was the most common response. Junior high school was the only level for which joint preparation was the most common response, though it must be noted that JTE-only preparation was a close second. It should also be noted joint preparation is still occurs in a minority of cases (39.6%), though interestingly solo preparation by the ALT was the least common response at this level, in direct contrast to all other school levels.

Observing which teachers are involved in creating a lesson plan at each school level may provide a crude measure of how integrated team taught lessons are into the curriculum, at least at secondary level. Figure 2 shows the response rate for JTE involvement in lesson planning, which is either joint planning or JTE-only planning, and no JTE involvement, which is ALT-only planning. At secondary school level, it is assumed that as the JTE teaches the students alone for the majority of classes, the JTE has good knowledge of the curriculum. It is also assumed that the JTE being involved in the planning of a team taught lesson, either alone or with the ALT, will, or at least can, produce a lesson plan for a team taught class that is

integrated into the curriculum. This is not always the case; for example, one ALT reported that ‘For high school, my JTE assigns the topic (i.e. grammar point), and I create the plan by myself.’ The reverse is also true, as some JTEs will wish to use the lesson to deliver content that is not in the regular curriculum. Nevertheless, assuming that in most cases collaboration can lead to well-integrated lessons, figure 2 shows that lessons planned for junior high school provide the most opportunity for curricular integration.

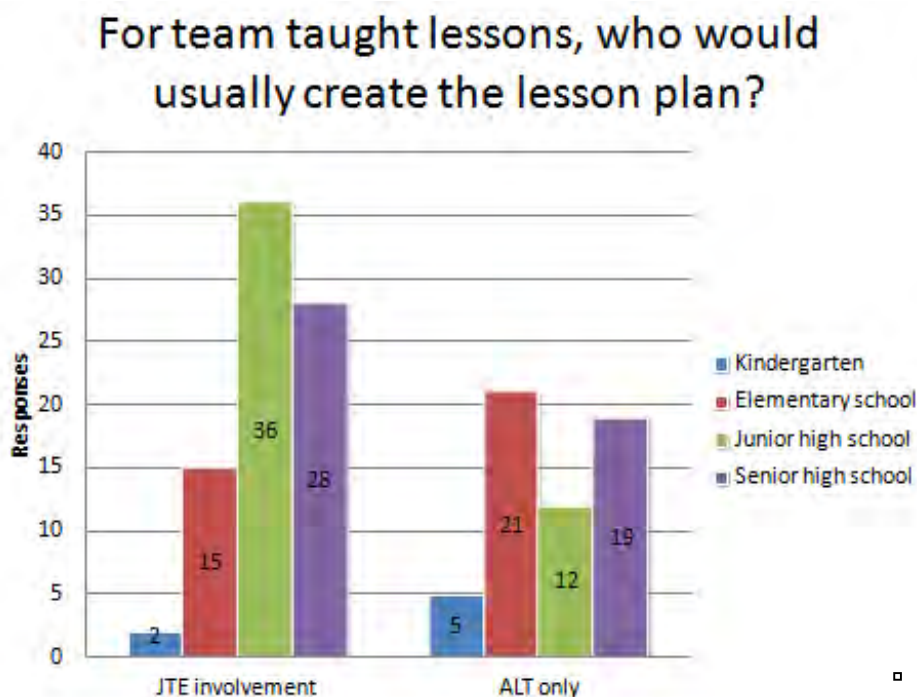


Figure 2

At the high school level, responses in figure 1 for who provided the lesson plan are much more evenly distributed than at other school levels, and only 24 of 45 responses (53.3%) stated that the school provided the curriculum, compared to 33 of 41 responses (80.5%) at the junior high school level. The lower levels of collaborative lesson planning and school-provided curriculum would appear to indicate that high school team-taught English lessons are more isolated from the rest of the English curriculum when compared to junior high school. This may be due to the nature of English lessons in senior high schools. Ryan (2008) and McConnell (2000) have suggested that the pressure on students and teachers to prepare for university entrance examinations can have various effects. Team taught classes can become compartmentalised, unrelated to the rest of the curriculum and the ‘serious’ study of English for entrance examinations, or it may be that there are few or no team taught lessons at some senior high schools; fewer ALTs reported having regular classes at this level.

### **Textbook use**

For the vast majority of ALTs, a textbook was provided for their classes (table 3).

<b>Table 3: For most of your classes, was a textbook provided?</b>	
<i>Yes</i>	52
<i>No</i>	5

This would seem to indicate that ALTs were provided with the opportunity to integrate team taught lessons. However, the amount to which a textbook was used as a source of materials in team taught classes (figure 3) shows that 60% of respondents used the textbook ‘always’ or ‘often’. This is a majority of respondents, but not a large majority, and shows that the presence of a textbook does not necessarily indicate an expectation that it should be used; it is also worth noting that the textbook provided is not necessarily the same textbook that the JTE uses in a solo-taught lesson.

### How often did you use the textbook as a source of materials for using in class?

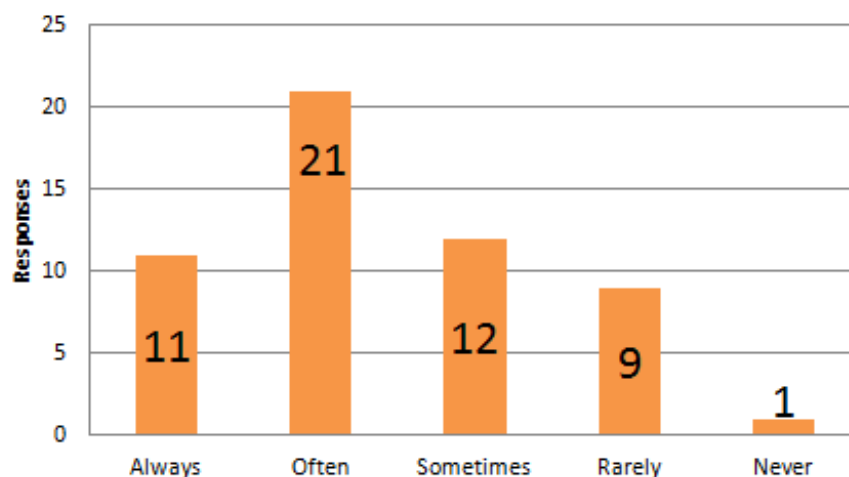


Figure 3

If there is a discrepancy between the presence of a textbook and the amount it is used, it is worth considering the expectations of using the textbook by various parties involved in English classes, shown in figure 4 (taken from a likert scale question in the survey).

## Who felt it was important to use the textbooks as a source of materials?

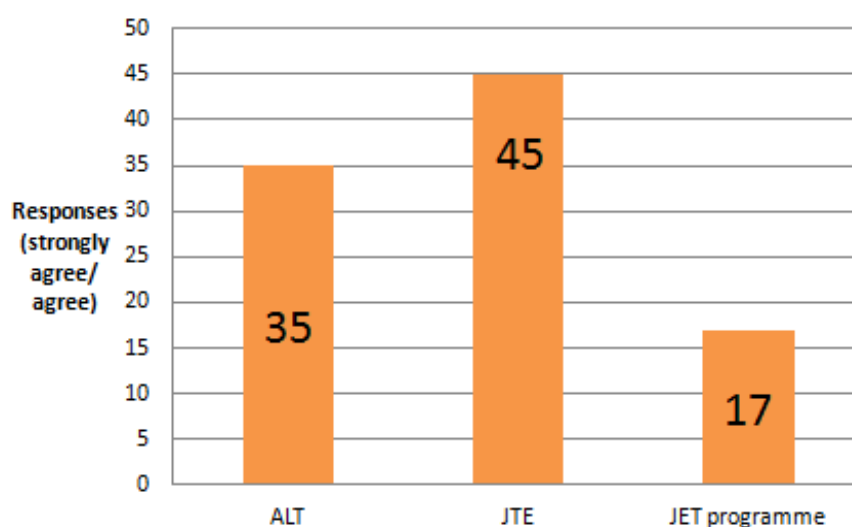


Figure 4

That JTEs expect the textbook to be used more often than ALTs themselves may not be surprising, but the low number of ALTs who perceived that the JET program expected textbooks to be used in team taught lessons could indicate that there is little ‘pressure’ from official channels for textbooks to be used (and therefore content to be integrated) in team taught lessons.

In terms of teaching situations, there are many more possibilities than when the JET program was created in 1987. With so many variables, it may not be surprising that the administering bodies of the JET program provide so few guidelines and expectations for its many participants. But this lack of guidance has implications. One of the earliest complaints about the JET program from ALTs was that they were being used as ‘human tape recorders’ by JTEs and local boards of education that were unsure how to utilize the ALTs (McDonnell, 2000). Four participants in this study also used the term ‘human tape recorder’ to describe at least one of their experiences, two of whom were ALTs as recently as 2005-2006. One participant summarized the situation ALTs find themselves in:

‘The pressure from what the JET program is meant to be and what occurs at the local level must be confusing to local boards of education ... it is often unclear to JETs whether they are there to teach, or learn and experience Japanese culture, or both. This makes for a messy and confusing time for JETs. If a JET can make headway through this heady mix and become a great *sensei*<sup>8</sup>, which only really occurs after a couple of years on JET, (when the participant has a better grasp on culture and language) then English tuition and education improves.’

The many experiences that the participants in this study have had are likely to reflect the variety of experiences of the many tens of thousands of assistant language teachers who have

<sup>8</sup> This is the Japanese word for teacher.

worked in Japan, and still are. I would argue that this variety should be seen as a reason to introduce more clear guidelines about what is expected of ALTs and JTEs in the classroom so that the ‘human tape recorder’ and other more negative aspects of the ‘variety’ of experiences can hopefully be banished, and the many benefits of team teaching can be maintained while giving all parties involved in team teaching a clearer idea of what is expected of them regarding curriculum, collaboration and being culture and language teachers.

### Curricular knowledge

The final way of examining how well team taught lessons are, or can be, integrated into the wider curriculum is asking ALTs about their knowledge of how their lessons fit into the ELT curriculum. The most interesting findings relate to the availability of the curriculum in English, and the effects it has on other areas of knowledge. Figure 5 shows only 45% of respondents thought they had easy access to the curriculum written in English.

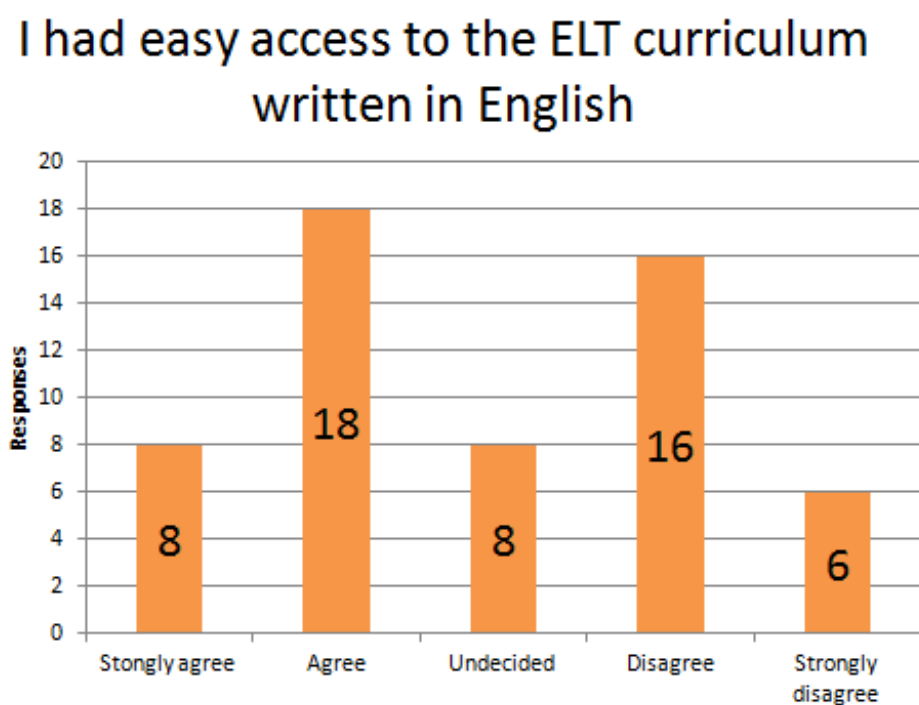


Figure 5

The effect of having access to the curriculum written in English was striking. Figures 6, 7 and 8 show responses to various statements filtered by whether respondents had easy access to the curriculum written in English. Those who did were also more likely to agree that they knew the overall aims of the curriculum for the semester and each lesson, and more likely to agree that they knew what the students were being taught in JTE solo taught lessons; however, even among this group those who agreed that they knew the content of JTE solo lessons were still in a minority (11 responses, 45.8%).

## The overall aims for each term/semester were clear to me

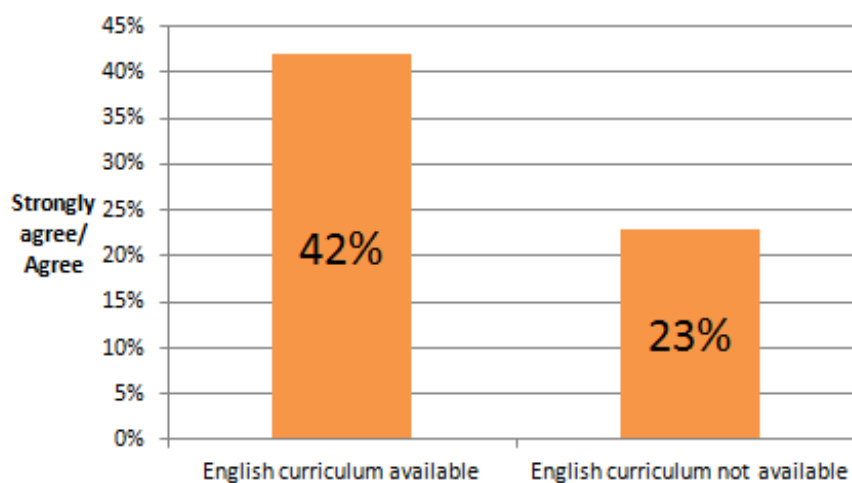


Figure 6

The effects of not having the curriculum available in English are encapsulated by one ALT's experience in an elementary school:

'Toward the end of my time on JET, my 4 elementary schools began using the Ministry of Education text books for 5th and 6th graders. These were by far the most difficult to work with, and had almost no instructions in English for ALTs. All teacher manuals were written in Japanese only. This made it difficult to work with for ALTs with little Japanese ability.'

The apparent lack of emphasis on attempting to integrate lessons is perhaps not surprising. In the case of the JET program, it was created by three different government ministries, is administered by another, and the participants are employed directly by local education boards. There are likely to be difficulties in providing guidelines or advice that can reasonably cover such a vast and disparate program, but that does not mean nothing can be done. Mombusho ensuring that the curricula of all textbooks that it approves and its own course of study are easily available in English would seemingly be of great benefit to ALTs and JTEs alike, particularly for those working at elementary level where the language barrier could be partially overcome by bilingual materials.

## The aims for each lesson were clear to me

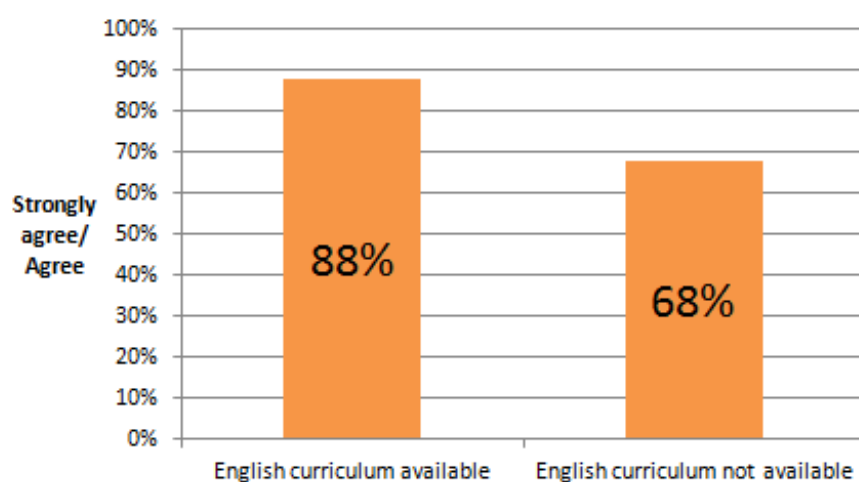


Figure 7

## I knew what the students were covering in lessons the JTE taught alone

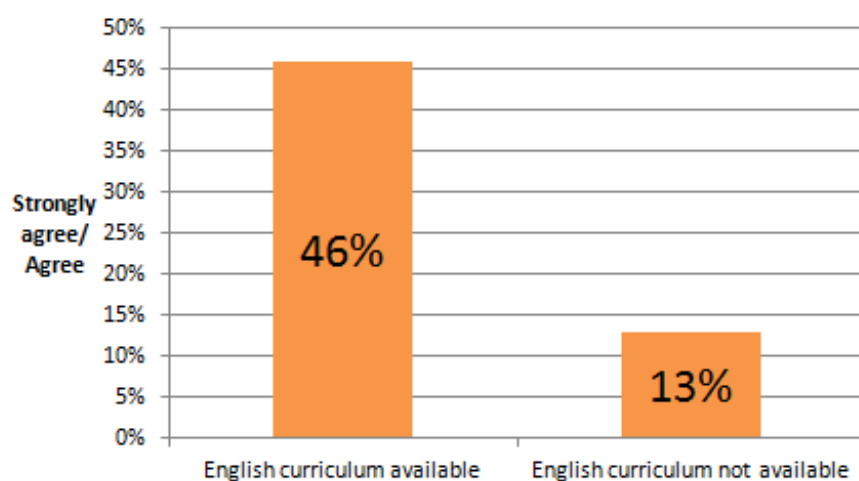


Figure 8

## **Conclusion**

This study set out to examine team teaching in state schools in Japan, specifically the extent to which ALTs and JTEs are able to integrate team taught lessons into the rest of the ELT curriculum. The findings suggest that lessons in junior high schools involve the highest levels of collaboration, and appear to be more integrated into the curriculum than lessons at other levels. Collaboration and integration are also highly dependent on how well individual teachers are able to work together.

This study is limited by the number and identity of the participants. 57 participants are a fraction of the tens of thousands of ALTs who have worked in Japan, and so caution should be taken not to generalize the results of this study too readily. The majority of participants in this study are also ALTs; only one JTE and one former student were interviewed, so this study looks at team teaching from only one perspective. JLTs completing a similar survey about team teaching may give slightly different answers. Team teaching in some form is a daily occurrence for almost all ALTs, who have the opportunity to develop their collaborative skills, whereas it is a less regular occurrence for JTEs, who still deliver the majority of their lessons solo.

If JTEs were to answer this study's survey about their solo taught lessons, there would almost certainly be universal agreement that lessons are always based on the chosen textbook, as alluded to by the JTE interviewed in this study, who confirmed that all JTEs in the two schools he had taught at were expected to proceed through the textbook at a similar pace. If this is the case, and JTEs are expected to always follow the curriculum, then it could be argued that team taught lessons still require further integration into the curriculum, though due to the lingering lack of clarity about the role of ALTs and the dependence of team teaching upon the successful teamwork of its participants, this is probably an unrealistic expectation.

Team teaching in the state education system has expanded not only through more ALTs being placed in more schools, but also into new school levels, particularly elementary level. As this study shows, many ALTs are already engaged in team teaching in elementary schools, and how this evolves in response to the introduction of a mandatory ELT curriculum in April 2011 to elementary schools should be of great interest to educational researchers. This study suggested that ALTs in elementary schools are very independent, and how ALTs will collaborate with elementary school teachers and the new curriculum remains to be seen.

The main conclusion that I feel can be drawn from this study is the need for institutional support from the Ministry of Education and the JET program. In particular, this could be facilitated by introducing materials that are conducive to team teaching. As this study found, materials that are provided only in Japanese are a great hindrance to teachers, particularly at school levels where team teaching is only recently being introduced and the English ability of JTEs may be lower. A curriculum or textbooks that specifically are designed for use by two teachers would also be welcome. It appears that currently ALTs and JTEs are expected to shoehorn their joint lessons into the curriculum, which is not conducive to good integration into the rest of the curriculum. The fact that this undesirable situation still persists after 25

years of such a radical intervention into English lessons in public schools calls into question how serious the Ministry of Education is about team teaching and reforming English language education in Japan.

One final challenge to the success of team teaching is the implications of the recent global financial crisis and the costs of the rebuilding effort required after the March 2011 Tohoku earthquake. Local education boards have already been increasingly turning to private companies that provide ALTs in order to reduce costs, and whether local governments still wish to provide two teachers in a classroom instead of one may be the biggest threat to the continued existence of team teaching. As team teaching was arguably introduced as a result of financial politics, it is ironic that after being accepted educationally the biggest threat to its future may also come from the same source that it sprang from.

The logo for the International Association of Teachers (iafor) is centered on the page. It consists of the lowercase letters "iafor" in a light blue, sans-serif font. The text is enclosed within a large, stylized circular graphic composed of two concentric, slightly irregular arcs. The upper arc is a light blue color, and the lower arc is a light red color, creating a frame around the central text.

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*The Relationship between Support Behavior of Physical Education Teachers and  
Amotivation of Students in Physical Education Activities at Schools*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

The aim of this study is to investigate the relationship between the social support behavior of physical education teachers and amotivation (absence of motivation) of students in P.E activities at schools. This is a descriptive and correlation study which is done as a field study. In doing so, we chose 381 high school students of Boukan city (201 of boys and 180 of girls), to fill out, 1) the questionnaire of amotivation inventory – physical education (AI - PE), and 2) interpersonal behavior scale (IBS). For data analyzing we used the Spearman test of correlation. The results showed that there is a significant but negative relationship between the social support behavior of P.E teachers and amotivation of students in doing P.E activities of schools ( $r = -0.252$ ,  $p \leq 0.01$ ). There are respectively significant but negative relationships between factors of social support behavior (i.e. autonomy support, competence support, and relatedness support) and amotivation ( $r = -0.207$ ,  $r = -0.255$ ,  $r = -0.216$ ,  $p \leq 0.01$ ). According to the fact that, reduction of P.E teachers support behavior may result in amotivation of students, we recommend that teachers should identify the multi-lateral nature of amotivation, and then increase the amount of students social support, to finally improve their participation at school P.E activities.

**Keywords:** motivation, self-determination theory, physical education, high school students

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## Introduction

It is widely acknowledged that the physical activity levels of young people are currently below the levels thought to be sufficient to promote health benefits (Cavill, Biddle, and Sallis, 2001). Studies in industrial countries show that the most intensive education a level of physical activity related to aging, is between the ages of 13 to 18 (Sallis, 2000). The adolescence level is defined as an important period in which individuals either confirm as constant participant in physical activities, or just leave them completely (Murcia, Rojas, and Coll, 2008). One of the basic goals of physical education is to prepare young adults with needed skills, knowledge, competencies and the act of participating in physical activities related to fitness and safety in leisure time (Hagger et al, 2005). However, it is important for children to participate in physical education lessons and courses actively and with a good level of motivation if they want an increase in their physical activities (Ntoumanis, 2005). Sallis and McKenzie (1991) argued that positive experiences of physical education can have influence on children to choose an active life style for the rest of their lives, and also can increase public health in society. Student's belief of their abilities may affect their participations (Ajzen, 2005). In addition, students which have a positive view about physical activities may want to continue such activities (Subramaniam, and Silverman, 2002). Success in such activities may be a cause for students to go on with their participation and being physically active (National Association for Sport and Physical Education [NASPE], 2009). Conversely, students who feel that are not successful in one activity, may not be attracted to physical education and also do not wish to continue their participation (Subramaniam, and Silverman, 2002).

The theoretical structure for studying motivation in physical education that has increasingly been used is self-determination theory. Self-determination theory differentiates between three different kinds of behavioral regulations with different levels of self-determined motivation: intrinsic motivation, extrinsic motivation and amotivation (Ntoumanis, 2005). Whereas both the intrinsic and extrinsic motivations show different degrees of volition; however, amotivation represents the absence of motivation. Amotivation is evident when individuals have no intention and tendency to participate in a special behavior. This, often, is a result of incompetence and uncontrollability, leading to be dropped out from physical education and even schools (Ntoumanis et al, 2004). It is argued that different kinds of motivation are affected by several social factors (Vallerand, and Losier, 1999; Ntoumanis, 2001). Deci and Ryan (1985) indicated that those social factors which increase the perception of competence, autonomy, and relatedness, may promote the self-determined behavior (intrinsic motivation), whereas, those social factors that weaken this perception, may promote the amotivation behavior.

In sport field, coaches' behaviors and interpersonal style have an important role not only in athletes' performances, but also their mental and psychic experiences. Self-determination theory shows that a coach behavior can be seen in two interpersonal styles: autonomy-supportive and controlling style (Bartholomew, 2011). Studies sustain this claim that athletes' conceptions about their coaches' different behaviors, are consistent with their motives (Amorose, and Butcher, 2007). For example Amorose and Horn (2000) showed that athlete student's perceptions from their coaches' leadership styles, which insisted on training and instructions and were high in democratic behavior and low in autocratic behavior, have shown higher levels of internal motives.

This means that coaches' behaviors have influences on athletes' perceptions of competence, autonomy, and relatedness feeling, which affect athletes' motives (Amorose, and Butcher, 2007). Shen et.al.(2010) also showed that a decrease in physical education teachers' social support of students can act like an important factor in students' amotivation.

Realizing the various aspects of amotivation in physical education is not only important theoretically, but also practically. Amotivation in participating in physical education can have important effects for public health of society (Cavill, Biddle, and Sallis, 2001). Beside, in developed countries where physical education is mandatory up to a certain age, it is not a choice to leave sport at once (Spray, 2000). The motivation of teaching physical education is rarely measured according to the self-determination theory, and despite its promotion, a few number of its motivational characteristics, especially those related to teachers and students of physical education, are investigated (Spittle, Jackson, and Casey, 2009). However, the important point here is that there are few studies about amotivation or loss of motivation. It may be concluded that it is difficult to observe amotivation in sporting field because of the fact that amotivated individuals may not participate in sports at all. Thus, if during sport courses, the amotivation increases gradually, they may leave participating in such activities voluntarily (Ntoumanis et al, 2004). So, realizing the fact that motivational processes can identify whether children look at the physical education as a worthy and pleasing experience or as a boring and worthless one, is of a remarkable importance.

## Method

*Participants:* The participants were 381 high school students (Mean age = 16.72 years old; SD= 0.87; range = 15-19 years old) from different high schools in Boukan, West Azerbaijan, Iran.

*Amotivation in Physical Education:* The Amotivation Inventory-Physical Education (AI-PE) (Shen et al, 2010) was used to examine students' amotivation in physical education. The AI-PE consisted of 16 items. The participants responded on 5 points from Likert-type scale (from 1 = does not correspond at all, to 5 =corresponds exactly). In this study, Cronbach alpha for the Amotivation Inventory-Physical Education were 0.90.

*Teachers' Social Support:* The Interpersonal Behavior Scale (IBS) (Pelletier et al, 2008), being composed of 12 items, was used to assess teachers' social support that measuring the three subscales: autonomy support, competence support, and relatedness support. Participants were asked to rate, from 1 to 5 on a Likert-type scale, the degree to which their teachers behave as depicted in the items (from 1 = never, to 5 = always). In this study, Cronbach alpha coefficients for the autonomy support, competence support, and relatedness support were 0.72, 0.77, and 0.73, respectively.

*Procedure:* Before data collection, a panel of experts evaluated both instruments and translated them into Persian in order to establish both face and content validity. And then after taking needed justifications, the questionnaires were distributed in high schools (5 girlish, 5 boyish).

*Data Analysis:* Cronbach alphas were calculated to assess the internal reliability of each sub-scale. The correlation among variables was examined by Spearman's correlation coefficient.

## Results

Means and standard deviation of variables are shown in table 1. Among the subscales of social support, competence support had the highest mean value. Relatedness support and autonomy support had the second and third values, respectively. The results of descriptive statistics showed that, in general, amotivation score was low.

**Table 1 Descriptive Statistics of variables**

Variable	Mean	SD	Range
competence support	3.37	1.10	1-5
autonomy support	2.95	1.11	1-5
Relatedness support	3.20	1.08	1-5
Social Support	3.18	0.99	1-5
amotivation	1.81	0.80	1-5

The correlation test of the variables is illustrated in the Table 2. The results of Spearman correlation test indicated that there was a significant and negative relation between social support behavior of physical education teachers and amotivation of students ( $r = -0.252^{**}$ ).

**Table 2. Correlation between Teachers Social Support and students' amotivation**

Variable	Amotivation
Social Support	-0.252**

\*\* Correlations are significant at  $P < 0.01$

Also there were a significant and negative relation between social support subscales and amotivation (Table 3).

**Table 3. Correlation between subscales of Social Support and Amotivation**

Variable	Amotivation
competence support	-0.255**
autonomy support	-0.207**
Relatedness support	-0.216**

\*\*Correlations are significant at  $P < 0.01$

## Discussion

The aim of this study was to investigate the relationship of physical education teachers support behavior and students' amotivation in physical education activities of schools. According to study results we can say coaches have an important effect in athletes' motivation. Feedback from coaches may affect athlete perception of competency, autonomy, and relatedness (Vallerand, 1997). Study results show a significant but negative relationship between physical education teachers social support behavior and students' amotivation. This can be because of different aspects of interpersonal climate and students' perceptions about the need for support (Vallerand, 1997). This fact shows us students may become amotivated of participating in schools physical education activities because of various reasons, and teachers social support behavior decreasing acts like an important factor in students' amotivation. Thus with an increase in physical education teachers social support behaviors from students, their amotivation in physical education activities decreases.

Results also show a significant but negative relationship between autonomy support and amotivation. Autonomy support has effects on intrinsic motivation. Students in physical education, who feels autonomy for their activities, are more internally motivated (Hassandra, Goudas, and Chroni, 2003). Choice right and feeling confirmation may improve self-initializing feeling, provides satisfaction for need autonomy. Physical education teachers can make the opportunity for students to act independently and be creative. Such views may lead to positive results and decrease students' amotivation. According to the fact that teachers are the most leading factors who can receive information from students and support their capabilities in schools, then more companions between teacher and student is vital for improving students' motivation (Shen et al, 2010).

Results say that there is a significant but negative relationship between competence support and students' amotivation. According to the fact that teachers are the most important factor to receive information and support students' abilities in schools, thus more interaction between teacher and student is vital to increase and grow students' motivation (Reeve, 2002). Mageau and Vallerand (2003) showed that the act of teachers may be one of the necessary motivational effects in sporting places. The loss of required information and instructions related to activities can put the students' need of competence into risk and result in amotivation (Reeve, 2002). If teachers focus on students' efforts and their own capabilities and also evaluate them according to the past performance, then they can promote the competence experiences (Bieg, Backes, and Mittag, 2011).

There is significant but negative relationship between relatedness support and students' amotivation. Students' perceptions of teachers' improper supportive behavior have relation with their feeling about less relatedness with teachers. Students under compulsory supportive methods, feel less sympathy from teachers (Reeve, 2002). Relatedness noticed as an important stimulus for interaction, which is a key structure in motivation. Relationship between teachers and students mean acceptance, respect, and an attention feeling (Bieg, Backes, and Mittag, 2011). Therefore students, who feel their teacher ignores them, are more likely to have doubt about their abilities.

It is surprising to see such students' participating in physical education activities (Shen et al, 2010).

Biddle, et.al. (1995) stated that a different style of teaching, in which students have a range of options, has the positive reaction of students about sporting activities. Thus, we can reduce the amotivation of students with diversity in sport lessons of schools, having the ideas of students about their favorite sports, giving more freedom in selecting the kind of sport, expectations equal to students' abilities, and not imposing the teachers' preferences to students.

Amotivation is a complicated phenomenon and is consistent with wide social fields students are in. Teachers, parents, and peers are important social partners and each of them may have unique effects on students' mental and cognitive development. In respect of the fact that amotivation has a multi-dimensional nature, students' amotivation in physical education activities can be because of other factors than physical education teachers' social support behavior, which must be investigated in future studies.

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*An Action Research Study to Foster Critical Thinking in an Indian Ismaili  
RE Classroom*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

This article is an account of a small scale qualitative action research study intended to investigate the development of critical thinking skills within an Indian *Ismaili* RE context (Mumbai). In the midst of the narrative, it problematizes some of the stark realities of classroom research, with regard to contextual and logistical challenges. It thus serves as an insightful source for a first time teacher-researcher to understand the nuances of classroom research. The study also highlights the crucial variables which one needs to consider while planning, implementing and reporting a small scale research study. In terms of the focus of the research study it elucidates some of the conceptual complexities of critical thinking given the fact that it has become the 'buzz word' (Fisher, A, 2001, p.1) in education circles. At the same time it argues that, although skill development has been an overriding educational aim, it is a time and resource intensive endeavour, which requires sincere commitment not only on the part of the teacher but also for the institution involved.

**KEY WORDS:** critical thinking, action research, problem based learning, classroom research.

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## 1. INTRODUCTION

If one were to ask for an indicator of being educated in the 21<sup>st</sup> century, it would not be surprising to get the response, '*ability to think critically*'. Bailin and Siegel, (2003 cited in Abrami et al, 2008, p.1102) argue that "*critical thinking is often regarded as a fundamental aim and an overriding ideal of education*" (p. 188). As expressed by Moon, (2008) in the introduction of her book "*Critical Thinking*", she suggests that enabling students to become critical thinkers has been the absolute goal of higher education in recent years. However, one would also want to argue that it has been an expected outcome of education by various stakeholders in society.

On the other hand Critical Thinking (CT) is not only richly grounded in theory, but it is a theoretical response to a world in which students are increasingly interconnected, exposing them to a pluralistic world of knowledge. Thus, demanding that education should enable the students to explore alternate versions of truths that they encounter. Or one would expect it to create a future generation of individuals who are not only equipped to think, but also have the ability to think for themselves in relation to others (Kennedy, 2004).

This research is an attempt to investigate and develop an understanding of the concept of CT in the light of the overwhelming hope that the development of CT has risen for the future of education. Thus, as part of the MTeach research work I undertook this action research study to foster critical thinking within the context of Ismaili<sup>i</sup> Religious Education Centres (REC<sup>ii</sup>) of India.

### 1.1. Thesis and Hypothesis

The study was planned as an investigation to examine the development of critical thinking skills among Ismaili students attending religious education classes in Mumbai, India. In doing so the study involves using problem based learning (PBL) as a key approach. As it was assumed that problem based learning approach will promote critical thinking and this can be gauged by the analysis of student talk and work.

### 1.2. Situating the study within the context

The research study was part of the two-year MTeach course for Secondary Teacher Education Programme (STEP<sup>iii</sup>). The students who attended the REC were girls and boys, aged between twelve and thirteen. The research practicum was reduced to a mere eight classes (of an hour and half each) over a period of four weeks, contrary to the planned six weeks practicum. The class was earlier taught by another teacher, while I entered the classroom as a teacher researcher. The secondary RE curricula comprises of various modules, designed by *The Institute of Ismaili Studies*<sup>iv</sup> for the religious education of the students of the Ismaili community globally between the ages of 12-16 years. Based on the premise suggested by Splinter and Sharp (1995) CT approaches provides an ideal context to deal with ethical issues, I choose the Ethics and Development module (*One Earth Many hopes*). It introduces students to plethora of challenges faced by humanity at large and inspires them to respond to these issues within the ethical framework of Islam. The change of Curricula from *Muslim Literature* to *Ethics and Development*, as well as the change from the host teacher to me as a teacher-researcher undoubtedly had an influence upon the

students. These challenges might have influenced: the dynamics, as well as the interaction within the classroom, thus possibly affecting the outcome of this research.

## 2. LITERATURE REVIEW

As discussed earlier, CT has lately received unprecedented attention in the field of education, leading to copious literature in the form of debates, discussions, varying theories and experiments about CT (Papastephanou and Angeli, 2007). One would also argue that CT isn't a new concept; however, the bulk of research based on practice raises the hope that advantages of teaching thinking can be turned into reality (Fisher, R., 1999). Given this trend, one needs to then begin by reflecting on some of the important questions like: *"What is CT? How does CT relate to the process of learning? Is it one activity or a number of activities? How do learners learn the ability to think critically? What are its implications for Pedagogy?"* (Moon 2008, p. 5). Even though these might be valid questions, due to the limited scope of the paper, we will broadly examine some of these themes.

### 2.1. Defining critical thinking

In the process of defining CT one comes across the challenge faced by practitioners and researchers alike, as it is a very complex and controversial notion which cannot be limited to a fixed definition or understanding (Moon, 2008). Thereby, we can begin by exploring some of the definitions given by key figures in this field. John Dewey, 1909 (Cited in Fisher, A., 2001, p.2) who is considered to be the father of modern CT discourse defines it: as an active and reflective process in which one thinks for oneself by raising questions, with careful consideration as well as forming one's beliefs on the basis of appropriate reasons. This idea of learning is contrary to the one in which an individual is engaged in a passive and unreflective thought process.

Similarly Edward Glaser, 1945 (Cited in Fisher, A., 2001, p.3) defines CT as an *"attitude or disposition...and the ability to apply the methods of logical enquiry and reasoning, with some skills in applying these methods"*. Although his ideas are similar to Dewey, it accentuates an important debate in the CT tradition about skill versus disposition. Lately, scholars in this tradition have acknowledged that CT cannot be a mere teaching of skills, it is also important that individuals develop the dispositions to look at the world through a critical lens. Thus stressing that critical thinker not only has the ability (the skills) to seek reasons, truth, and evidence, in a given situation, but also that he or she has the urge (disposition) to seek them (Burbules and Berk 1999). For instance, Ennis, 1996 (Cited in Mason, 2008) emphasises that for a person to be a critical thinker he or she should not only seek reasons and try to be well informed, but also have the tendency to do such things. Siegel, 1990 (Cited in Mason, 2008) critic's Ennis because, according to him he simply considers dispositions as something that stimulates the skills of CT. Thereby not differentiating adequately the critical thinker from CT. For Siegel, a disposition to CT is more like an intrinsic trait.

Paul, 1983, p.23 (Cited in Burbules and Berk, 1999) also stresses this distinction between skills and dispositions and explicates the same through the distinction between *"weak-sense"* and *"strong-sense"* while defining critical thinking. According to him the *"weak-sense"* means that an individual has learned the skills and can demonstrate the same only when asked; the *"strong-sense"* means that it has become part of an individual's consciousness and thus constantly re-

examines his/her own assumptions . With regard to this study, both the views are considered on the premise that they are inter-related as oppose to being two distinct things, which is also a stand taken by most scholars.

The other vital theme in the Critical Thinking literature has been the extent to which CT is a generalised ability or disposition in contrast with CT being content-specific ability and disposition. John McPeck, 1981(Cited in Mason, 2008), advocates that it is content-specific; however, there are others who consider it to be generic in nature. It is an important issue as it defines how one approaches and facilitates CT. From the point of view of this study, the research is based on the definition of CT proposed by Moon (2008, p.33) who suggests that CT is, “...an aspect of the activity of thinking. It is a form of learning in that, it is a means of generating new knowledge by processing existing knowledge and ideas using what we have called tools of manipulation of knowledge (e.g. analysis, understanding, and synthesis)”.

## **2.2. Research on critical thinking**

Exploring the research and practices on thinking skills programmes, Cotton (1991), suggests that it leads to a positive shift in the students’ achievement level. While the author also explicates research findings pertaining to whether it is beneficial to teach thinking skills to students via infused programs or separate curricula? The findings reported imply that although there is sufficient data to support both the approaches, it can be indicated that either approach can be effective. With regard to the time required for the thinking skill instruction, she reports that this has been one of the uncertain areas. This can be attributed to the limitation of a research design as well as most research can hardly focus on the time question implicitly (Cotton, 1991). To conclude, one can argue that on the basis of theoretical and research evidence, providing students the opportunity to develop thinking skills is important for several reasons: these skills are vital in this rapidly changing world, it enhances intellectual growth, and promotes academic achievement and most significant of all is that it shifts the focus from “‘knowing how’ rather than ‘knowing’” (Ryle, 1949, cited in Fisher, R., 1999, p. 53). Irrespective of all the benefits one also has to be mindful that, it is not a matter of simply imparting certain skills.

## **2.3. Problem based learning**

As stated by Baden and Major (2004) PBL has emerged as a relatively recent educational approach, especially being widely popularised by the work of Barrows and Tambylnin, 1980 (Cited in Baden and Major, 2004). However having explored the literature one would want to agree with Walton and Matthews, 1989 (Cited in Baden and Major, 2004) that there isn’t any fixed definition of what PBL is and what constitutes PBL. One can consider it to be a general teaching strategy or a pedagogical approach or a philosophy. With reference to the study, it is used as a pedagogical approach as well as a general teaching strategy. Although the originators of PBL were medical educators, they did acknowledge the fact that there are different perspectives in understanding the way people learn and hence came up with an approach which is based on a whole range of theories for learning (Baden and Major, 2004). Thus one of the reasons for selecting this approach was the premise that it supports the constructivist approach to learning which is part of my own teaching philosophy.

Pithers and Soden (2000); Baden and Major (2004), highlights that PBL seems as a promising approach for developing CT. As students are required to determine what the key issues within the given problem are then thinking of different ways to resolve the problem and later evaluating and applying ways to find the solution which may not be merely one. On the other hand, it also supports the basic premise of constructivist approach that new knowledge has to be introduced with reference to students existing knowledge as it allows, the scope for knowledge construction (*Camp, 1996, cited in Baden & Major, 2004, p.30*).

However, one cannot ignore the challenges in implementing PBL. Based on the various challenges which Baden and Wilkie (2004), suggest through extensive research evidence, one has to be primarily aware that the content in PBL and the ability/ skill required are different things. Furthermore one needs to acknowledge that the overwhelming shift in the learning environment as well as the multiple roles and responsibilities expected, can be a source of many challenges for the student and teacher thus needing utmost attention and consideration. Moreover, Silver (2004), states that, there is minimal research conducted outside medicine and gifted education. Thus studying this approach within an Indian REC context was a step towards an investigation into a new area and context to make a unique contribution to the existing body of knowledge.

### **3. RESEACRCH METHODOLOGY**

In order to overcome some of the contextual challenges and limitations of a small scale study the approach of a qualitative study using the action research approach was chosen. The action research approach was also an opportunity for reflecting and improving my own practice, as well as a means to work within the constraint of time and the complexity of real world experiences. The study was based on Lewin's model of action research. As described by Kemmis et al (2004), the Lewin model of action research can be described as a process of spiral steps. Each of which consisted of planning, action and the evaluation of action. It was cyclic in nature i.e. the evaluation of action enabled me to plan the next step, which in my case was each new class.

Further, this approach provides an opportunity to alter things and allows one to bring change in their class as per the need of the hour. However, through implementing this approach it was experienced that one can get carried away at times by focusing more on the practice as compared to creating a balance between teaching and researching. Indeed one would want to consider it as an important challenge for further reflection. Moreover, the scope which action research allows has posed the challenge of generalizability of the findings, which is further aggravated due to the higher influence of context variables. Yet, one can argue that although action research findings cannot be used to make grandiose claims, it allows an opportunity to explore ideas from the existing theories, implement and evaluate their relevance and add to the existing body of knowledge (Denscombe, 2007).

#### **3.1. Ethical issues**

As proposed by Robson (2002), it is important that at an early stage of one's research planning, there is a substantial level of thought given to the ethical aspects pertaining to the research study. Reflecting on this with regard to this study I had carefully considered the following: Obtained student and parental consent and oriented them regarding the research study. The students were also allowed to opt out from the study. While an effort was made to create a conducive

environment as first time experience could have been demanding. Most importantly the study ensures to maintain anonymity and confidentiality of students, throughout the research process and reporting.

#### **4. DATA COLLECTION METHODS**

A range of data collection methods were used to capture and analyse student interaction as well as the teaching and learning processes taking place. This also enabled to gauge students' ability to think critically. Moreover, the use of multiple sources of data allowed triangulating the findings, thus adding rigour to the research (Robson, 2002).

##### **4.1. Classroom observation**

Given the limitation of audio recording in research context, classroom observation was the primary source of data collection, as it allowed capturing the entire classroom interaction and processes. On the other hand observation data are sensitive to the context and do reflect strong ecological validity (Cohen, et al, 2007p.396). It also lends scope for a qualitative researcher to capture the dynamic and complex events as they unfold, given the presumption that they are seeking to gather trends and patterns over time.

The observer was expected to:

- a) Keep a detailed written record of the classroom interaction of three students whose case-study we wanted to develop.
- b) While, also capture those teaching learning moments which mirrored students' response to critical thinking opportunities.
- c) Furthermore, she also provided me with feedback about my teaching which enabled me to review and modify my teaching as an action researcher.

To achieve these outcomes through observation process and to overcome lack of clarity and knowledge about the focus of observation between the teacher and the observer (Wragg, 1999) two observation tools were planned and developed. These tools also provided the scope to make the observation more focused and objective. The first observation tool captures the 'critical incidents' in the classroom. "'Critical incident' (Flanagan, 1949 cited in Cohen, et al, 2007, p.404) or 'Critical event' (Wragg, 1994 cited in Cohen et al, 2007, p404) are events or occurrences that might typify or illuminate very starkly a particular feature..." Wragg (1994) also suggests that these are events which can offer important insights and require greater detailed recording. With regards to this research study the observer focused on events which could provide insights on students' ability to think critically. Similarly, second observation tool was designed with a purpose to capture student talk on set criteria of only students who formed the subjects of my case study. Further, the intention of the second observation tool was also to record some aspect of my teaching, in regards to my facilitation and questioning skills which enabled the development of students' CT.

## **4.2. Self-reflection and Field notes**

Primarily, my personal reflection was used to plan my lessons for the following class and recognised it as a supporting evidence for some of the insights which I would gather from my classroom experience. The reflective journal was in the form of a 'vignette' (Daly, 2009), a narration of some critical events in class, which allows one to pose some vital questions about their teaching and the research study. The challenge experienced while reflection was to create a balance between the role as a teacher and a researcher. On the other hand, field notes help in creating more detailed reflections as well as helped in filling the gaps and loop holes from other methods, as they are short notes made when something interesting and important is noticed or experienced (Kemmis et al, 2004).

## **4.3. Student work**

Due to the constraints posed in implementing the planned data collection methods (case study and focus group), as a supplementary method student work was used. The student work included the individual student activity sheets as well as collective work created by the students as and when any activity was introduced. The student artefacts helped further explicate some of the findings.

## **5. RESEARCH FINDINGS AND DISCUSSION**

This section discusses the research findings based on some of the critical incidents which occurred during the span of seven classes. These critical incidents were chosen and analysed because they illuminated aspects of research focus. In order to triangulate the data relevant sections for the same incident from classroom observation tool, excerpts from self reflection and artefacts of student work and field notes were examined to gain insights. As suggested by Cohen et al (2007), in the process of reporting and analysing the data one needs to be conscious of the fact that qualitative data can be presented in varied ways and allows for scope of multiple interpretations. Below outlined are research findings, summarised based on the common themes emerging from the analysis.

### **5.1. Contextual implication and data collection methods**

The research study spanned over a period of seven classes. Each class was for duration of an hour and a half, however due to the issue of student punctuality, the effective teaching learning time available was only an hour. Thus, it is important to be mindful of the fact that it was a research study based on mere seven hour of teaching learning experience. Also these variables (duration, time and span) can pose a severe challenge in the process of implementing any small scale classroom research. Added to this was the fact that the teacher researcher was entering into the classroom in Mumbai for the first time. Nevertheless, despite the contextual and logistical challenges of reduced contact time and inconsistent student attendance and challenges of implementing all the data collection methods, the results do reflect the perspective of the observer, teacher and the student on any given point and thus has some element of triangulation. Nevertheless, it is essential to carefully consider issues of validity and objectivity as stressed by Cohen, et al (2007).

Before commenting along these lines it is important to consider some of the limitations of classroom observation as a method. Despite overcoming some of the challenges of classroom observation, the research study was affected by a few key challenges. Firstly, the observer and I were unable to complete the data tools on an ongoing basis due to unforeseen logistical and contextual challenges. Thus all the data transfer into the observation tools was done at the end of the research study. Having scrutinized this further I did identify that the observation tools were too sophisticated to adapt in the stated research context. Thereby, highlighting the need as a researcher to run a pilot study of the same before actual implementation.

The data was mainly transferred in the critical incident sheet which was filled for the incidents that were considered to be important by the observer and me. This raises the question of how objective we were in selecting the data for inclusion. Although this approach of narrating critical incidences has been very helpful and is a primary source of data, one needs to realize that the meaning which an individual derives at a given point of time from a particular critical incident might change over a period of time. In other words, there exists the possibility of multiple interpretation of a critical incident not only by two different individuals but also by the same individual at different times (Daly, 2009). In that case self reflection, field notes and student work have been an important source of supportive evidence.

Secondly, classroom observation as a main data source contains contextual and logistical challenges. This study highlights that although it is an eyewitness account of what happens in a classroom, many a time it fails to capture the motive behind the incident. Furthermore, it also overlooks certain contextual information which can affect the data. As well as one has to be sensitive to the fact that it's impossible to entirely fade away the presence of the observer (Wragg, 1999). Finally, as a researcher I also acknowledge that the study was in some measure unable to establish clarity for the observer with regard to key indicators of constructs or concepts being studied, which is crucial for ensuring the validity and reliability of the findings (Cohen et al., 2007).

Based on the finding one can argue that this research study has been able to provide some key critical incidents on students' thought processes and response to PBL as an approach to enhancing critical thinking. The data provides scope for meaning making, without leading to or supporting any major claims about critical thinking in an Indian RE context. At the same time one could argue that the duration of the study was too short to even gauge the student thought process. Thus in order to enhance and nurture student ability to think critically and to capture CT processes it would take a longer period of time. Although, a fruitful attempt in some sense, the study was barely able to lead the students to question and re-question their own understanding and allow scope to learn, unlearn and relearn, a learning outcome recommended by Stoll, Fink and Earl, (2003).

## **5.2. Complexities of critical thinking and problem based learning approach**

In terms of critical thinking as a concept I would want to begin by reiterating some of the discussion regarding, varied conceptual traditions which have arisen with regard to the understanding of CT as a skill, attitude or disposition. I had considered the argument that it is inter-related as compared to being two distinct things i.e. skill and attitude. Retrospectively thinking about the same with respect to the research study then I would argue that it is both; however, I would also add a third element which is ability. Through my study as a teacher I could

contend, which I may not be able to support with evidence, is the fact that my students had the ability to think critically. However, I realised that they lacked the skills to utilize this ability for thinking critically. Thus, as part of my study I tried to develop their skill, which could unleash their ability and further develop their disposition or attitude for thinking critically.

As a teacher as well as a researcher I realised that there is another aspect of critical thinking which although I had questioned in the beginning of my literature review but not considered while planning the research; was the students' understanding of their own thinking, or what one would consider as 'meta learning'(Watkins, 2001). It is clearly evident through the critical incidences that I could gauge that the students limited their thought process at the level of comprehension. Therefore, before engaging the students towards enhancing their CT skills, as a researcher it is important that we enable them to become aware of their learning pattern. This would also allow the scope to make them feel involved into this process, thereby leading them to identify the need to think critically. Thus, recommending meta-learning as the first step in the process of nurturing CT skills. One way of achieving this and finding data on this aspect as a researcher could be through student reflection.

Additionally, reflecting on the definition of CT mentioned in the literature review one can argue that the teaching-learning experience generated during the research study did engage the students in the process of knowledge construction. However, their ability to implement the tools of manipulation was only gauged in terms of understanding, which too was in question in some activities. It further raises some of the complex and critical questions such as; how is CT related to learning? Did the learning still take place? If students aren't thinking critically then do they still think?

Similarly with regard to PBL as an approach one of the key issues which one needs to consider in any future study within similar context is about the challenges the joint problem-solving activity poses. Especially when each individual involved is at a different level. In this research, although students were engaged in the joint mental effort to create knowledge, the amount of contribution from each student was varied. In that case how do you as a researcher have an account of individual student learning and growth? Moreover it is an activity which demands a lot of maturity, as it involves people to respect each other's ideas and space and at the same time ensure that the process is not taken over by dominant students, ignoring the students who are passive. Thus, once again raising the question about, how do we equip students to learn about their learning? As well as, how do you assist students to handle different roles necessary for them to undertake in the process to learn? As a researcher, it is important to think about the social skills which students might need for effective group work, while planning a research.

In addition to this the other concern which did surface during the research study was the dichotomy in education between process and content. One would argue that in the case of CT although the process is at the forefront it doesn't deny the role of content. As a researcher and teacher there was an acknowledgement at my end that the process without content is meaningless. Thus, the research was focused on working towards utilising the scope, the content, or syllabus allowed for implementing the PBL approach (Splinter & Sharp, 1995). However, in the two activities it was realised that it was too early to introduce PBL tasks without students having enough background information to discuss the topic.

Furthermore, having witnessed the challenge students had to comprehend the content raised an important question: should students thinking be knowledge dependent? One possible response could be that, on a logical basis one can argue that to think critically one needs to have something to think. For example, if the students have to think of X, they need to have a firm knowledge base of X to think about. Its immediate counter argument could be that, if this was the case then students would never learn abstract concepts without concrete knowledge (Splinter & Sharp, 1995). On the contrary one would want to argue on the basis of the idea of Zone of Proximal Development proposed by Vygotsky, (1962, 1978 cited in Moore, 2000). He argues that students can attain a level of intellectual performance higher than the actual performance if provided with the appropriate forms of assistance. However, one would still want to argue that to move from the position of where you are now and where you can be, one does require a minimum amount of knowledge and skills i.e. one has to move from A to B (Splinter and Sharp, 1995). Thus, as a suggestion for future research one may want to consider developing students thinking skills initially using the content in which students have some degree of proficiency.

## 6. CONCLUSION

To conclude in terms of the research question, the study could hardly accomplish any substantial findings that could be used for speculating with regards to student's ability to think critically. However, the research has enabled to elucidate some key aspects about the nuances of the research context and data collection methods one needs to consider before embarking on their research project. It also provides some of the insights gained as a researcher on critical thinking and PBL as concepts, at times making necessary suggestions for someone interested in considering these as their research focus, within the Indian RE context. On the other hand the research study enables one to become cognizant of the fact that skill development is not an overnight process; rather it is a complex task and requires a lot of rigour and commitment. One would also want to make a judicious decision with regard to how far one can get involved with skill development, without compromising the implementation of the curriculum.

Having provided the glimpse into the challenges of the research study and making suggestions at different junctures during the paper, it would be worth concluding with the thought that '*Change is a process, not an event.*' (Fullan, 2001).

## ENDNOTE

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<sup>i</sup> A Shia Muslim Community visit official website <http://www.theismaili.org/>

<sup>ii</sup> Religious Education Centre , name for RE class within an Indian Ismaili RE context  
<sup>iii</sup> [http://www.iis.ac.uk/view\\_article.asp?ContentID=106627](http://www.iis.ac.uk/view_article.asp?ContentID=106627)

<sup>iv</sup> [www.iis.ac.uk](http://www.iis.ac.uk)

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The logo for the International Association for the Advancement of Pedagogical Research (iafor) is centered on the page. It consists of the lowercase letters "iafor" in a light blue, sans-serif font. The text is enclosed within a large, stylized circular graphic composed of two concentric, slightly irregular arcs. The upper arc is a light red color, and the lower arc is a light blue color, matching the text. The overall effect is a large, faint watermark-like logo.

*Online TESOL Programs: Trends, Benefits, and Challenges*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

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## Introduction

English, as a global language, has become a powerful social, linguistic, and economic agent (Hall & Knox, 2009). As the most commonly spoken second language (L2) in the world, this positioning imposes high demands for effective training of teachers of English as L2 (a.k.a., ESL) or a foreign language (FL; a.k.a., EFL). In addition, the advancement of technology has created an ever-shrinking “global village,” increasing the significance of learning English while also producing an historical precedent in concerted efforts to increase English language learners’ (ELLs) proficiency. Teaching English to speakers of other languages (TESOL) goes hand in hand with this socio-global trend, which requires a new form of learning that adds a new layer of complexity to educational services. Furthermore, the clientele of educational services has expanded from the local to the international and from full-time students to nontraditional learners already in workforce. In response to these shifts, the delivery of TESOL content has transitioned from traditional face-to-face classrooms to “hybrid” and online/distance education formats<sup>1</sup>.

The purpose of this paper is to critically review the current global demand of TESOL and the rewards and challenges that accompany this demand. First, the transition from face-to-face to distance learning will be discussed from local and global perspectives followed by a review of the Teacher Education Standards of TESOL from state governing and accreditation bodies. The review will be followed by a discussion of the advantages and rewarding aspects of online TESOL programs in respect to global outreach and opportunities for interactional communities that encompass researchers and practitioners (Nunan, 2002). Next, challenges associated with distance education will be examined from multiple points of view that include perspectives from learners, instructors, and institutions. Finally, commonalities and differences in English as L2 and English as FL contexts will be examined.

## Transitioning from Face-to-Face to Distance Learning

There has been a gradual shift in the delivery mode of classes from traditional face-to-face to hybrid and/or distance learning in higher education in the USA. At the onset stage of distance learning, nontraditional learners whose work schedules interfered with face-to-face class times were targeted. Traditional students, however, gradually became part of the demographic make-up of distance students when they saw the benefit of having both on-campus and online classes available to them especially when traditional courses they wanted were full (Swan, Shea, Fredericksen, Pelz, & Maher, 2000).

The driving force behind the shift in course delivery mode was based on 1) the availability of technology, 2) the desire for a fast-paced information cycle and accessibility to new educational content, and 3) flexibility of course delivery. First, the surge of online classes hinges on the availability of technology that allows for synchronous and asynchronous virtual classes. Most post-secondary or higher education institutions in the U.S. use Blackboard or a similar platform as an online learning environment, which provides various features of learning modules and workspaces. With the availability of this online platform, rarely do traditional classes only utilize face-to-face communication as most classes employ Blackboard in one way or another, resulting in hybridity of e-learning and classroom coursework. Many instructors of face-to-face courses not only post their syllabi and other course materials on Blackboard one or two weeks prior to the class start date so that students have a sense of the course, but instructors also use

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<sup>1</sup> In this paper, distance learning and online education are used interchangeably.

Blackboard throughout the term for assignment submission, quizzes/exams, and extended discussion.

Secondly, with the 21<sup>st</sup> Century expectation of a fast-paced cycle of information and knowledge, there is the requirement for frequent updates on content knowledge. Individuals in the hypermedia era are also more able and likely to respond quickly to the constantly evolving technology and information available. In addition, with frequent updates, students' learning new technologies and learning tools as well as keeping abreast with the newest version of information are difficult to achieve in the traditional face-to-face class format if there is not an aspect of hybridity (e-learning or technology) involved. In essence, turnaround time on new information and technology innovations require the very technology that makes the cycle fast-paced, which is not found in the traditional classroom setting.

Thirdly, the flexibility of online classes makes life-long learning easier than other class formats. The accessibility and flexibility of online classes create a wide clientele of educational consumers who are not restricted by geography. Online delivery transcends time zones and localities in which nontraditional learners reside, reinforcing "anytime, anywhere" access to knowledge. The demographic of online class takers mirrors the trend of "life-long learning." Online class takers are typically older than traditional face-to-face students, and have work or family obligations (Deka & McMurry, 2012). Online delivery is an excellent option for those who have responsibilities other than school work, and online learning is an avenue that allows them to overcome situational barriers such as job, family, and transportation that can limit traditional learning venues.

In response to the demand and benefits of online learning, many higher education institutions have begun to operate fully online programs. TESOL is one of the disciplines gaining popularity in online delivery. According to Reeves's survey (2010), every state in the U.S. offers TESOL certificate or licensure as of the 2007-2008 academic year, although some states began earlier. Teacher candidates get certified to teach ESL students via one of two routes. One is getting an initial teaching license in TESOL (typically 10 courses, 30 semester hours), and the other is getting a TESOL endorsement license (typically 5 to 6 courses, 15 to 18 semester hours), an add-on certificate to the existing initial teaching license. The TESOL endorsement license is obtained by in-service teachers who wish to address the needs of ELLs within the subject areas they teach. Therefore, online TESOL endorsement programs tend to be at the graduate level and well serve in-service teachers in terms of time, flexibility of engagement, geography, and content knowledge.

TESOL programs are frequently offered in the U.S. as a professional development venue or a Master of Education (MEd) program. Professional development venues are operated to serve teacher candidates or in-service teachers who wish to renew their license or want to teach ELLs but are not interested in seeking a Master's degree. These individuals take TESOL courses as non-matriculated students. MEd students take TESOL courses in order to be equipped with a caliber of the most recent teaching methods and strategies for ELLs as well as for core course contents, including theories of second language acquisition, applied linguistics, sociolinguistics, and practicum.

## TESOL Standards

Due to the growing number of ELLs in U.S.<sup>2</sup> public schools, ELLs' diversity in terms of language, culture, and geographic regions has become a focus of teacher education programs. This is to ensure that instruction for ELLs reflects the variety of backgrounds and needs that can be found within a classroom. In respect to quality assurance, all TESOL programs in the U.S. are required to comply with two forms of Standards: (1) the International TESOL and CAEP/NCATE P-12 ESL Teacher Education Accreditation Program and (2) the State Department of Education.

The international TESOL and CAEP/NCATE Standards cover five domains, including language, culture, instruction, assessment, and professionalism. Domain 1 *Language* includes what teacher candidates should know about language as a system as well as theories of and research on language acquisition and development. Domain 2 *Culture* requires that endorsement or licensure candidates know and understand the role of culture in student learning as well as how cultural components affect language learning and school achievement. Domain 3 *Instruction* covers planning, implementing, and managing standard-based content instruction for ESL students. Domain 4 *Assessment* involves concepts and issues of formative and summative assessment as well as high-stakes testing in respect to language proficiency assessment and classroom-based assessment. Domain 5 *Professionalism* calls for keeping abreast with new instructional strategies, evidence-based results, advances in the ESL field, public policy issues, and the history of ESL teaching in the U.S. (TESOL, 2008).

Side-by-side with the international TESOL standards exist the requirements mandated by each State Department of Education or State Board of Regents. Each state mandates a set of standards as well as the passing of an examination such as the Praxis-II ESOL exam. For example, the State of Ohio specifically states that a teacher candidate is an individual “who is deemed to be of good moral character; who has successfully completed an approved program of preparation; who has successfully completed an examination prescribed by the State Board of Education; and who has been recommended by the dean or head of teacher education at an approved institution” (Ohio Board of Education, 2008, p. 1). The Ohio standards are as follows:

- Standard 1: Candidates demonstrate knowledge and understanding of students of diverse cultural and language backgrounds.
- Standard 2: Candidates demonstrate knowledge and understanding of English structure and usage.
- Standard 3: Candidates demonstrate knowledge and understanding of the process of language learning.
- Standard 4: Candidates demonstrate knowledge and understanding of the context of second (new) language acquisition in the U.S.
- Standard 5: Candidates know and demonstrate knowledge of and skills in the assessment of second (new) language learners.
- Standard 6: Candidates demonstrate knowledge of and skills in the instruction of linguistically diverse learners.

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<sup>2</sup> Although the U.S. is not the only English-speaking country, the U.S. is used to refer to an English-speaking country in this paper.

- Standard 7: Candidates observe, participate and practice teaching in second (new) language instruction in classroom settings with experienced certified/licensed teachers having TESOL validation endorsement.

Since the Standards are formulated to gain quality assurance, the coursework of the TESOL programs in the U.S. is aligned with both TESOL and a variety of state standards. There is variability across states because each state rather than the U.S. federal government monitor K-12 TESOL licensure or certification (Reeves, 2010). Even within the state, however, there is no uniform curriculum in place because each university, college, or school district designs its own curriculum under the overarching state standards. Thus, what is still unknown is the effect on K-12 ELLs' achievement due to the lack of uniformity and consistency across TESOL program providers and states. Empirical research studies are needed to address this issue.

Regarding the add-on TESOL endorsement, many states offer flexibility as to when to induct TESOL certification. Some states allow already certified in-service teachers to begin with the TESOL endorsement while they are teaching at schools, which is indicated by the title of "add-on" or "endorsement." Other states allow pre-service teachers to pursue the TESOL certificate while they are working toward the initial teaching license (Reeves, 2010). Regardless of the nature of the license (i.e., initial teaching license or add-on endorsement), the coursework candidates take in TESOL programs reflects both international TESOL and State Standards.

### **Advantages and Benefits of Online TESOL Programs**

There are advantages and benefits of online programs in general and TESOL in particular. Although overlaps exist between general and specific TESOL online offerings, no differentiation between these two will be made in this section. In general, distance learning is a great way to fulfill the life-long nature of learning for individuals who are in workforce. It also satisfies not only the need of learning in our fast-paced, ever-evolving technology era, but also offers accommodation for career- and family-related needs.

From the perspective of class-takers, those who are teacher candidates are able to take advantage of the various merits of distance education, such as flexibility, accessibility, low cost, and an ever-growing learner-centered climate. Distance learning provides excellent accommodation for career- and family-related needs; therefore, teacher candidates as well as in-service teachers do not need to give up their current positions to obtain the TESOL certificate.

Accessibility is another merit that distance education provides. Unlike traditional classes, online courses allow for 24-7 access to the class site, regardless of geographical region or location, thus allowing those who live in remote rural areas or outside the U.S. to access to academic or professional knowledge. Accordingly, online students can adjust their schedules around the demands of their lives. Some online programs offer intensive residential workshops at satellite offices or branch campuses for the sake of the student's convenience or enhanced academic offerings.

Accessibility is directly related to convenience. Some students find online classes more convenient and comfortable, because they can work from home and feel less social pressure than

in face-to-face classes. In addition, what they learn in an online TESOL program can be immediately applied to their classroom teaching in the K-12 setting, and K-12 students can get the most up-to-date resources through their classroom teachers' constant renewal of teaching methods and strategies. This benefit is closely related to the life-long enhancement of teaching, as teacher development is a continuous process that begins before earning teaching credentials and sustains throughout the teaching career (Johnson, 2006). Furthermore, many online courses can be less expensive than transitional classes (Hall & Knox, 2009). Costs associated with traveling, on-campus living, or child-care can be saved through attendance in online classes.

From the service provider's perspective, online delivery allows the program coordinator to solicit content-expert instructors nationally and internationally without the geographical constraint. It also enables the program provider to operate the program with lower costs than face-to-face delivery because classroom space and furnishings are not needed. Hall and Knox (2009) note that distance education is more economically efficient than face-to-face delivery at one-third or two-thirds of the cost of traditional classes. In addition, the asynchronous characteristic of delivery makes online classes immune from weather conditions preventing from class cancelation (e.g., snow days, etc.).

From the instructor's perspective, flexibility is also an advantage. Instructors are able to make their own schedules without the obligation of fitting into the institutionally-scheduled class offering times. Convenience is another advantage for the instructor as well. The instructor can work from home and does not need to travel to campus. Instructors can experiment with new technology and its applicability to their coursework as well as development of their online students, which may not be feasible in face-to-face situations. Instructors can also create opportunities for the engagement of all students through a variety of learning tools that may not work in on-campus offerings; thus encouraging the reticent student to participate in class activities with lower social pressure than in face-to-face classrooms.

The overall benefit of online TESOL programs would be the opportunity for global outreach and building an interactional global community. Collegial networking among theorists and practitioners around the world can engender a system of exchange whereby ideas are more broadly distributed, closing the gap between research and practice. Aside from the academic endeavors, online class takers can seek personal pursuits, such as job openings in other countries, personal connections, and travel purposes.

### **Challenges of Online TESOL Programs**

Benefits come with a price tag. From the class-taker's viewpoint, there is a physical separation between the instructor and the learner, and students who need more structure will miss the immediate supervision in a distance learning course. There is also the feeling of isolation for some students. According to Moore (1989), there are three types of interactions in distance education: 1) learner-content interaction, 2) learner-instructor interaction, and 3) learner-learner interaction. The first type of interaction, *learner-content interaction*, does not change greatly in distance learning classes. Rather, more instructional modules and materials are likely to be provided online, as the instructor tends to upload extensive information to a learning platform in an attempt to ensure that no communication gap exists between the instructor and the student.

Since interaction type and quality can be different between face-to-face and online classes, the second and third interaction types (i.e., *learner-instructor interaction* and *learner-learner interaction*) can frequently undergo changes and generate a new form of indirect interaction. The change in the *learner-instructor interaction* is probably the most crucial dimension. In traditional classrooms, the power dynamic plays a part with the physical presence of the instructor. However, it is unknown whether or not computer-mediated virtual interactions make a difference in the power dynamics frequently found in face-to-face classrooms. The quality of interaction between the two delivery modes is also unknown. Concerning the *learner-learner interaction*, peer-support networking can be reduced unless students make efforts via email or other social networking platforms, such as Facebook, twitter, or text messages to stay in contact. While traditional face-to-face students can learn through group work or casual meetings on campus, online learners' peer contact tends to be lower and more formal unless these additional efforts to know one another are made.

In addition, time management can be challenging because the level of autonomy and self-directed learning is frequently greater than the on-campus face-to-face classroom equivalent. Another challenge involves online students' personal situations. Unlike traditional full-time students, online learners work full-time and take classes at the same time. They tend to be married and have family obligations (Deka & McMurry, 2012). The multiple roles online students play in their lives while taking online classes have the potential to impede their time investment in and concentration on content learning. Undoubtedly, distance learning requires an optimal level of writing skills because the medium of online exchanges is largely communicated through the written word. Individuals whose writing abilities are not correlated to their speaking skills may feel the additional burden of learning to communicate in writing while also attempting to learn the content or to engage in discussion with their peers.

From the instructor's perspective, several challenges also exist. First, the instructor's time commitment in online classes is often greater than in face-to-face classes. Some online classes can take double or triple the time dedication than face-to-face teaching, especially when students' competency with technology is wide-ranging. In essence, online instructors may also find themselves teaching the technology in addition to the classroom content. Due to the inherent nature of computer-based exchanges, instructors may need to walk through the navigation processes of the online learning platform along with other instructional media utilized in the class. There is also the additional time spent responding to email messages regarding technical queries. The navigational disorientation some students present can inhibit class progress while also frustrating the instructor and fellow students.

Secondly, because online learners can fall outside the realm of traditional student and may not be as technology-savvy as traditional students, instructors sometimes need to limit their online tools to lower technologies. The low-end technology use in classes may limit the functionality of the online learning environment. Although there is an expectation that online students will have a level of technology proficiency as a prerequisite for taking online classes, there is still the issue of students' anxiety of technology that can interfere with the employment of synchronous meeting vehicles, such as *Illuminate* or *Adobe Connect*.

Thirdly, there is a wide range of variability in the level of TESOL candidates' classroom experience, as some are veteran teachers who have taught K-12 students for decades, while

others are rookie or even pre-service teacher candidates. This variability in experience may lead to challenges in online discussions about the content under study. Hence, instructors need to be cognizant of the heterogeneity of experience when planning class discussions, as well as the particular needs of early-career or pre-service teachers. Lastly, instructors may need to change their communicative and pedagogical roles in online courses (Hall & Knox, 2009). Richards (1994) highlighted the importance of tailoring language to the demands of the semiotic environment in online classes because written words are subject to misinterpretation when there is a lack of nonverbal communicational tips that usually accompany verbal messages. Therefore, instructors need to constantly check for clarity in instructions or comments so there is little room for misinterpretation.

### **Commonalities and Mismatches in Teaching ESL and EFL Contexts**

There are two ways that English is commonly taught throughout the world. The first is when English is learned as L2 within the U.S. and other English-speaking countries (i.e., ESL context), while the second is as a foreign language in non-English speaking countries (i.e., EFL context). There are common threads in learning English regardless of the learning context, however, and can be beneficial to those who are delivering coursework about how to teach English. First, the target language is the same. The survey and analysis of the linguistic system that would be covered in coursework would remain the same regardless of the two different learning environments. The underlying learning mechanism of L2 or FL, compared to L1, is sensitive to the learner's age, as supported by the critical period hypothesis<sup>3</sup>. The distance between ESL and EFL learning is closer than that between L1 and L2/FL.

Secondly, there are overlaps, if not entirely the same, in the theoretical models of L2 and FL acquisition. This overlap also applies to the teaching methods and strategies, evaluation, sociolinguistic inquiries, and practicum of both environments as well. The commonalities enable educational service-providers and instructors to utilize rich resources available for either ESL or EFL learners.

Despite the common thread shared in ESL and EFL learning contexts, however, there are differences between the two settings with respect to opportunity, accessibility, and utility. ELLs in the ESL setting are constantly exposed to English and have opportunities to speak English outside of the classroom, whereas ELLs in the EFL context are not surrounded by English, thus have limited opportunities to speak English unless they take deliberate attempts to garner exposure to English and practice it. Teacher education service-providers need to take these differences into account in L2 and FL teacher education, because one uniform curriculum cannot satisfy different expectations. In addition, there are also concerns about learning styles and cultural understanding of teacher candidates that need to be addressed, especially in respect to ESL students. The gap that exists between White, middle class teachers and students from largely cultural, linguistic, and ethnic minorities can create a mismatch that is not necessarily connected to ineffective educational outcomes, but rather the incongruence of culture, language,

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<sup>3</sup> Since the critical period hypothesis is beyond the scope of this paper, it is not discussed in this paper. It posits that there is a critical period in the life span (typically the adolescent period) during which the brain is so plastic that it is conducive to learning an L2 more easily than after the period. The brain plasticity is known to diminish after puberty.

and race. Coursework that addresses these issues may help teachers better understand the challenges and complexities involved in learning L2 and create a bridge for efficient school-home connections (Gandara & Maxwell-Jolly, 2006). So, while many courses can provide the required knowledge to those interested in teaching ELLs, there will be deviation depending on the target knowledge base.

There is also a gap in the language spoken by the teacher and the student in the ESL context. As indicated earlier, teachers in the U.S. are largely White, native English speakers. The intuitive knowledge of English as native speakers is not a sufficient condition to be an effective teacher. As Reeves (2010) notes, extensive linguistic knowledge of English is necessary for teaching English to ELLs, because the scientific understanding of the language is knowledge beyond native speaking proficiency. Reeves (2010) claims that, in order to be successful, ELL teachers need to be equipped with a scientific understanding of the English language so that they can explain why certain arrays of words are ungrammatical or out of collocational norms, rather than relying on common knowledge that would result in saying “*Because it sounds awkward*” or “*I just wouldn’t say it that way*” to ELLs. The language gap between the teacher and the student in the EFL context is typically the same, as both parties speak the same native language. Yet, there is also some discontinuity of commonly spoken or vernacular language in situations where both teacher and student are from the same native language group.

The difference or commonality in the language spoken by the teacher and the student raises a question about the necessary coverage of some items in the course materials in TESOL. Most of textbooks used in the TESOL program begin with identifying who ELLs are and the demographic changes in the U.S. to set the stage for English-speaking teachers and teacher candidates who are not familiar with ELLs’ cultural, linguistic, and ethnic backgrounds. This background information about ELLs often creates moments of surprise to teachers and teacher candidates who have not had frequent or familiar contact with ELLs. This introductory information is often useful for teacher candidates interested in ESL because they do not share the same cultural and social realms as their ELL students. However, the introductory information in the EFL setting is unnecessary or not as useful as in the ESL context because teacher candidates and ELLs frequently belong to the same societal and cultural body (i.e., in-group members). There have been changes, however, as more and more native English-speaking teachers are hired for EFL contexts with non-English speaking countries recruiting native speakers for English teaching positions. The proportion of English-speaking teachers in non-English speaking countries is still small; hence, the in-group teachers, so to speak, often find the introductory information about ELLs to be irrelevant to their courses. Similarly, some TESOL programs have an independent course of cross-cultural communication as one of the required courses (e.g., Nebraska). This course may be necessary for English-speaking in-service teachers or teacher candidates, but its utility may be questionable for those who share the same language and culture with their classroom students.

Incongruence can also be found in the expectations of the two groups of teacher candidates. Specifically, English-speaking teacher candidates feel comfortable with discussion-heavy classes, and a discussion board in the online learning environment is instrumental for them because it is a platform on which they can share their own experiences, perspectives, and ideas one another. However, those who speak the same language as their prospective classroom students in the EFL

context find discussion-oriented classes difficult because of English language barriers and a lack of comfort level with discussion-oriented classes. Teacher-fronted instruction with minimal discussions has been dominant in most non-English speaking countries. As Fletcher and Portalupi (2001) note that teachers tend to teach as they were taught, teacher candidates from the EFL context are accustomed to one-way instruction and feel more comfortable with teacher-fronted information transmission than with lively discussions. Teacher candidates who are from non-English speaking countries and expect one-way information transmission are likely to ask for a video clip that contains the instructor's instruction so that they can actually "learn" something from it. From their viewpoints, the concept of learning is direct information transportation from the instructor to the student, and learning is generated from the instructor's instruction rather than from self-involved discussion. Therefore, when teacher candidates who are from an EFL setting take discussion-heavy U.S. TESOL online courses, there are dissonance between the instructor and the cohort and further issues between the ESL context and the EFL context.

## **Conclusion**

Although there has been a wide range of discussion on TESOL programs, a comprehensive look at online TESOL programs from multiple angles has been lacking. This paper attempts to fill the gap by covering the trend, standards, advantages, challenges, and differences of learning contexts (i.e., ESL and EFL settings). This paper surveys the trend, advantages, and challenges of the online TESOL programming that has expanded to the global level due to advancements in technology. The accessibility, flexibility, and functionality of online programs are components that both benefit and challenge those who teach ELLs or who are learning to navigate their own future classrooms. Online TESOL programming reflects many aspects of changes, including technology, the life cycle of new information, the body of learners, the evolving nature of curricula, and so on.

Given that pure face-to-face classes are rare due to the availability of online learning environments, dialogue and discussion about online delivery will likely continue. Since younger learners were born after the advent of the Internet, K-12 students find computer-mediated interaction as a natural means of communication. ELLs are not an exception. However, teacher candidates may not reflect the same comfort with online learning and teaching as their technology-savvy K-12 students. Relearning and updating their skills through online TESOL programs allow in-service and pre-service teachers to build their comfort while also equipping them with the most up-to-date teaching methods and strategies, computer-assisted language learning, and evidence-based pedagogy. In spite of some current challenges with online coursework, there exists a multitude of advantages to online classes that outweigh the reduction of physical presence and distances that exist within such a learning environment. The online component of the TESOL program, regardless of whether it is a Master's program or a professional development venture, provides teachers and teacher candidates with excellent opportunities to reflect on what they learn in the TESOL program while also participating with students in the field. This is important because knowledge is not directly transferred from the decontextualized university classes to teachers' practice in or application to ELL classrooms; rather teachers develop skills and knowledge in action by reflecting on what they consume, tailoring what they learn in TESOL programs to their classrooms, and making modifications

when needed. This way, it is likely that TESOL programs for ELLs are “educationally sound, contextually appropriate, and socially equitable learning opportunity for the students they teach” (Johnson, 2006, p. 235).

Furthermore, the differences between ESL and EFL identified in this paper call for an awareness of and a sensitivity to specificities involved in ESL and EFL learning. Educational service-providers and practitioners need to be especially cognizant of the learning processes, contextual variables, cultural incongruences, expectation clashes, and learner characteristics that differ across contexts. This awareness may lead to the reexamination of current standards to see if the international TESOL and CAEP/NCATE as well as individual states address the fundamental differences involved in ESL and EFL learning. Finally, the assessment and evaluation scheme of the TESOL program and individual ELLs also need to be reconsidered. These issues warrant systematic discussions, informed decisions, and concerted efforts in the field of TESOL. Fruitful outcomes remain to be seen in the near future.

The logo for the International Association for Frontiers in Education (iafor) is centered on the page. It features the word "iafor" in a light blue, lowercase, sans-serif font. The text is surrounded by two large, overlapping, semi-transparent circular arcs. The upper arc is a light red color, and the lower arc is a light blue color, matching the text color. The arcs are positioned such that they appear to frame the text, with the red arc on top and the blue arc on the bottom.

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*CodeSim: A Source Code Similarity Measurement Tool for Computer Programming Courses*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

The paper presents a software tool CodeSim that is used in E-Learning systems. For many computer programming courses, the students' programming assignments are in the form of electronic source code files and it is difficult for the teacher to manually detect the plagiarisms among the assignments. CodeSim can measure the similarities between source files automatically and help to solve this problem. The principle of CodeSim is summarized: Firstly, the source files are processed with intension of filtering the noise elements such as header file include statements, comments, input/output statements, string literals and empty loop statements. These statements have no effect on measuring the similarity between two source files. Secondly, a feature vector is generated for each source file. The features include physic metrics such as the number of source lines and the number of total words, Halstead metrics such as the number of unique operators, the number of unique operands, total number of operators and total number of operands. To avoid the disturbance of syntax equivalent variations, we propose a counting technique for six metrics. Lastly, the distance between two feature vectors is computed which is considered as the similarity between the corresponding source files. Different weights are used for different features. Experimental results show that CodeSim can effectively spot the suspect program copies that have some kind of modifications such as changing the comments, changing the names of the variables and functions, substituting some statements with equivalent variations. It has been used in practical programming courses at Tsinghua University.

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## 1 Introduction

In many computer programming courses, the students are required to complete a sufficient amount of programming assignments. These assignments are generally not written on papers, they are in the form of electronic source code files instead. The main reasons are:

- The programming assignments written on papers need to be scored by the teacher or TA manually and it will become a huge burden to read these source code line by line. If the students can submit the electronic source files, it is possible for the teacher to score these assignments using software tools automatically.
- For each programming assignment, the students need to design the algorithm, write the corresponding source code and debug the program using a computer. There is generally a long way from thinking up a solution to writing correct code and making it work in a computer. Therefore, it is not enough for a student to just write his/her preliminary solution on a paper, he/she should submit the final source code that can work well.

In every year, there are many millions of programming exercises being turned in by students around the world. This may bring a potential problem of plagiarism. A few students may submit copies (verbatim or with some modifications) of programs supplied by somebody else who is taking the same course at the same time. For a teacher, the plagiarisms are not allowed. However, very few teachers have the patience to thoroughly search for plagiarisms; although finding plagiarisms is possible, it is much too time-consuming in practice, especially when there are several hundred of students taking the same course at the same time. Sometimes a teacher may do find duplicates among the assignments, but it is mainly by accident. For example, a student forgot to replace the name of his friend in the head of the program source text. Therefore, for an instructor who is teaching a computer programming course, a powerful automated search that finds similar pairs among a set of programs would be most helpful.

The first author of this paper is teaching an introductory programming course for non-computer science undergraduate students at Tsinghua University, China. It is an optional course for anyone who is interested in studying computer programming. The course focuses on common computational problem solving techniques and no prior programming experience is assumed. Generally there are more than 160 students in the class and they are from different majors such as materials science and engineering, chemical engineering, hydraulic engineering, mechanical engineering, automotive engineering, etc. The course is given in one semester of sixteen weeks, and in each week, the students are required to finish four or five programming assignments. This means that we will receive more than 640 source files from the students per week and it is impossible for us to manually detect all the plagiarisms among the assignments. On the other hand, there are really existing some sorts of plagiarisms among the assignments. A few students want to get the course credits with less effort, after all, computer programming is not their major course. If we are not able to detect the plagiarisms and warn them in time, the problem will become more and more serious. Therefore, we really need a powerful automatic software tool that can help us to solve the problem. Moreover, we have already designed and implemented a practical E-Learning system for computer programming courses (Shi and Chen, 2012). The system provides a high quality training mechanism for students. The online source code editor, the remote compiler of our own, the automated assessment of programming assignments and the quick feedbacks enable

students to practice their programming skills effectively and efficiently. Therefore, we can implement a new software component that is used to detect the plagiarisms and integrate it into the whole system.

This paper presents a software tool CodeSim that can measure the similarities between a pair of source files automatically and help the teacher to find the potential plagiarisms among the programming assignments submitted by the students. The whole process is divided into three steps. Firstly, the source files are processed with intension of filtering the noise elements. Secondly, a feature vector is generated for each source file. Lastly, the distance between two feature vectors is computed which is considered as the similarity between the corresponding source files.

The rest of the paper is organized as follows. In Section 2, we present the related works on the automatic detection of source-code plagiarisms. Then we give a detailed description of our method in Section 3. In Section 4, the evaluation results are shown and discussed. Finally we conclude our work in Section 5.

## 2 Related Work

The first known plagiarism detection system was developed by Ottenstein (1976). It uses the basic Halstead (1977) metrics (number of unique operators, number of unique operands, total number of operators, total number of operands) to compare two Fortran programs and if all the four values coincide, the programs can be considered to be plagiarisms. The above system can be categorized as the feature-based method. The basic idea of a feature-based system is summarized as follows:

Firstly, for each program file, a set of software metrics are extracted and they make up a feature vector. Different systems may use different metrics such as Halstead metrics, physical metrics, etc. The length of the feature vector can also be different. Generally speaking, longer feature vectors tend to be more sensitive than shorter ones and may come up with a large fraction of false positives.

Secondly, each feature vector corresponds to a point in an  $n$ -dimensional Cartesian space ( $n$  is the length of the vector). Therefore, we can compute the distance between two feature vectors and consider the distance to be the similarity degree of corresponding programs. Typical feature-based systems include Berghel (1984), Donaldson (1981), Faidhi (1987), etc.

The feature-based systems are efficient because they only need to compute a limit number of feature values for each program. This can be accomplished by scanning a source file once or twice. However, they can hardly have very good performance because they throw away too much structural information.

The second type of plagiarism detection method is based on program structures. The structure-based systems compare the structures of two programs directly. The basic idea is to convert each program into a stream of tokens and then compare these token streams to find common segments. The comparing algorithm needs to be designed carefully because it will determine the efficiency of the whole system.

Typical structure-based systems include Michael Wise's YAP3 (1992), Alex Aiken's MOSS and Guido Malpohl's JPlag (2000). The differences lie in the detection performance, the run time efficiency and the user interface.

Generally speaking, the feature-based systems are more efficient and have relatively lower performance, while the structure-based systems have better performance and are less efficient, especially when dealing with a large data set (Verco, 1996). It is not reasonable to declare that one method is always better than another. In our case, we have to consider the following aspects when trying to detect the plagiarisms among the students' assignments.

- We actually don't need a "perfect" plagiarism detection system. As a teacher, the more important thing is to educate the students not to cheat and let them know the serious consequences of cheating. If the students know about it, most of them will not even try to attempt it. Therefore, the plagiarism detection system is just an auxiliary technical tool that helps us to find as many plagiarisms as possible in limited time.
- There needs to be a balance between effectiveness and efficiency. As we mentioned before, we will receive more than 640 source files from the students per week. This is a large data set and the time efficiency is more important to us. We can't accept a system that takes a long time to complete the job, even though it may have a higher accuracy.
- Although there are already several free plagiarism detection tools available on the internet, it is still time consuming to use these tools. We have to prepare the data files in a local machine and submit them to the servers. These files should meet the requirements of the system including the type, the format and the directory structure of the source files. On the other hand, we already have a powerful E-Learning platform and this platform is already in use in our courses. If we can implement a new plagiarism detection component and integrate it into the platform, it will be convenient to use and no extra time is required because all the data files are already there.

### 3. The System

Based on the discussion above, we decide to utilize the feature-based strategy. Our source-code plagiarism detection system consists of three main components: the pre-processing component, the feature extraction component and the similarity measurement component.

#### 3.1 The Pre-processing Component

For each programming assignment, the students will submit the corresponding source code files. These files can't be compared directly because they contain many noise elements that have negative effects on measuring the similarity between source files. Therefore, we need a pre-processing component to filter out these noise elements.

Firstly, we need to filter out all the "header file include" statements. The following are some of the examples:

```
#include <math.h>
#include <ctype.h>
```

For a typical C program, the "header file include" statements are absolutely necessary because we often need to call the commonly used system functions in the program, for example, printf, scanf, strlen, etc. If the "include" statements do not occur in the program, the compiler

will not be able to recognize these functions and locate their objective code files, which will lead the compiling process to fail. Therefore, the “header file include” statements are important to the compiling and running of the program. However, these statements are meaningless when computing the similarity value of two source files. Instead, they may have negative effect. For example, a student may insert functionally useless “header file include” statements in a source file on purpose to make it look different with others.

Secondly, we need to remove all the comments and blank lines from the source files. From a programmer’s point of view, the comments and blank lines are there mainly for the readers of the source code. It is very important for a professional programmer to include appropriate (not too many, not too few) comments and blank lines in his program. For example, if a piece of code is too hard to understand, the author should include a paragraph of text to illustrate its principle in detail. That will help his colleagues to understand the code with less effort and improve the communication efficiency of the whole team. The blank lines are mainly used to separate different blocks of code and make the structure of the program clear and comprehensible. For example, you can use a blank line to separate the variable declaration section from the ordinary statements.

However, from the compiler's point of view, both the comments and the blank lines have no effects on the functionality of the program. Actually, they will be removed by the compiler during the compiling process. Therefore, when computing the similarity value of two source files, we should remove all the comments and blank lines from the files at first. Otherwise, one can easily fool the automatic plagiarism detection system by writing fake statements in the comment area. For example,

<pre> void main() {     int m, n, factor;     int num, i;      scanf("%d %d", &amp;m, &amp;n);     scanf("%d", &amp;factor);     num = 0     for(i = m; i &lt;= n; i++)     {         if(i % factor == 0)             num ++;     } } </pre>	<pre> /*     for (i = 0; i &lt; N; ++i)     for (j = 0; j &lt; N; ++j)     {         for(C[i][j]=0,k=0; k&lt;N; ++k)             C[i][j] += A[i][k]*B[k][j];     } */ void main() {     int m, n, factor;     int num, i;      scanf("%d %d", &amp;m, &amp;n);     scanf("%d", &amp;factor);     num = 0     for(i = m; i &lt;= n; i++)     {         if(i % factor == 0)             num ++;     } } </pre>
--	--

(a) the normal program

(b) a plagiarism with fake code

Figure 1. Plagiarism with fake code as comments

Figure 1.a is a normal program and figure 1.b is a plagiarism with fake code. In figure 1.b, the bottom part of the code has real functionality and it is an exact copy of figure 1.a. The top part of the code is a piece of fake code (in the form of comments) that used to fool the automatic plagiarism detection system.

Thirdly, we need to remove all the input/output statements. These statements are mainly used for user interface purpose and have few relationships with the core functions of the program.

Lastly, all the string literals are removed from the source files. Strictly speaking, a string literal is actually a type of data, not a statement. It is mainly used for program debugging and user interface purpose. It has no effect on the running of the program. Furthermore, just like the comments, the string literals in a program can also be used to fool the automatic plagiarism detection system. For example, one can define a carefully designed long string literal that contains all types of operators, operands and keywords in his program, and then this string literal will cause great troubles to any type of detection systems. The following is a small example:

```

strepy(s,“+*/&%=!~^(){}[]\|;?<>\\.main.int.char.double
float.if.else.while.for.a[i].int*.return”);

```

After filtering out all the above noise elements, we need to re-format the source code according to a specification. The main purpose is the separation of operators and operands. All the operators defined in C are listed as follows:

```
single_symbol    =    {'=',    '+',    '-',    '*',    '/',    '%',    '<',    '>',    '!',
                      '&', '|', '~', '(', ')', '{', '}', '[', ']', ',', ';', ':', '.', '?', '#'}
double_symbol    =    {'//',    '+=',    '-=',    '*=',    '/=',    '%=',    '&=',
                      '^=',    '|=',    '++',    '--',    '<=',    '>=',    '==',
                      '!=', '&&', '||', '<<', '>>', '->', '::'}
```

After the formatting is completed, each operator will have exact one blank space printed before and after, which is convenient for further processing.

```
/******20120501*****
*****just for test *****/
#include <iostream>
#include <string>
using namespace std;

#define MAX_N 5
int main()
{
    char test[]="for test"; //print
    cout<<test<<endl;
    printf("%s\n",test);

    int num[MAX_N][MAX_N],x;

    cin>>x;

    for(int i=0;i<MAX_N;i++){
        for(int j=0;j<MAX_N;j++){
            num[i][j]= i+x;
        }
    }
    return 0;
}
```

Figure 2. Program before the pre-processing

We will give an example to illustrate how the pre-processing component works. Figure 2 is an original program submitted by a student. Figure 3 is the program after the pre-processing.

```
# define MAX_N 5
int main ( ) {
    char test [ ] = "";
    int num [ MAX_N ] [ MAX_N ], x ;
    for( int i = 0 ; i < MAX_N ; i ++ ) {
        for( int j = 0 ; j < MAX_N ; j ++ ) {
            num [ i ] [ j ] = i + x ;
        }
    }
    return 0 ; }
```

Figure 3. Program after the pre-processing

As we can see, all the “header file include” statements, all the comments, all the blank lines, all the input/output statements and all the string literals are removed from the source code. Furthermore, all the words (variable names, keywords, etc) and the operators are separated with blank spaces.

### 3.2 The Feature Extraction Component

For a feature-based system, the next step is to extract a set of software metrics from an input source file and construct a feature vector. In our system, we considered two types of features: physical features and Halstead features.

Physical features are quite straightforward. They include file size, number of source lines, number of words, number of characters, etc. In our system, we use two physical features, i.e. number of source lines and number of words. These two features seem to be more valuable than others. The calculation of the number of sources lines is easy. We just need to count how many carriage return (“\n”) characters are there in the source file. Furthermore, since we have re-formatted the source code to conform to a uniform standard in the pre-processing stage, the number of words roughly equals to the number of blank spaces in the code string.

Halstead features refer to the statistics of source code attributes, specifically, the usage of different identifiers. For a feature-based system, it is important to choose which types of identifiers to use because it will affect the accuracy of the system.

The identifiers in the C language can be categorized as follows:

- Operators: including assignment operators (=, +=, -=, \*=, /=), arithmetic operators (+, -, \*, /, %, ++, --), relational operators (<, <=, >, >=, ==, !=), logical operators (&&, ||, !, <<, >>), bitwise operators (&, |, ~, ^) and other operators (type conversions, pointer operators, etc).
- Keywords: including int, if, char, etc.
- Predefined identifiers: including define, undef, include, etc.
- User defined identifiers: including variable names, constants, user-defined functions, etc.

In our system, we will consider six attributes of source code: arithmetic operator metrics, relational operator metrics, logical operator metrics, execution flow metrics, operand metrics and the number of different operands.

For the first four metrics, the system uses a dictionary structure to store the counting object, the unit value of the operator and the unit value of the corresponding operand. The counting object is the index key of the dictionary and the latter two values make up a list that is used as the index value. Each item is in the form of “X: [n1, n2]”. For the last two metrics, their values are already there when the first four metrics accomplish.

Take the arithmetic operator metrics as an example. They reveal the characteristics of a program on arithmetic operations. Different operators are assigned different unit values. For example, the unit values of ‘=’, ‘+’ and ‘+=’ are 1, 2 and 3. Therefore, the statement “x += y” can be seen as the same as the statement “x = x + y”.

The following is the pseudo code of how to compute this attribute value:

```
attribute_value = 0
for object_to_count in attribute_dict.keys():
    attribute_value = attribute_value + num[object_to_count] *
                        attribute_dict[object_to_count][0]
```

num[object\_to\_count]: the number of times object\_to\_count occurs in the source code

attribute\_dict[object\_to\_count]: the unit value of object\_to\_count, i.e. the n1 in “X:[n1, n2]”

### 3.3 The Similarity Measurement Component

The feature extraction component transforms a pair of source files into two feature vectors. The next step is to compute their similarity. Each feature vector consists of two parts: physical attributes and Halstead attributes, they are given different weights. The similarity computation of two feature vectors is summarized as follows:

The first step is vector transformation. Suppose we have two vectors  $H_i$  and  $H_j$ , we need to transform them into another two vectors  $H'_i$  and  $H'_j$  using the following formulas:

$$h'_{ik} = \frac{h_{ik}}{h_{ik} + h_{jk}} \quad (1)$$

$$h'_{jk} = \frac{h_{jk}}{h_{ik} + h_{jk}} \quad (2)$$

$h_{ik}$ : the  $k$ -th element of  $H_i$

$h_{jk}$ : the  $k$ -th element of  $H_j$

After the transformation, each element value is limited in the range of [0, 1].

The second step is to compute the vector difference using the following formula:

$$D = H'_i - H'_j \quad (3)$$

The last step is the similarity computation using the following formula:

$$\text{sim} = \begin{cases} 1 - \frac{|D|}{\sqrt{6 * sen}}, & |D| \leq \sqrt{6 * sen} \\ 0, & |D| > \sqrt{6 * sen} \end{cases} \quad (4)$$

*sen* is the sensitivity coefficient whose value is in the range of [0, 1]. A smaller value indicates that the similarity detection is stricter, i.e., if the vector difference is bigger than a small value, the two source files are considered to be not similar to each other. In our system, *sen* is set to 0.2.

Suppose the physical similarity is  $S_1$  and the Halstead similarity is  $S_2$ , then the final similarity of two source files is computed using the following formula:

$$S = S_1 * W_1 + S_2 * W_2 \quad (5)$$

$W_1$  and  $W_2$  are the corresponding weights, in our system,  $W_1 = 0.2$ ,  $W_2 = 0.8$ .

#### 4. The Results

The usage of CodeSim is quite straightforward. For each programming assignment, all the source files submitted by the students will be compared in pairs. The result is in the form of Excel file currently. Figure 4 is an example of the output file.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1		20100132E	20110132Z	20110132Z	20110132Z	20110132Z	20110132Z	20110132Z	20110132Z	20110132Z	20110132Z	20110132Z	20110132Z	20110132Z
2	20100132E	1	0.2298	0.3714	0.2348	0.2655	0.6532	0.7553	0.621	0.6715	0.4262	0.2742	0.1814	0.8862
3	20110132Z	0.2298	1	0.1064	0	0.0069	0.1107	0.2045	0.1283	0.1795	0.0852	0	0.0848	0.1776
4	20110132Z	0.3714	0.1064	1	0.2417	0.2614	0.2755	0.4359	0.4446	0.4357	0.279	0.2685	0.1419	0.3574
5	20110132Z	0.2348	0	0.2417	1	0.5204	0.2726	0.2682	0.2555	0.2421	0.1774	0.6417	0.1282	0.2665
6	20110132Z	0.2655	0.0069	0.2614	0.5204	1	0.213	0.2144	0.2002	0.1848	0.1099	0.8066	0.1784	0.2514
7	20110132Z	0.6532	0.1107	0.2755	0.2726	0.213	1	0.7442	0.7462	0.7275	0.6916	0.2326	0.1287	0.7173
8	20110132Z	0.7553	0.2045	0.4359	0.2682	0.2144	0.7442	1	0.8254	0.9041	0.625	0.2363	0.1088	0.7717
9	20110132Z	0.621	0.1283	0.4446	0.2555	0.2002	0.7462	0.8254	1	0.8755	0.7356	0.2208	0.0933	0.6762
10	20110132Z	0.6715	0.1795	0.4357	0.2421	0.1848	0.7275	0.9041	0.8755	1	0.6904	0.2067	0.0832	0.7013
11	20110132Z	0.4262	0.0852	0.279	0.1774	0.1099	0.6916	0.625	0.7356	0.6904	1	0.1285	0.0213	0.4811
12	20110132Z	0.2742	0	0.2685	0.6417	0.8066	0.2326	0.2363	0.2208	0.2067	0.1285	1	0.1823	0.2731
13	20110132Z	0.1814	0.0848	0.1419	0.1282	0.1784	0.1287	0.1088	0.0933	0.0832	0.0213	0.1823	1	0.1547
14	20110132Z	0.8862	0.1776	0.3574	0.2665	0.2514	0.7173	0.7717	0.6762	0.7013	0.4811	0.2731	0.1547	1
15	20110132Z	0.2001	0	0.2138	0.9334	0.4805	0.2561	0.2689	0.2717	0.2687	0.2122	0.6	0.0933	0.232
16	20110132Z	0.8012	0.1556	0.298	0.2616	0.2434	0.8191	0.7794	0.6804	0.7123	0.5442	0.261	0.1604	0.8377
17	20110132Z	0.1896	0.0972	0.1658	0.1323	0.1989	0.1251	0.1183	0.1038	0.0912	0.0201	0.1792	0.2349	0.1602
18	201101324	0.186	0	0.2108	0.5037	0.5635	0.2361	0.2574	0.2696	0.2604	0.2185	0.5436	0.081	0.217
19	201101324	0.2212	0	0.2419	0.6498	0.7702	0.2444	0.2909	0.2796	0.2682	0.1785	0.8673	0.1083	0.2482
20	201101324	0.6921	0.151	0.2948	0.2969	0.2288	0.7937	0.7785	0.676	0.7176	0.577	0.249	0.1278	0.7161
21	201101324	0.6371	0.1211	0.3661	0.244	0.186	0.7997	0.8064	0.9033	0.8582	0.7299	0.2076	0.0832	0.7074
22	201101324	0.2471	0.0461	0.2579	0.3409	0.7194	0.192	0.2074	0.1899	0.1747	0.0957	0.6325	0.1704	0.2313
		物理相似度	物理相似度排序	Halstead相似度	Halstead相似度排序	综合相似度	综合相似度排序							

Figure 4. An example of the output file

To testify the effectiveness of our system, we have conducted a series of experiments. In the first experiment, for a given program submitted by a student, we added additional “header file include” statements, comments and output statements (used for debugging) in the source text to make it look different with the original one. However, when we used CodeSim to measure the similarity of these two programs, the result was 1.0 which means they are completely the same.

In the second experiment, we changed the names of different type of identifiers, such as the variable names, function names and user-defined struct names. Again, the measurement result was still 1.0. This is because CodeSim only computes the numbers and distributions of operators and operands, it does not care about the names of different identifiers.

In the third experiment, we changed the structure of the code. For example, we changed the order of some functions and substituted a function call with the body of the function itself. The similarity degree was more than 0.9.

We also used a real data set to testify CodeSim. The data set consists of a group of source files submitted by the students in our class. These source files are the students’ solutions to a same programming problem. Those pairs of programs that have a relatively high similarity degree are examined by us manually. It turns out that for any pair of programs whose similarity value is greater than 0.7, there are always exist many code blocks that seem to be similar enough.

## 5 Conclusion

The paper presents a software tool CodeSim that can help teacher to find the potential plagiarisms among the vast number of programming assignments. CodeSim is a feature-based source code plagiarism detection system. It consists of three main components: the pre-processing component, the feature extraction component and the similarity measurement component. Each component is discussed in detail in the above sections. Experimental results show that CodeSim can effectively spot the suspect program copies that have some kind of modifications such as adding the comments, changing the names of the variables and functions, substituting some statements with equivalent variations, etc.

Ongoing and future work includes the further improvements of CodeSim. For example, we can try to improve the accuracy of the system by making use of the program structure information. The second problem is how to make the system work more efficiently when processing a large data set. Besides, there is the problem of user interface. We need to provide a better interface for the users to understand the results.

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*Combining GM(1,1) Model and Grey Relational Analysis to Improve Methods of  
Selecting Contestants in Education*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

The purpose of this paper was to select correctly students who have stable and potential performance. Participants were 35 fourth grade students in Central Taiwan. Based on GM(1,1) method, researcher used students' scores of previous seven semesters to predict students' scores of second semester of fourth grade. Through comparing traditional method with GM(1,1) method, this study found that whether in single subject or multiple subjects, GM(1,1) method and traditional method have similarly high goodness of fit. The combination of two methods has been used to select contestants having stable performances. And based on GM(1,1) method, students having unstable performances can be filtered out. Furthermore, using GM(1,1) method can select potential students in various subjects while using traditional method cannot. The combination of GM(1,1) method and grey relational analysis, according to students' scores in various subjects, can improve traditional method in selecting contestants. This method is innovative that provides teachers a good way to select contestants based on both single subject and multiple subjects.

**Keywords:** Grey system theory, GM(1,1), Selecting Contestants, GRA

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## 1. Introduction

There are many methods which can be used to select contestants. In qualitative approach, using literature research and analysis can find out the best selection (Hsu, Chang, & Su, 2007). In quantitative method, analyzing the data of various competitions or test is the most common way. Some studies used descriptive statistics to analyze and showed a mean value or percentage in order to understand the overall status (Chang, Chen, & Hsu, 2006; Yeh, Chu, & Wu, 2009), and other researches implement a variety of test in order to find out the differences between groups (Lin, Chen, Chan, & Chang, 2008; Wang, Liu, & Jeng, 2008). These findings have provided various schools and organizations with the base for selection.

In order to select hopeful student, schools usually announce the proportion of all investigatory items in general regulations to recruit people who they desire. However, some previous studies showed that the proportion of the real influence of the objective written test was higher than expected, and the proportion of the real influence of the subjective assessment was lower than expected (Chan, et. al., 2008; Chan, & Syu, 2011). This shows that in general although oral test has increased and the paper-pencil test has reduced, but the training on judgement and related knowledge is not too much. Thus, potential students are not easy to be identified or recognized (Oreck, Owen, & Baum, 2003). Consequently, Pan, & Lai, 2005 compared the achievement of students who are selected base on the recommendation and other students who are admitted base on the score of college entrance examination to confirm the mode of recommended selection setting by the school indeed reached the predetermined selecting effect (Pan, & Lai, 2005).

In recent years, Grey system theory has been more widely used in education. Many researchers used the gray relational analysis (GRA) to analyze the correlation of various factors and to find the factor which the most strongly influences on overall performance. For example: factors affecting scores in the volleyball game (Chang, 2007, 2011), factors affecting quality of the kindergarten (Liu, 2010), designing factors of basketball shoes (Huang, Ho, Peng, Cheng, & Liao, 2009), factors affecting junior high school students to select technical colleges (Chou, & Li, 2001). In addition, the GRA on a math test to identify the degree of the questions difficulty have been applied by many scholars (Sheu, Tzeng, Tsai, & Chen, 2012; Sheu, Tzeng, Tsai, Chen, & Nagai, 2012a, 2012b, 2012c; Sheu, et. al., 2012).

In grey system theory, GM(1,1) model which can find out the prediction characteristic based on small size of data has been widely used in various research fields. For example: assessment of unemployment rate (Huang, & Tsai, 2004; Zhao, 2003), population prediction (Hsu, 2008), price prediction (Peng, 2001; Lai, 2007; Hsu & You, 2007). Currently, in education, some studies have focused on the human resources prediction (Sun, & Chan, 2007), however, there are little

research using this model to predict students' performances in various subjects and to find potential students in some subjects.

In summary, by the use of traditional selection which is whether qualitative or quantitative analysis, the results can only show students' performance at selecting time, and they can't predict a variation of students' scores in the future. Hence, in order to select more correctly students who have stable performance and potential, this study firstly applied the GM(1,1) prediction method to estimate the scores of second semester of fourth grade students' scores of seven semesters from first semester of first grade to first semester of fourth grade. Secondly, this study combined the GM model and GRA theory to improve the traditional method for selection contestant and provides teachers an innovative method selecting contestants based on single subject and multiple subjects.

## 2. Basic Theory

### 2.1 GRA Grey Relational Analysis

The grey system theory was proposed by Deng in 1989. The main points of this theory refer to the relational analysis of related system in uncertainty and incomplete of information, to the exploration of overall system through the prediction and decision manner, combining with mathematical method, to effective solution of the not certainty, multi-input, discrete, and incomplete data (Wen, Chang, Yeh, Wang, & Lin, 2006; Wen, Chou, Chang, Chen, & Wen, 2009). The GRA estimation functions are as following:

#### 2.1.1 Establishing the raw data analysis

Establish the reference vector  $x_0$  and comparative vector  $x_i$  of the raw data. They are defined as follows:

$$\begin{aligned} x_0 &= (x_0(1), x_0(2), L, x_0(k), L, x_0(m)) \\ x_1 &= (x_1(1), x_1(2), L, x_1(k), L, x_1(m)) \\ x_2 &= (x_2(1), x_2(2), L, x_2(k), L, x_2(m)) \\ &\vdots \\ x_i &= (x_i(1), x_i(2), L, x_i(k), L, x_i(m)) \\ &\vdots \\ x_n &= (x_n(1), x_n(2), L, x_n(k), L, x_n(m)) \end{aligned}, \text{ where } i = 1, 2, \dots, n; \quad k = 1, 2, \dots, m \quad (1)$$

### 2.1.2 Calculations of Grey Relational Grade

To calculate with the grey relational grade formula defined by Nagai (Yamaguchi, Li, & Nagai, 2005, 2007), where local grey relation's reference vector is  $x_0$  and comparative vector is  $x_i$ . When  $\Gamma_{0i}$  is close to 1, it means that  $x_0$  and  $x_i$  are highly correlated. On the other hand, if  $\Gamma_{0i}$  is close to 0, the relationship between  $x_0$  and  $x_i$  is lower.

#### (1) The formula of the local grey relation

$$\Gamma_{0i} = \Gamma(x_0, x_i) = \frac{\bar{\Delta}_{\max} - \bar{\Delta}_{0i}}{\bar{\Delta}_{\max} - \bar{\Delta}_{\min}}, \text{ where } \bar{\Delta}_{0i} = \|x_0 - x_i\|_{\rho} = \left( \sum_{k=1}^m [\Delta_{0i}(k)]^{\rho} \right)^{\frac{1}{\rho}} \quad (2)$$

$\bar{\Delta}_{0i}$  means that the absolute difference form two sequences.  $\bar{\Delta}_{\max}$  and  $\bar{\Delta}_{\min}$  means maximum and minimum of  $\bar{\Delta}_{0i}$ , respectively. When  $1 \leq \rho \leq \infty$ , it represents Minkowski's grey relation; when  $\rho = 2$ , it represents Euclidean grey relation.

#### (2) The formula of the global grey relation

$$\Gamma_{ij} = \Gamma(x_i, x_j) = 1 - \frac{\bar{\Delta}_{ij}}{\bar{\Delta}_{\max}}, \text{ where } i, j \in 1, \dots, n; \bar{\Delta}_{ij} = \left( \sum_{k=1}^m [\Delta_{ij}(k)]^2 \right)^{\frac{1}{2}} \dots \dots \quad (3)$$

### 2.1.3 Grey Relational Ordinal

The decision-making is based on the comparison of the grey relational grade  $\Gamma_{0i}$ . After sorting  $\Gamma_{0i}$ , the maximum or minimum impact factors can be found and this can be the ordinal principle of the system.

## 2.2 GM(1,1) Model

Grey prediction is used to proceed prediction on the existing data based on GM(1,1) model. Substantively, it is used to find future dynamic conditions of each element in a series. GM(1,1) model represents the GM model which is first-order differential and had one input variable. The biggest advantage of GM(1,1) model is not too many data needed, least data needed are only four data. In addition, the procedures of GM(1,1) are quite simple (Wen, Chang, Yeh, Wang, & Lin, 2006; Wen, Chou, Chang, Chen, & Wen, 2009). The procedures of GM(1,1) model are shown as

follows:

### 2.2.1 AGO: Accumulated Generating Operation

The grey differential equation of GM(1,1) model is defined as  $x^{(0)}(k) + az^{(1)}(k) = b$ . Although it meets the conditions to constitute the differential equations approximately, it is not true differential equations after all and can't do continuous analysis and prediction for the process of times. The white differential equation  $\frac{dx^{(1)}(t)}{dt} + ax^{(1)} = b$  is used instead of  $x^{(0)}(k) + az^{(1)}(k) = b$  to establish accumulated generating sequences in grey prediction.

### 2.2.2 Finding the mean generation $z^{(1)}(k)$

The parameters  $a$  and  $b$  are calculation and identification of GM(1,1) model parameters, where  $a$  is the coefficient of the development of predictive model;  $b$  is the grey action of predictive model. The GM(1,1) model  $x^{(0)}(k) + az^{(1)}(k) = b$  is defined to meet the following sequence.

$$x^{(0)} = x^{(0)}(k) = (x^{(0)}(1), x^{(0)}(2), \dots, x^{(0)}(n))$$

$$x^{(1)} = x^{(1)}(k) = (x^{(1)}(1), x^{(1)}(2), \dots, x^{(1)}(n))$$

$$\begin{aligned} x^{(0)}(2) &= -az^{(1)}(2) + b \\ \text{and then } x^{(0)}(3) &= -az^{(1)}(3) + b \\ &\quad \text{M} \quad \text{M} \\ x^{(0)}(n) &= -az^{(1)}(n) + b \end{aligned}, \text{ where } z^{(1)}(k) = \frac{1}{2}(x^{(0)}(k) + x^{(0)}(k-1)) \cdots (4)$$

### 2.2.3 Solving accumulated prediction equation of differential equations

Assume the matrix  $Y = B\hat{a}$ , the parameters  $a$  and  $b$  are found based on least square method

$$\text{, where } Y = \begin{bmatrix} x^{(0)}(2) \\ x^{(0)}(3) \\ \text{M} \\ x^{(0)}(n) \end{bmatrix}_{(n-1) \times 1}, \quad B = \begin{bmatrix} -z^{(1)}(2) & 1 \\ -z^{(1)}(3) & 1 \\ \text{M} & \text{M} \\ -z^{(1)}(n) & 1 \end{bmatrix}_{(n-1) \times 2}, \quad -\hat{a} = \begin{bmatrix} a \\ b \end{bmatrix}_{2 \times 1} \cdots \cdots (5)$$

According to the parameters, accumulated prediction equation of differential equations was shown as follows:

$$\hat{x}(k+1) = (x^{(0)}(1) - \frac{b}{a})e^{-ak} + \frac{b}{a} \dots\dots\dots (6)$$

#### 2.2.4 IAGO: Inverse Accumulated Generating Operation

$$\hat{x}^{(0)}(k+1) = \hat{x}^{(1)}(k+1) - \hat{x}^{(1)}(k) \text{ and } \hat{x}^{(1)}(1) = \hat{x}^{(0)}(1) \dots\dots\dots (7)$$

### 3. Selecting Contestants Based on Single Subject

In this section, the difference between traditional method and GM(1,1) method has been compared for selecting contestants based on single subject. Students' scores usually reflect their abilities, and if a competition can obviously show the student performance regarding the needed subject; teachers can select contestants according to students' score of this subject. The study assumed that the time of contestants' selection was at the beginning of second semester of fourth grade and the number of contestants was ten. The selected contestants have been trained on second semester of fourth grade and then participate in competition on behalf of their school at the fifth grades.

The study cases were Chinese competitions which are often organized in the elementary school. Students' scores in Chinese competition reflect their Chinese abilities. The study therefore took students' total scores of seven semesters, from first semester of first grade to the first semester of fourth grade as a basis of estimation (C1~C7 were listed in Appendix). The total scores is selected since it represents students' total performance of that subject.

Before analyzing students' scores, the reliability was test. Cronbach's  $\alpha$  value is 0.962, which means the reliability of Chinese scores is very high.

#### 3.1 Traditional Method

Traditional method has been used to select contestants based on their performance for certain period of time. One of traditional methods which had been frequently applied is to compare students' average scores. This means that students' total average score of seven semesters in Chinese is calculated and then according to average score to rank top 10 of students. Table 1 shows the result of contestant selection based on traditional method.

After sorting based on traditional method, ten selected students are number 4, 28, 12, 29, 21, 16, 26, 32, 22, 3, and 31 (Student 3 and Student 31 are both tenth high score.).

Table 1. Result based on traditional method

Student	C1	C2	C3	C4	C5	C6	C7	Total Average Score	Sort
4	99	98	99	98	99	99	98	98.57	1
28	97	98	98	97	98	99	99	98.00	2
12	99	98	98	98	98	97	96	97.71	3
29	98	97	96	96	97	99	98	97.29	4
21	98	98	96	98	97	96	96	97.00	5
16	98	97	96	98	96	96	97	96.86	6
26	98	95	95	95	96	97	98	96.29	7
32	95	96	95	97	96	96	98	96.14	8
22	97	95	95	96	96	95	97	95.86	9
3	95	95	96	97	96	97	93	95.57	10
31	97	94	91	97	97	97	96	95.57	10
1	95	94	95	96	96	97	95	95.43	12
25	97	94	95	94	95	97	96	95.43	12
9	96	97	95	97	87	97	93	94.57	14
5	96	95	95	94	94	94	92	94.29	15
14	96	93	95	94	92	97	92	94.14	16
35	95	93	95	90	94	96	94	93.86	17
19	95	95	93	95	90	94	92	93.43	18
33	95	93	95	96	93	92	90	93.43	18
20	95	90	92	94	94	93	94	93.14	20
17	94	95	94	93	89	93	92	92.86	21
13	95	91	92	96	92	93	87	92.29	22
30	96	91	90	89	91	92	91	91.43	23
15	94	91	88	89	90	94	89	90.71	24
2	95	89	89	93	89	91	87	90.43	25
8	96	90	88	91	89	91	87	90.29	26
11	91	90	92	93	88	90	82	89.43	27
27	88	92	88	89	88	88	90	89.00	28
6	90	87	85	87	88	91	84	87.43	29
7	82	82	86	84	87	89	82	84.57	30
23	89	87	76	79	82	83	88	83.43	31
18	88	87	81	85	81	83	78	83.29	32
24	91	92	81	93	76	71	76	82.86	33
34	73	71	80	80	80	86	85	79.29	34
10	82	87	73	78	73	71	66	75.71	35

### 3.2 GM(1,1) Method

The advantage of GM(1,1) method is it can predict students' score in future. The purpose of using this method is to select contestants who have stable and potential performance. Similarly, researchers take students' total scores of seven semesters in Chinese which are from the first semester of first grade to the first semester of fourth grade as a basis (C1~C7 were listed in Appendix).

Firstly, using GM(1,1) model to estimate the total score of the second semester of the fourth grade. Then, researchers get maximum value, calculated Gamma value of seven scores according to local GRA and then sorted based on Gamma value. The twenty students who had better score were selected initially. The result based on GRA is shown in Table 2.

Researchers take the twenty students' scores to proceed the prediction based on GM(1,1) method by Matlab software. Students' total scores of second semester of fourth grade in Chinese have been obtained and then sorted based on the scores to select ten students. Though using GM(1,1) method, Students' total performance of second semester of fourth grade in Chinese have been predicted, this can be the ordinal principle of selecting contestants of state of Chinese competition. The ten selected students are Student 28, 29, 4, 26, 31, 32, 25, 22, 1, and 16.

Table 2. Result based on GRA

Student	C1	C2	C3	C4	C5	C6	C7	Gamma	Sort
4	99	98	99	98	99	99	98	1.00	1
28	97	98	98	97	98	99	99	0.97	2
12	99	98	98	98	98	97	96	0.95	3
29	98	97	96	96	97	99	98	0.94	4
21	98	98	96	98	97	96	96	0.93	5
16	98	97	96	98	96	96	97	0.92	6
26	98	95	95	95	96	97	98	0.90	7
32	95	96	95	97	96	96	98	0.90	8
22	97	95	95	96	96	95	97	0.89	9
1	95	94	95	96	96	97	95	0.87	10
25	97	94	95	94	95	97	96	0.87	10
3	95	95	96	97	96	97	93	0.87	12
31	97	94	91	97	97	97	96	0.85	13
5	96	95	95	94	94	94	92	0.82	14
14	96	93	95	94	92	97	92	0.81	15
35	95	93	95	90	94	96	94	0.80	16
9	96	97	95	97	87	97	93	0.78	17
19	95	95	93	95	90	94	92	0.78	18
33	95	93	95	96	93	92	90	0.78	19
20	95	90	92	94	94	93	94	0.77	20

Table 3. Result based on GM(1,1) method

Student	C1	C2	C3	C4	C5	C6	C7	Predicting Score	Sort
28	97	98	98	97	98	99	99	99.07	1
29	98	97	96	96	97	99	98	98.68	2
4	99	98	99	98	99	99	98	98.60	3
26	98	95	95	95	96	97	98	98.23	4
31	97	94	91	97	97	97	96	98.15	5
32	95	96	95	97	96	96	98	97.54	6
25	97	94	95	94	95	97	96	96.88	7
22	97	95	95	96	96	95	97	96.67	8
1	95	94	95	96	96	97	95	96.60	9
16	98	97	96	98	96	96	97	96.47	10
12	99	98	98	98	98	97	96	96.21	11
21	98	98	96	98	97	96	96	95.74	12
20	95	90	92	94	94	93	94	95.14	13
3	95	95	96	97	96	97	93	94.88	14
35	95	93	95	90	94	96	94	94.88	15
14	96	93	95	94	92	97	92	93.73	16
5	96	95	95	94	94	94	92	92.22	17
9	96	97	95	97	87	97	93	91.94	18
19	95	95	93	95	90	94	92	91.47	19
33	95	93	95	96	93	92	90	90.53	20

### 3.3 The comparison of two selection methods

Table 4 shows the contestant selection's result of both traditional and GM(1,1) methods. The comparison results indicate that 8 of 10 contestants having more stable performance in both methods. This finding demonstrates that goodness of fit of both GM(1,1) and traditional methods are very high.

In term of traditional method students' performance in certain period of time can be seen, however, the variation of student achievement in the future cannot be predicted. Based on GM(1,1) method, this study have proceeded a detailed analysis of 8 contestants. The analysis results showed that only 5 of 8 contestants of fourth grades have Chinese predicted scores is higher than the scores of first semester. The five contestants were student number 28, 29, 4, 26, and 31 respectively. This result represents that these contestants' performance is stable as well sustainable growth potential. And other three contestants (Student 32, 26, and 31) had less predicting scores than their scores of first semester of fourth grade. Moreover, three contestants with trended backward in the future have been represented.

The most noteworthy students were students numbered 1 and 25. The two students' total average scores were both at the age of twelve. They have not been selected according to traditional method, but they have been selected according to GM(1,1) method. Though comparing their predicting score with their score of first semester of fourth grade, it showed the two students had

great progress. Thus it can be seen they had potential performance in Chinese.

Table 4. Results based on traditional method and GM(1,1) method

Traditional Method			GM(1,1) Method			
Student	Total Average Score	Sort	Student	C7	Predicting Score	Sort
4	98.57	1	28	99	99.07	1
28	98.00	2	29	98	98.68	2
12	97.71	3	4	98	98.60	3
29	97.29	4	26	98	98.23	4
21	97.00	5	31	96	98.15	5
16	96.86	6	32	98	97.54	6
26	96.29	7	25	96	96.88	7
32	96.14	8	22	97	96.67	8
22	95.86	9	1	95	96.60	9
3	95.57	10	16	97	96.47	10
31	95.57	10				

#### 4. Selecting Contestants Based on Multiple Subjects

In this section, the difference between traditional method and GM(1,1) method has been compared for selecting contestants based on multi-subject. Because many competitions must combine various abilities, teachers may be biased when they select contestants based on students' score of one subject. At this time, teachers need to consult students' score of various subjects and select contestants according to students' total performance of these subjects. In the same measure, we assumed the time of selecting contestants is the beginning of second semester of fourth grade and ten contestants are selected. The contestants are trained on second semester of fourth grade and enter a competition on behalf of their school when they are on fifth grades.

For example with national primary and high school science fair, most of time students participate as a team, and therefore the students must have the teamwork spirit, and have ability to operate experiment, analyze data, and write scientific article in the activity. If they can go to the final competition, they still need to make the bulletin board and explain scientific experiments in the field. According to the required abilities of students who participate the national primary and high school science fair, researchers took students' total scores of seven semesters in three subjects (Chinese, Mathematics, Nature and Science Technology) which are taught from the first semester of first grade and to fourth grade as a basis (C1~C7, M1~M7, and S1~S7 were listed in Appendix). Since nature and living technology subject is one part of living science subject in the first and second grade students, in the third grade, this subject is divided into separate subject. The score of nature science subject of up first and second grades presents students' scores of living science. Similarly, the reason of choosing total scores is because the total scores represent students' total performance of that subject. Abilities needed and corresponding subjects for

national primary and high school science fair were shown in Table 5.

Table 5. Abilities needed and corresponding subjects for national primary and high school science fair

Ability needed	Corresponding subject
Operating an experiment	Nature and Science Technology
Analyzing data	Mathematics
Writing scientific article and explaining contents	Chinese

Before analyzing students' scores, researchers tested the reliability of seven scores of every subject once again. Cronbach's  $\alpha$  value of every subject is larger than 0.96 (Table 6), which means the reliability of the scores of three subjects is very high.

Table 6. Testing reliability of every subject

Subject	Chinese	Mathematics	Science
Cronbach's $\alpha$ value	0.962	0.964	0.962

#### 4.1 Traditional Method

To continue using traditional method of selecting contestants in last section, researchers selected students based on students' average performance in various subjects in a certain period of time. First, average score of every subject was calculated separately. Then, total average score of three subjects was calculated according to average score of each subject. Finally, researchers sorted based on total average score in three subjects and ten students were selected. The result based on traditional method was shown in Table 7. After sorting based on traditional method, researchers took students' average performance in three subjects in a certain period of time on a basis of selecting contestants of national primary and high school science fair. The ten selected students are Student 4, 28, 29, 16, 26, 21, 12, 22, 32, and 5.

Table 7. Result based on traditional method

Student	Average Score in Chinese	Average Score in Mathematics	Average Score in Science	Average score of three subjects	Sort
4	98.57	97.57	97.71	97.95	1
28	98.00	96.43	96.86	97.10	2
29	97.29	96.57	96.86	96.90	3
16	96.86	96.86	95.57	96.43	4
26	96.29	96.71	95.71	96.24	5
21	97.00	95.86	95.86	96.24	5
12	97.71	94.57	95.14	95.81	7
22	95.86	95.86	95.00	95.57	8
32	96.14	94.29	94.57	95.00	9

5	94.29	95.86	94.71	94.95	10
25	95.43	93.14	96.29	94.95	11
3	95.57	92.00	94.29	93.95	12
1	95.43	91.14	94.71	93.76	13
14	94.14	92.29	93.86	93.43	14
9	94.57	91.14	93.57	93.10	15
19	93.43	92.14	93.57	93.05	16
31	95.57	89.57	92.43	92.52	17
20	93.14	92.71	91.29	92.38	18
13	92.29	90.86	93.71	92.29	19
33	93.43	90.86	91.43	91.90	20
35	93.86	88.71	92.43	91.67	21
2	90.43	90.71	92.57	91.24	22
7	84.57	93.14	94.71	90.81	23
27	89.00	88.43	91.29	89.57	24
17	92.86	83.29	88.29	88.14	25
15	90.71	84.86	87.71	87.76	26
30	91.43	81.43	88.71	87.19	27
6	87.43	86.43	86.86	86.90	28
23	83.43	84.43	89.14	85.67	29
24	82.86	84.29	89.00	85.38	30
11	89.43	75.57	87.71	84.24	31
8	90.29	74.29	82.14	82.24	32
18	83.29	75.71	82.00	80.33	33
34	79.29	63.57	79.86	74.24	34
10	75.71	58.29	77.57	70.52	35

#### 4.2 Traditional GRA Method

The similarity between traditional GRA method and traditional method is that both methods based on students' average performance in various subjects in certain period of time. The difference between them is sorting method. Traditional method is used to sort and to select ten students based on total average score of three subjects; traditional GRA method is used to get maximum value, to calculate Gamma value of three average scores according to local GRA, to sort based on Gamma value and then to select ten students. The result based on traditional GRA method was shown in Table 8.

Table 8. Result based on traditional GRA method

Student	Average Score in Chinese	Average Score in Mathematics	Average Score in Science	Gamma	Sort
4	98.57	97.57	97.71	1.00	1
28	98.00	96.43	96.86	0.97	2
29	97.29	96.57	96.86	0.96	3
16	96.86	96.86	95.57	0.94	4
21	97.00	95.86	95.86	0.94	5
26	96.29	96.71	95.71	0.94	6
12	97.71	94.57	95.14	0.92	7

22	95.86	95.86	95.00	0.92	8
32	96.14	94.29	94.57	0.90	9
5	94.29	95.86	94.71	0.89	10
25	95.43	93.14	96.29	0.89	11
3	95.57	92.00	94.29	0.86	12
1	95.43	91.14	94.71	0.84	13
14	94.14	92.29	93.86	0.84	14
19	93.43	92.14	93.57	0.83	15
9	94.57	91.14	93.57	0.83	16
20	93.14	92.71	91.29	0.80	17
13	92.29	90.86	93.71	0.80	18
31	95.57	89.57	92.43	0.80	19
33	93.43	90.86	91.43	0.79	20
35	93.86	88.71	92.43	0.77	21
2	90.43	90.71	92.57	0.76	22
27	89.00	88.43	91.29	0.70	23
7	84.57	93.14	94.71	0.70	24
15	90.71	84.86	87.71	0.64	25
17	92.86	83.29	88.29	0.64	26
6	87.43	86.43	86.86	0.62	27
30	91.43	81.43	88.71	0.60	28
23	83.43	84.43	89.14	0.56	29
24	82.86	84.29	89.00	0.55	30
11	89.43	75.57	87.71	0.48	31
8	90.29	74.29	82.14	0.41	32
18	83.29	75.71	82.00	0.38	33
34	79.29	63.57	79.86	0.14	34
10	75.71	58.29	77.57	0.00	35

After sorting based on traditional GRA method, researchers took students' total performance of three subjects in a certain period of time on a basis of selecting contestants of national primary and high school science fair. The ten selected students were Student 4, 28, 29, 16, 26, 21, 12, 22, 32, and 5 equally.

### 4.3 Traditional GRA method of the last three

The same at traditional GRA method of the last three and traditional GRA method is to calculate Gamma value of three average scores and to sort based on local GRA, the difference is the range of choosing scores. The scores based on traditional GRA method were students' scores of seven semesters in three subjects which are from first semester of first grade to first semester of fourth grade, but the scores based on traditional GRA method of the last three were students' scores which were close to current abilities. It referred to the scores which are from first semester of third grade to first semester of fourth grade. The purpose of such selecting is with the increase of subject content, the growth of students' age, the students' performance are not the same. When selecting contestants, teachers will choose the best students of the current performance. The

differences of students' performance are usually small in lower grade; the differences are more and more obvious in intermediate and higher grades. Thus researchers took students' scores of the last three on a basis of selecting contestants. The result based on traditional GRA method of the last three was shown in Table 9.

After sorting based on traditional GRA method of the last three, researchers took students' total performances which were close to current abilities in three subjects on a basis of selecting contestants of national primary and high school science fair. The ten selected students were Student 4, 29, 26, 28, 22, 16, 21, 32, 25, and 5

Table 9. Result based on traditional GRA method of the last three

Student	Average Score of the Last Three in Chinese	Average Score of the Last Three in Mathematics	Average Score of the Last Three in Science	Gamma	Sort
4	98.67	97.33	98.67	1.00	1
29	98.00	97.33	98.00	0.99	2
26	97.00	97.67	97.33	0.97	3
28	98.67	96.33	97.00	0.97	3
22	96.00	96.67	96.33	0.95	5
16	96.33	96.67	95.33	0.94	6
21	96.33	94.33	95.00	0.92	7
32	96.67	93.33	95.33	0.92	8
25	96.00	92.67	97.00	0.91	9
5	93.33	96.33	95.67	0.91	10
12	97.00	91.33	93.67	0.88	11
1	96.00	90.00	95.00	0.87	12
31	96.67	90.67	93.33	0.87	13
20	93.67	94.33	91.67	0.86	14
3	95.33	89.67	94.33	0.86	15
14	93.67	91.00	93.67	0.86	16
19	92.00	92.67	93.00	0.85	17
9	92.33	90.67	94.00	0.84	18
33	91.67	90.67	92.00	0.82	19
35	94.67	87.00	93.00	0.81	20
13	90.67	88.67	92.67	0.80	21
7	86.00	91.67	94.67	0.78	22
2	89.00	89.33	90.67	0.77	23
27	88.67	85.00	91.00	0.73	24
23	84.33	86.67	90.00	0.70	25
6	87.67	87.00	85.33	0.69	26
15	91.00	80.33	84.33	0.64	27
17	91.33	76.67	88.00	0.63	28
30	91.33	75.33	86.33	0.60	29
24	74.33	78.67	86.67	0.50	30

8	89.00	68.33	78.67	0.44	31
18	80.67	67.67	77.67	0.38	32
11	86.67	60.00	83.00	0.35	33
34	83.67	61.33	81.00	0.34	34
10	70.00	45.67	71.00	0.00	35

#### 4.4 GM(1,1) Method

Similarly, researchers used the advantage of GM(1,1) method which can predict students' next score to select contestants who have stable and potential performance in three subjects. Researchers took the total score of 7 semesters in three subjects (Chinese, mathematic, and nature science subjects) from the first semester of first grade to the first semester of fourth grade as a base of selection (As listed in Appendix).

Firstly, using Matlab software calculation and GM model to estimate the students' total score of the second semester of fourth grade (see table 10). Then twenty students who had better score in each subjects were selected. From the list of 20 selected students in each subject, the outstanding students in all 3 subjects were selected.

Table 10. Predicting scores in three subjects

Student	Predicting Score in Chinese	Student	Predicting Score in Mathematics	Student	Predicting Score in Science	Sort Every Subject in
28	99.07	26	98.40	26	99.98	1
29	98.68	22	98.08	4	99.28	2
4	98.60	29	97.46	29	99.23	3
26	98.23	20	96.81	22	98.28	4
31	98.15	4	96.80	25	97.54	5
32	97.54	16	95.94	28	97.33	6
25	96.88	28	95.93	5	96.20	7
22	96.67	5	95.74	1	96.01	8
1	96.60	21	93.09	32	95.75	9
16	96.47	25	92.93	7	94.80	10
12	96.21	31	92.91	9	94.80	11
21	95.74	32	92.68	16	94.73	12
20	95.14	19	91.53	21	94.41	13
3	94.88	9	90.80	3	94.20	14
35	94.88	7	90.58	20	94.03	15
14	93.73	33	89.94	31	93.61	16
5	92.22	1	89.17	33	93.15	17
9	91.94	23	89.05	19	92.93	18
19	91.47	14	88.52	23	92.87	19
30	91.47	12	87.32	14	92.54	20

The result in table 10 indicates that sixteen students who are outstanding in all 3 subjects were selected. Researchers got maximum value of predicting scores in three subjects individually, calculated Gamma value of three scores according to local GRA and then sorted based on Gamma value (Table 11). Though GM(1,1) method, Students' total performance of the second semester of fourth grade in three subjects were predicted, this can be the ordinal principle of selecting contestants of national primary and high school science fair. The ten selected students are Student 26, 29, 4, 22, 28, 16, 25, 32, 20, and 5.

Table 11. Result based on GRA

Student	Predicting Score in Chinese	Predicting Score in Mathematics	Predicting Score in Science	Gamma	Sort
26	98.23	98.40	99.98	1.00	1
29	98.68	97.46	99.23	0.97	2
4	98.60	96.80	99.28	0.92	3
22	96.67	98.08	98.28	0.83	4
28	99.07	95.93	97.33	0.78	5
16	96.47	95.94	94.73	0.56	6
25	96.88	92.93	97.54	0.56	7
32	97.54	92.68	95.75	0.49	8
20	95.14	96.81	94.03	0.49	9
5	92.22	95.74	96.20	0.41	10
21	95.74	93.09	94.41	0.40	11
31	98.15	92.91	93.61	0.40	12
1	96.60	89.17	96.01	0.25	13
9	91.94	90.80	94.80	0.15	14
19	91.47	91.53	92.93	0.08	15
14	93.73	88.52	92.54	0.00	16

#### 4.5 The comparison with four selecting methods

The results based on three traditional methods and GM(1,1) method were shown in Table 12. Though comparing with four selection methods again, it also showed that eight in ten contestants were selected no matter what kind of methods used. This case represented that the goodness of fit of the GM(1,1) method and three traditional methods are equivalent high and similar in multiple subjects. If only comparing the results based on traditional GRA method of the last three and GM(1,1) method, it even showed nine in ten contestants were selected. In these students, Student 25 was not selected based on traditional method and traditional GRA method. Until using traditional GRA method of the last three, the student was just selected. Thus it can be seen, Student 25 can also be selected based on GM(1,1) method, this represented using the method to select contestants can correctly select contestants who have better and better performances and is also a potential contestant.

As mentioned above, the using of three traditional methods showed only students' performance for a certain period of time, cannot predict the variation of students' scores in the future. Similarly, the detailed analysis of eight contestants based on GM(1,1) method found that the predicting scores of two contestants were better than their scores of the first semester of the fourth grade in three subjects. The two contestants were Student 26, and 29 respectively. This results also represented these contestants have stable and potential performance. And another four contestants (Student 4, 22, 28, and 5) had unstable performances, predicting scores of two subjects trended progressive and predicting scores of one subject trended backward. In addition, Student 16 trended backward in three subjects in the future. However, the student was still selected based on traditional methods. The most noteworthy students were Students 25 and 20. The two students' total average scores of three subjects were eleventh and eighteenth. They weren't selected according to traditional methods, but they were selected according to GM(1,1) method. Though comparing their predicting score with their score of the first semester of fourth grade, it showed the two students had great progress in three subjects. Thus, it can be seen they had potential.

Table 12 Results based on three traditional methods and GM(1,1) method

Traditional Method	Traditional GRA Method	Traditional GRA Method of the Last Three	GM(1,1) Method						
Student	Student	Student	Student	C7	Predicting Score in Chinese	M7	Predicting Score in Mathematics	S7	Predicting Score in Sort Science
4	4	4	26	98	98.23	97	98.40	99	99.98
28	28	29	29	98	98.68	96	97.46	99	99.23
29	29	26	4	98	98.60	97	96.80	99	99.28
16	16	28	22	97	96.67	97	98.08	97	98.28
26	26	22	28	99	99.07	97	95.93	97	97.33
21	21	16	16	97	96.47	95	95.94	95	94.73
12	12	21	25	96	96.88	92	92.93	97	97.54
22	22	32	32	98	97.54	93	92.68	98	95.75
32	32	25	20	94	95.14	95	96.81	94	94.03
5	5	5	5	92	92.22	96	95.74	95	96.20

## 5. Conclusions

The purpose of this paper was to select correctly students who have stable and potential performance. The sample of the paper was 35 fourth grade students in Central Taiwan. Researcher used students' learning scores of seven semesters in various subjects which have been taught from the first semester of first grade to fourth grade to predict students' scores of the second semester of fourth grade based on GM(1,1) method. The results were as follows:

- (1) By the comparing between a traditional method with GM(1,1) method, the study found that, whether in single or multiple subjects, the goodness of fit of both methods are equivalently high. The use of both two methods can select contestants who had stable performances.
- (2) Regarding to contestants selection for multiple subjects, the goodness of fit of traditional GRA method of the last three and GM(1,1) method is the highest. This represented that using GM(1,1) method can more correctly select contestants whose performances are more and more good, it also means that they are potential contestants.
- (3) Based on GM(1,1) method, students who had unstable performances have been filtered out. Based on traditional method, it only showed students' total performances in a certain period of time.
- (4) Regarding contestant selection, the combination of GM(1,1) method and grey relational analysis to sort students according to their scores in various subjects can improve traditional method. This method is an innovative method to provide teachers for selecting contestants both single subject and multiple subjects.

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## Appendix

Student	C1	C2	C3	C4	C5	C6	C7	M1	M2	M3	M4	M5	M6	M7	S1	S2	S3	S4	S5	S6	S7
1	95	94	95	96	96	97	95	93	90	92	93	92	90	88	96	93	94	95	94	96	95
2	95	89	89	93	89	91	87	95	90	92	90	95	90	83	95	92	94	95	93	89	90
3	95	95	96	97	96	97	93	96	92	95	92	93	89	87	93	93	96	95	95	95	93

4	9 9	9 8	9 9	9 8	9 9	9 9	9 8	9 8	9 8	9 8	9 7	9 8	9 7	9 7	9 8	9 7	9 7	9 6	9 9	9 8	9 9
5	9 6	9 5	9 5	9 4	9 4	9 4	9 2	9 3	9 6	9 8	9 5	9 8	9 5	9 6	9 3	9 3	9 5	9 5	9 7	9 5	9 5
6	9 0	8 7	8 5	8 7	8 8	9 1	8 4	8 3	8 9	8 6	8 6	9 0	8 7	8 4	8 8	8 7	8 4	9 3	8 3	8 9	8 4
7	8 2	8 2	8 6	8 4	8 7	8 9	8 2	9 2	9 4	9 5	9 6	9 3	9 0	9 2	9 6	9 5	9 4	9 4	9 3	9 7	9 4
8	9 6	9 0	8 8	9 1	8 9	8 1	7 7	8 8	7 6	8 2	7 9	7 5	6 6	6 4	8 3	8 1	8 7	8 8	7 7	8 2	7 7
9	9 6	9 7	9 5	9 7	8 7	9 7	9 3	9 5	9 0	9 1	9 0	9 2	8 8	9 2	9 1	9 3	9 3	9 6	9 4	9 3	9 5
10	8 2	8 7	7 3	7 8	7 3	7 1	6 6	7 1	7 4	6 5	6 1	5 8	4 8	3 1	8 3	8 1	7 8	8 8	6 9	7 3	7 1
11	9 1	9 0	9 2	9 3	8 8	9 0	8 2	9 0	8 9	8 9	8 1	7 2	5 8	5 0	9 3	9 0	9 0	9 2	8 3	8 7	7 9
12	9 9	9 8	9 8	9 8	9 8	9 7	9 6	9 8	9 7	9 7	9 6	9 5	9 4	8 5	9 7	9 7	9 5	9 6	9 7	9 5	8 9
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16	9 8	9 7	9 6	9 8	9 6	9 6	9 7	9 7	9 7	9 7	9 7	9 8	9 7	9 5	9 7	9 7	9 4	9 5	9 6	9 5	9 5
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31	9 7	9 4	9 1	9 7	9 7	9 7	9 6	9 2	8 8	8 2	9 3	9 2	8 8	9 2	9 2	9 4	8 8	9 3	9 3	9 5	9 2
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*Creative Learning Space: A Re-shaping of KMUTT Landscape Master Plan Towards Sustainable University*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

This research is about the re-shaping of spatial development to achieve sustainable future of King Mongkut's University of Technology Thonburi (KMUTT), a polytechnic institution as first initiated, which is to become a multidisciplinary university. KMUTT was ranked 17<sup>th</sup> in UI Green Metric Ranking of World Universities 2010 and 47<sup>th</sup> in 2011. Now, we are facing the challenge of the following issues: (1) How to keep up with our record, how to achieve better Green Index and how to sustain it? (2) Is the image of green within the perception of KMUTT community and considered as the KMUTT identity? (3) How to build *the Green Heart Leader* among our students? Thus, this paper aims to demonstrate the roles of integrated learning space which has been superimposed onto the university master plan in order to transform the campus space and infrastructure towards sustainable green and clean university. The reshape of landscape and functions will make the green concept visible. As an integrated learning garden, it will facilitate teachers and learners to bring knowledge out of classroom or laboratory, and to share and interact with others in public spaces. It will encourage and support KMUTT community members to carry out activities which promote green awareness. Hence, the development of Creative Learning Space will be used as a key driven mechanism to build green heart society and knowledge community, which is the core value of KMUTT.

**Keywords:** Sustainable Green and Clean University, Creative Learning Space, Green Heart Leader, Transformed campus spaces

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## 1. Introduction

King Mongkut's University of Technology Thonburi (KMUTT), Thailand was known as a skillful polytechnic institution since it was established in 1960. Its first objective was to train technicians, technical instructors and technologists (Planning Department, KMUTT, 2011). After 50 years, KMUTT developed its role to serve Thai society as one of the leading institutions in science and technology. KMUTT's educational role keeps changing according to the expectation of industries and society, so as to the teaching and learning methodology that support the activities of staffs and students. Its direction is to be a multidisciplinary university which collaborating among science, technology and creativity. The long term goal is to construct a lifelong learning behavior in our students. The desired change in students' learning behavior requires an environment which facilitates and enhances them in terms of physical and digital systems. Recently, KMUTT has announced its role as leader in green innovative research university with its focus on environmental technology contributes to the society. The effort outcome in environment and energy management is being ranked the 17<sup>th</sup> in UI Green Metric of World Universities 2010 and 47<sup>th</sup> in 2011 (UI, 2011). Despite its good record, KMUTT has been struggling to build its identity as green even among its own community. Now, we are facing the challenge of how to make it visible to all and sustain a green record and how can our students become change agents in sustainable development. This paper demonstrates Physical facility Management Unit (PMU)'s work of place making to provide an effective integrated learning space in green in order to tackle 2 tasks, to make sustainable green and clean campus visible and to encourage knowledge-based community.

## 2. Reviewing of the relationship between space and learning

The study of learning spaces has been increasingly discussed among educators and learners over recent years. Many schools, colleges and campuses have altered their classrooms, and offices to be more informal learning spaces such as learning coffee corners, informal seating areas, corridor alcoves or social hubs, equipped with technological support system. An attempt lies within the assumption that in providing more informal, flexible and social interaction spaces in institutions will shift or change the conventional teaching learning model that limits self-wisdom (JISC, 2006). In the book *21st Century skills: Rethinking How Students learn*, Bob Pearlman talked about "Designing New Learning Environments to Support 21st Century Skills" that schools are now be able to move away from teacher-directed to learner centered workplace for a collaborative culture because of technology skills. He underscored that 21st century knowledge and skills are not only built upon core content knowledge, but also they include information and communication skills, thinking and problem-solving skills, interpersonal and self-directional skills, and the skills to utilize 21st century tools, such as information and communication technologies. Eventually, this new pedagogy requires a change in physical learning environment (Pearlman, 2010). Learning innovators commonly argued about learning places beyond classroom that can accommodate casual learning such as extended studying areas and collaboration zones. Pearlman reviewed the new learning spaces in 5 institutions in U.S.A. and U.K. and concluded that though the design is different in all, the common facilities are the space for individual work, small-group work, cross-disciplinary group work, casual lectures and talks, presentations, breakouts, and cluster meetings.

In case of Thai higher education, high competition in globalization stimulated the search for local knowledge and wisdom. Paitoon Sinlaratr (Sinlaratr, P., 2008) mentioned the paradigm shift of higher education learning model that requires 7 necessary key points in post-globalization. Some of those are to train critical thinking skills and creative ideas, to encourage individualization as well as socialization, and to build new network of knowledge by collaboration and interaction.

In KMUTT case, we realized that a space facilitating self learning would strengthen the 21st century learning behavior and then would lead to lifelong learning of our graduates. Traditional classrooms and laboratories are still important to build core knowledge and research skills, but how to bring that knowledge out to share with others is equally important for sustaining the continuity of learning. Thus, this paper demonstrates a plan to transform the entire 52 acre KMUTT campus including most building first floor into creative learning spaces and to transform the campus core space to be a common learning garden. Through the integrated common open space approach, KMUTT is expected not only to utilize its limited space as shared space but also to construct the inside-out learning behavior among its communities.

### **3. Methodology of the study**

The method of study has been conducted through the critical thinking process from data gathering and reviewing stages to planning and designing. The critical thinking process for the study of transforming KMUTT into creative learning space involves

- review and analysis
- goal setting
- proposing revised infrastructure master plan
- mapping the role
- reviewing the organizations related
- designing the physical development plan.

In order to determine the possibility of KMUTT's potential to transform its space towards sustainable learning spaces, 3 main factors have to be taken into account. They are physical environment, policy, and users. The study has been conducted through literature review, interview, measurement and stakeholder meetings. The role of learning space was mapped onto the existing school plan and structures according to potential of each zone. Finally, the learning space model as well as physical development plan is published to get feedback since it should be a common understanding of KMUTT communities to utilize space with the same direction as an overall policy.

### **4. Review of KMUTT policy towards sustainable direction: From philosophy to visibility**

In 2006 KMUTT laid the roadmap for its vision in 2020 as follows:

1. Committed to the Search for Knowledge, "Lifelong Education"
2. Determined to be at the Forefront of Technology and Research
3. Maintaining the Development of Morally Correct and Proficient Graduates
4. Endeavoring for Success and Honor in order to be the Pride of Our Community
5. Striving to Become a World-Class University

Recently, KMUTT has announced its positioning as a pioneer in green innovative research university with its focus on environmental technology which is advantageous to the society. The strong emphasis is placed on knowledge integration between its members and collaboration with society.

#### 4.1 Policy on Sustainability

KMUTT has announced the direction towards Sustainable Green University called KMUTT Sustainability Policy Plan since 2005. Its mission is to educate the students and encourage them to learn outside classroom and transform our campus as an ideal environment for developing awareness and innovative solutions to problem that will improve the world for current and future generations. The policy aims to support the development of sustainability leadership in all activities from operations, and teaching, to conducting research.

KMUTT commitments to sustainability are (EESH, KMUTT, 2012),

- To be a Green University providing a role model on Energy, Environment, Safety Management Systems, promoting the application of all these activities within the university.
- To strive for continual improvement in energy, environment and safety management systems to help achieve sustainability for all.
- To make our students and staff to be change agents for helping community & society in making a better quality of life by expanding the good Energy, Environment Safety management system to surrounding communities and societies.

The continuous policy has been constantly executed accordingly through the administrative and knowledge management system. However, the knowledge in green technology is still limited in specific groups of experts, so as to the green management. The perception in green or sustainability remains unrecognized by all to be KMUTT identity because the tangible campus environment has not yet reflected the matter. To bring green knowledge and innovation down to accessible green open space would make the sustainable university campaign visible to all. The school's serious action to build campus green space will bring back sense of belongingness and KMUTT pride of all stakeholders and will encourage them to participate and contribute more in the commitment towards sustainability.

#### 4.2 Policy in Learning

Based on KMUTT Roadmap 2020, the mission to construct new approach to learning and network, and to utilize resources for learning is integrated into every level of action plans. KMUTT has set 6 targets plus 1 student core value called 6+1 flagships to be strategic approaches for Development Plan11 (2012-2016). After several meetings, some requirements of facilities were identified to support 6+1 flagships such as,

##### **25 January 2011 Retreat: The Making of Plan11**

- Educational display
- Learning media by students
- Knowledge museum
- Alternative learning Space throughout the entire University
- Space for multidisciplinary-task working
- Enrichment atmosphere
- Space for knowledge interchange
- Street performance (for social +KMUTT)

Social distribution (education+ green space)  
Space management and effectiveness  
Most utilized space (24 hour University)  
Safety space  
Digital learning space  
International center

Hence, the university space needs to re-organize, alter and transform to support those activities. The design of learning garden should answer to those requirements and more.

## 5. In making of creative learning space

The policy on sustainability and learning has been put into action plan to transform the campus common ground into an ideal environment for developing environmental awareness and providing integral learning atmosphere. At present, the campus open spaces are scattered, lack of linkage and appropriate flow with low safety and sometimes conflict with other activities. Most spaces are not in good design and have not been assigned appropriate functions. PMU is appointed to do a revised master plan study for KMUTT at Bangmod as a creative learning space for KMUTT members, visitors and surrounding communities, which is commonly called learning garden or Education Park.

Refer to KMUTT philosophy (KMUTT, 2002), “**Education Park** means a beautiful shady place that provides peaceful atmosphere, encouraging enthusiasm for intellectual dialogs and new ideas, that support KMUTT to produce young graduate with greater knowledge and virtue for improving our society . The pleasurable park atmosphere will make users inside the garden feel fresh and comfortable, so as to have open-minded for new things and eagerness to exchange opinions”. KMUTT learning garden is creative environment that will respond to users’ behaviors and interaction, will foster knowledge by bringing out the research and innovation from classrooms to KMUTT communities and its neighbors.

In making creative learning space, 4 key components are needed,

- **Space**
- **Learning**
- **Design**
- **Driven mechanism**

### 5.1 Space: Reshaping the space towards sustainability

To construct the integrated learning space in campus common ground, the important tasks KMUTT management team has to agree upon are,

Restructuring the campus towards Green Index,  
Re-shaping Campus master plan to win back public space,  
Transforming the entire campus to be learning, living, sharing place,  
Encouraging digital-learning and casual studying,  
Creating a sense of belonging and identity of green.

From the infrastructure plan which was clustered with workshops, traditional classroom and laboratories. All those buildings were occupied by heavy tools, chemical or mechanical devices for specific groups. The review of existing condition was done to increase the amount of public space. Winning back the public open space is the concept to alter private occupied space to be shared common space. In KMUTT plan 9 (2002-2007), the revision of KMUTT

master plan at Bangmod campus has drawn a guideline for infrastructure and open space development. At the end of 2011, the central area of 20 acres was cleared to be public open space connected to semi-open space on the first floor of every building. Those common grounds will serve as the main pedestrian axis to increase a chance of interacting. The master plan 2006 guideline for open space (Limpaiboon, A., Opartpongsakorn A., 2006) stated that,

- University should have adequate safe green space
- University should have public space to support community activities
- University should have space for interaction and demonstration
- Every building should have personal space for reading, group working, relaxing
- Everyone must respect space for public
- All of these should be in easy and good maintenance



Fig. 1: A revised masterplan 2006 shows the demolishing of some old workshops to transform the central area to common open space

### Restructuring campus route

Energy saving and environmental friendly is a main concern for planning. Since Bangmod campus is not big in size, alternative travelling by non-fuel mobility is appropriate and possible to be a major linkage. The shady 2 pedestrian corridors will provide convenient connection of the north-south, east-west zones in shortest distance to access every building. Slow travelling mode also provides a chance of observation and social interaction when they move through the park and pass by the activities along the way. Moreover, the continuous green corridor will unit plots of learning spaces local among campus buildings and demonstration sites together as living museum.

Traffic calming techniques such as sharing road space, loop road and limited entrance-exit are used to direct vehicles. Parking building is built on the front to reduce traffic volume in academic zone.

- The revised conceptual master plan has been proposed to be pedestrian approach, so the inner loop will be car, and bicycle free zone.
- Walking is first priority by direct axis, second is bicycling as inner loop, and the vehicle and service will access from ring road.
- East-west pedestrian axis is the linkage from surrounding neighbors to campus, North-south axis is main linkage from dormitory to academic zone

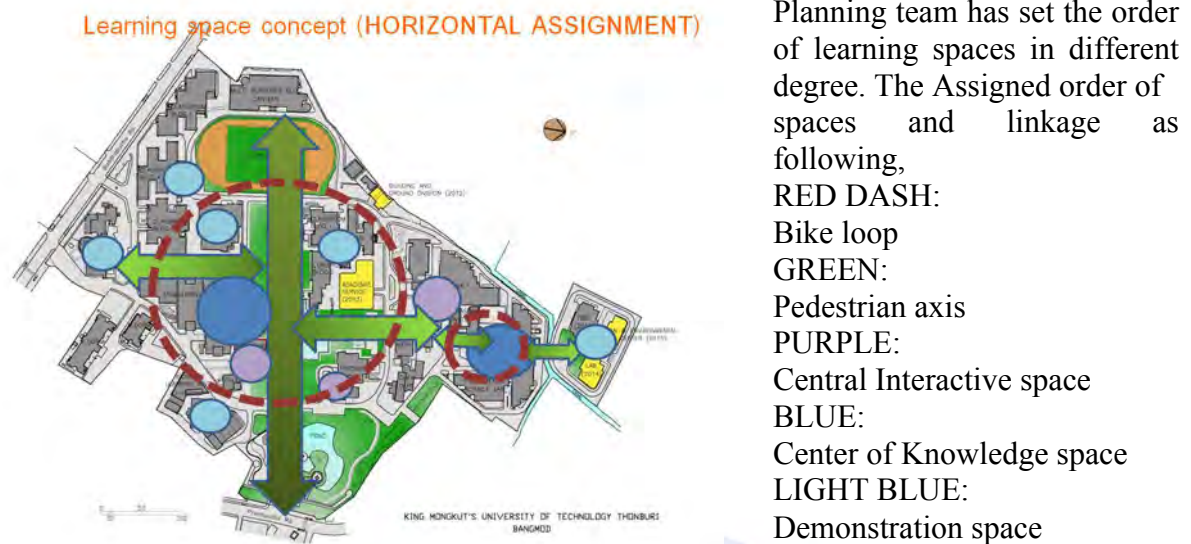


Fig. 2: A Learning space plan 2011.

### Mapping the Learning Space

After KMUTT had announced to construct learning space throughout the entire campus, a plan to utilize all first floors as more public necessitated most buildings to reorganize and redesign their space. Primarily, the role of learning spaces has been assigned to create priority, varieties and dynamism that bring visitors move through the campus like they are walking in a living museum. We have to re-think of space usage from knowledge in Science and Technology to ignite the Imagination and Innovation. KMUTT Interpretation Center and its park create chances of social-interaction to develop soft skill as well as inspire intelligent activities.



Fig. 3: Assigned role of learning space to map the Space for Creative Learning in campus

## 5.2 Learning: Space needed for learning behavior

The model of physical spaces used in KMUTT learning space was adopted from The Seven Spaces of Technology in School Environments by Evan McIntosh (McIntosh, 2010), the type of physical spaces needed to encourage 21st Century learning habit. Those 7 learning spaces are, Individual Space, Group Space, Publishing Space, Performing Space, Participation Space, Watching Space, and Data Space.

He talked about how to map technological spaces to physical ones to adjust the physical school environments to harness technology even better. Whilst he compared interior spatial arrangement to technological spaces (facebook, google etc.), those space terms are also commonly used in behavior settings of built environmental design in landscape architecture.

In KMUTT case study, we reviewed the learning behavior in 1<sup>st</sup> floor library spaces after its renovation based on the 7spaces, and how users respond to each area. We found that the design varieties of seating and flexible furniture arrangement attracted more teenagers and modern instructors than conventional adults. The user friendly learning environment becomes a favorite place for group appointment or even casual class lectures.

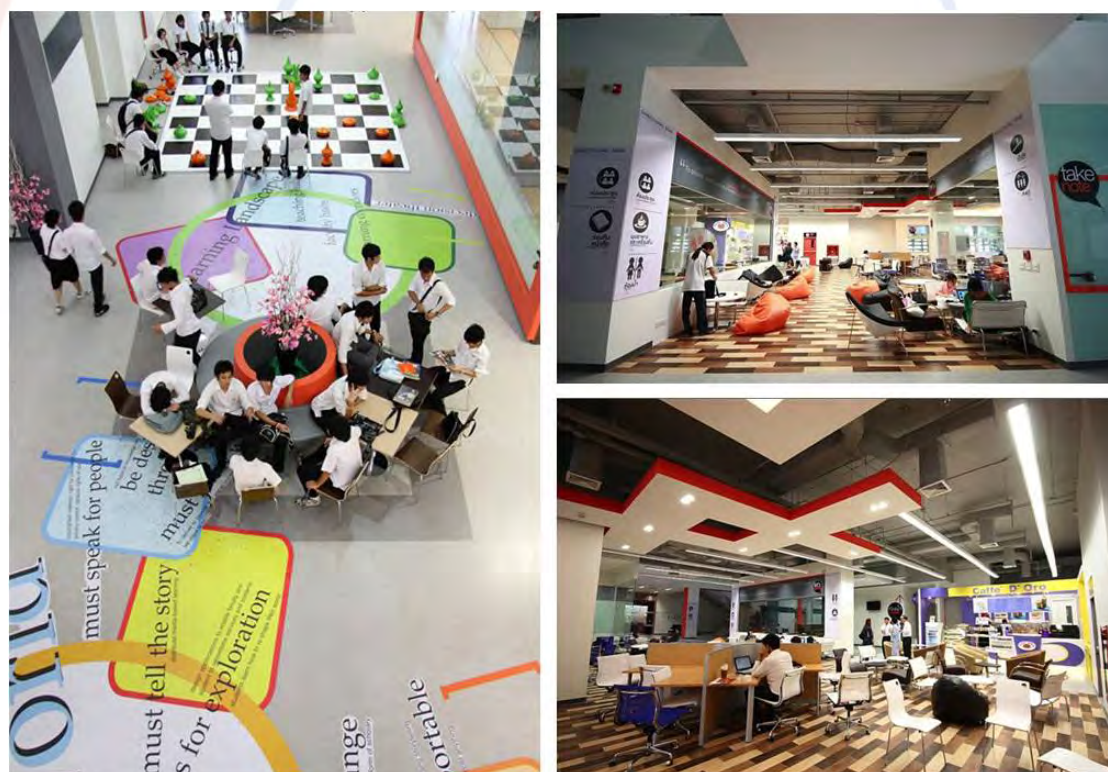


Fig.4: The example is the adaptation of KMUTT library space to be casual learning space which students enjoy working sharing in casual atmosphere.

PMU applies those seven learning spaces on the entire campus in order to transform our semi public and outdoor areas into common ground of lifelong learning. The inside-out model of learning will be developed naturally as well as the soft skills in interacting with others. The critical thinking skill will be integrated not only in their learning but also in their living. Thus, it becomes a behavior of learning anytime anywhere and any way. The self-wisdom which is the true knowing will urge them to expand their knowledge to others. The space that provides

chance of interaction and performance will inspire idea exchange and discussion to construct new knowledge. As a result, that knowledge is not limit only in lessons.

Learning anytime any way and anywhere

Learning should happen anywhere and anyhow. Students will develop the life-long learning habit, but then the environment should provide opportunity and raise their curiosity. The outside-in model is to create the spatial environment with the green innovative contents and facilities, so users will be inspired by the surrounding and will generate new ideas. Creative environment in green or *learning garden* is the environment that fosters opportunities, raises curiosity, encourages opinions and supports learning behaviors.

### 5.3 Design: Designing the Learning environment in green (*Learning garden*)

The well designed, effective planned space is very important to create the inside-out model of learning. What is important is that the spatial design should link to the institution's vision and strategic mission in teaching and learning. The KMUTT learning spaces should be a physical representative of its core value intersected with its diverse creativity and cultural resources that are built over time. The transformation of central space to be common learning garden will have high impact in creating a sense of belonging and unity as well as promoting healthy community and diversity in school. This will make the space itself sustainable and will become the valuable asset of the institution.



Fig.5: The Landscape master plan for KMUTT learning garden

Strategic Image: Green and Clean atmosphere

The image of the park is built upon these criteria,

- The park should reflect the identity and culture of the institution
- The activity should support community involvement in liberated and creative culture
- The atmosphere should inspire curiosity, creativity and casual learning
- The areas should be flexible and enterprising
- The zonings should strengthen sharing and public contribution
- The overall manner should be international learning atmosphere
- The holistic approach should be green and clean campus

### Outside-in: Towards sustainable campus

The content of sustainable green is the main theme of learning garden. The place will support KMUTT community to bring green knowledge out of laboratory and classroom to demonstrate and share in outdoor and semi-outdoor spaces. The space will encourage a chance of casual learning in natural light. The infrastructure must provide convenient non-fuel mobility and digital-learning to reduce use of resources.

### Content: Innovative Park

Creative Learning Space concept made visibility: Green approach/passive energy saving /Green image. The design of central space or learning garden is the integration of green knowledge and green technology into landscape design to allow users to have access to knowledge while they are walking through or while they are in the garden. The using of green technology in designing the spaces is the attempt to encourage users to think and to be involved in green advocacy.

### Functions: Integration of Learning Spaces.

The 7 learning spaces are integrated to each zone in the park to support various learning behaviors. Fig.6 is the gallery of space examples in Wetland zone.



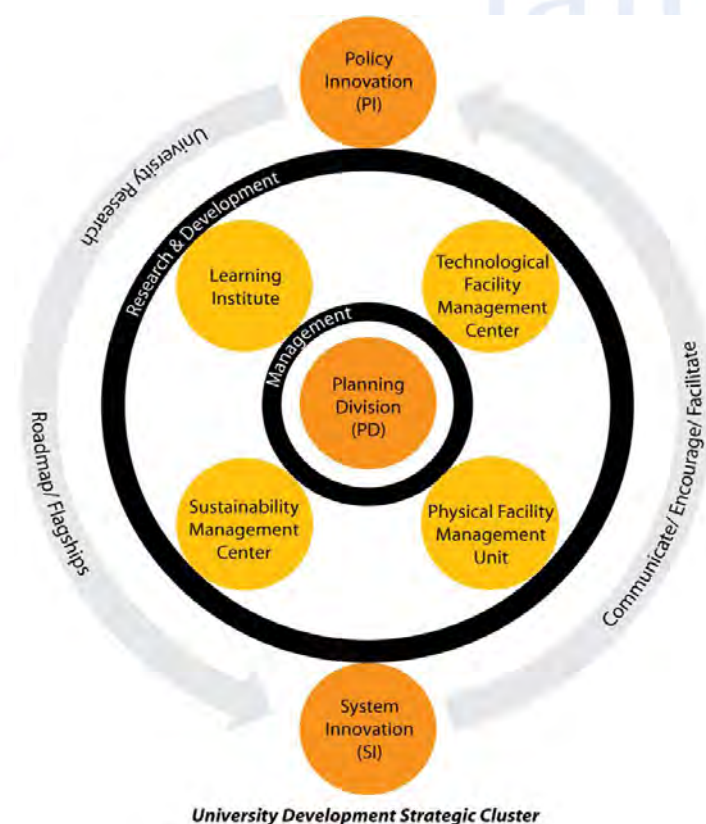
Fig.6: The example of idea in making the garden that response to learning behavior, 7 learning spaces are applied into designing each zone of the garden

#### 5.4 Driven mechanism

The least but not last important component is the “driven mechanism”, the working collaborations among related strategic clusters. It is the most significance to make the learning space sustainable (Mengveha, 2012). From policy to plan, from plan to implementation and from implementation to action, every unit must be geared towards the same direction. Teaching learning methodology has to change and the management needs shift how it works, the communications should be delivered to all stakeholders.

The 4 clusters to assist Planning Division are,

- LI or Learning Institute: Develop research methods, learning tools and curriculums to facilitate learning efficiency of KMUTT staff, students and Thai citizens. This unit is in charge of the Learning teaching programs.
- Sustainability Management Center (former EESH): Develop and manage activities towards sustainable energy, environment, safety and health. Mainly, this unit mainly runs the green and clean program and activities.
- TM or Technological Facility Management Center: Develop learning environmental system in terms of technological support such as e-kmutt project. This unit is in charge of technological support.
- PMU or Physical facilities Management Unit: Develop spatial learning environment system and conduct physical design and planning. This unit is charge of physical facilities and infrastructure support.



System Innovation (SI) and Policy Innovation (PI) are 2 Units to gear the collaboration model.

PI is in charge of policy direction and SI is in charge of developing the system that manages and facilitates the school development

Fig.7: working diagram of University Development Strategic Cluster towards Sustainability of KMUTT proposed by Nimit Mengveha and Apinya Limpai boon (Mengveha, 2012).



*Investigation on Social Interaction and Learners' Perception in a Virtual World*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

The aim of this study was to investigate learners' social interaction and perception of English learning in a virtual world, Second Life. More specifically, the use of social strategy and affective strategy of language learning in a virtual world were examined and compared with a traditional classroom. College English majors of a University in Southern Taiwan were the participants; they were all native Taiwanese and speakers of Chinese Mandarin. The six experiments were scheduled for two hours every week over six weeks in a period. The data was collected and analyzed in qualitative and quantitative methods from surveys and interviews. The results of the quantitative data showed little social and affective strategy used by learners in a virtual world. However, the results from the quantitative data revealed the importance of sociability and a certain degree of satisfaction of English learning in a virtual world. This study showed learners' motivation and perception increased significantly and learning experiences were positive in a virtual world.

Key words: Virtual world, Second Life, learners' motivation, learners' perception, social and affective strategies

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## INTRODUCTION

The purpose of this study was to investigate learners' perception and motivation of language learning in a virtual world, in terms of social and affective strategies. It examined how well they perceived and how they were motivated by a technology-enhanced language learning environment, Second Life (SL). Furthermore, to explore the applicability and flexibility of the SL used in educational purposes. Most Taiwanese students had less confidence and a lower speaking competency due to the lack of adequate opportunities and situations to use English for communication. Hence, providing learners with a situated learning platform and ample interactive classroom activities to carry out meaningful conversations was necessary for any future advancement in education. Computer-assisted language learning, virtual learning, teaching method, learning strategies, and motivation in language learning were elaborated.

## Literature Review

### *Computer-Assisted Language Learning*

Computer-Assisted Language Learning (CALL) refers to a technology that facilitates language learning. Since the 1980s, the CALL had gradually shifted its focus towards learners and was regarded as a tool controlled by learners (Kern & Warschauer, 2000). Wiebe and Law (2005) noted its effectiveness and impact on learner development and also pointed out the CALL had provided a wide range of beneficial features to the learning process. However, learners' perception toward technology use also needed to take into consideration. Perceived usefulness and perceived ease of use were two key predictors that presented perception of technology use. Perceived usefulness was defined as the degree of one's' belief to use technology that enhanced performance (Davis, 1989) and it had been applied in the context of personal use of technologies outside the workplace as well (Venkatesh & Brown, 2001). Davis stated that perceived ease of use was defined as ones' effort required when using the technology processing for the perceived extent. Besides, perception of technology played a crucial role in predicting and determining learners' acceptance of technology use, and defined perceptions as a motivation for learners to use a technology. They believed technology helped them perform better and potential users perceived it as easy to use.

### *Virtual Learning*

Virtual worlds were defined as 3D online virtual environments (Schiller, 2009), simulated and immersive environment with graphical representations (Shen & Eder, 2009). IbÂñez et al. (2011) pointed out virtual worlds were 3D interactive simulations which immersed

participants into learning situations where they practiced and received an individualized feedback. Simulations involved real-life situations that promoted student's engagement (Shih & Yang, 2008). Lam (2004) claimed that learning in a 3D game-like virtual world reduced learners' anxiety while having face-to-face conversation; language learners felt more comfortable, confident, and became fluent in an online chat room while speaking English as their second or foreign language. The SL was one of the active virtual worlds in higher education. The SL, a game-like platform that combined academic concepts and meaningful plays, provided a stage for learners immersed in the target language community and socialized in an online virtual room through chat, telegrams, emails and complete task-based quests. In rich graphic object-oriented worlds, themes of social responsibilities and educational quests, learners obtained more chances to use English, became more familiar with English and further increased their language production.

### ***Teaching Method***

Britto (2007) stated every method influenced the practices, reflected that moment of the educational fashion, and affected the institutional setting and the selection of materials available. Leah (2012) stated that every teaching method had its own significant advantages and valuable strengths. Norman and Spohrer (1996) identified that the teaching methods were the key elements toward teaching and learning. Hence, teachers generally alternated teaching methods according to the learners' age, language proficiency, curriculum design, school policy or other concerns. Task-Based Language Teaching (TBLT) appeared to develop the classroom practices and procedures which were based on communication and meaning (Britto, 2007). Ellis (2003) called the TBLT a stronger version of the Communicative Language Teaching since it provided the basis for the entire language curriculum. The TBLT involved real communication, meaningful tasks, meaningful learning that supported learners' language knowledge (Robinson, 2011). It also required learners' problem solving skills, such as, learners interacted communicatively and solved the given tasks purposefully. Moreover, instructional materials of the TBLT were able to be adapted for various situations, for example, a wide variety of media, such as newspapers, television and the Internet, were used as teaching materials. Those were designed as "task focus" or "task-based activities (Richards & Rodgers, 2007).

### ***Learning Strategies***

Learning strategies were important toward foreign language learning because of several reasons: firstly, learners were mentally active and had control over their own learning. Secondly, proficient strategy users learned faster on new contents (Chamot, Uhl & others, 1990). Learning strategies assisted learning tasks which achieved highly successful performances. Learning strategies were classified into direct and indirect strategies:

cognitive, memory and compensation were direct strategies (Chamot, et al., 1990); metacognitive, social and affective strategies were indirect strategies. Strategies should be integrated into regular curriculum and it works better if the teaching materials are challenging.

Affective strategies were the techniques that helped learners gain better control over emotions, attitudes, and motivations toward language learning which involved self-talk, the redirecting of negative thoughts about one's capability (Noormohamadi, 2009). Both were regarded as crucial criteria for language learning. Affective strategies helped learners' lower their anxiety, encouraged them and took their emotional temperature (Oxford, 1990). Affective filter of the learner was pointed out as one of the very biggest influences on the success or failure of language learning by Oxford. Social strategies were considered as actions which involved other people in the process of language learning, such as asking questions, interacting with other people and empathizing others (Noormohamadi, 2009). Asking questions helped learners acquire the intended meanings, and further assisted understanding. It also encouraged learners to continue a conversation in a meaningful way. Empathy was trying to understand and feeling someone else's perspective.

### ***Motivation in Language Learning***

Learning motivation was also regarded as the assessment and expectation of learners toward specific learning purposes (Wigfield & Eccles, 2000). Motivation was one of the keys that influenced the successfulness of language learning (Dörnyei & Otto, 1998). Gardner (1985) identified motivation as the most influential factor in learning a new language. According to Gardner, a motivated learner was eager to learn the language and willing to pay with effort to sustain the learning activity. A highly-motivated learner wanted to learn the language, enjoyed learning the language, and strived to learn the language (Gardner, 1985). Motivation had been considered crucial in the concept of language learning. First of all, Wu and Marek (2010) stated learners' motivation played an important role in learner-centered and active learning experience. They found motivation increased when learners felt more comfortable interacting in English. Second, Lopez (2010) explained there were some scholars and researchers interested in learners' motivation which related directly to learners' expectations for success and accomplishments if these learners contributed to effort and persistence (Eccles, 2005; Wigfield & Eccles, 1992). Third, motivation improved the consequence of negative learning experiences that motivated the learners (Sakai & Kikuchi, 2009).

### **Research Problems of This Study**

Previous literature reviews placed an immense focus on virtual learning in the classroom or

for educational purposes (Wagner & Ip, 2009; Warburton, 2009; Shen & Eder, 2009). However, few studies mentioned the design of teaching content and task design. Besides, the studies of using technology to motivate learners were limited (Reber, 2005; Issroff, 1994). The present study designed the tasks and activities as well as constructed teaching materials by the researcher and embedded the learning materials in a virtual world, which showed a distinct difference from other studies. Tasks were designed based on engaging learners into activities; having more interactions with other learners and helping them gain problem-solving skills.

### **Statement of Research Questions**

Inspired by the prior studies and current trend of using technology in second language learning and learning languages in a virtual world, the researcher examined participants' perceptions and motivation in terms of the use of social and affective strategy in a virtual world and compared the results with the traditional classroom. Furthermore, the future academic application of using the SL as an instructional tool was visible. The researcher examined the following four research questions:

RQ1: What were the differences in social strategy used between a traditional classroom and a virtual world?

RQ2: What were the differences in affective strategy used between a traditional classroom and a virtual world?

RQ3: What was learners' motivation toward language learning in a virtual world?

RO4: How did learners perceive language learning in a virtual world?

## **METHODOLOGY**

### **Settings**

The six experiments all took place in a traditional classroom as well as a computer lab of a university located in southern Taiwan. Every experiment took two hours a week over a six week period. This study was conducted in a pre-paid land called Ben's Lab constructed by a graduate student whose major was E-learning Design and Management (see Appendix A). Participants could take the elevator to different floors (see Figure 3.1).



Figure 3.1. Participants took the elevator to different floors

### Participants

There were fifty four participants engaged in total and they were divided equally into a control group and an experimental group. There were twenty- six participants in each group. They were all freshmen of a Taiwan university's Foreign Language Department. Mandarin Chinese was their first language and English their second language. They had no experiences to either live or study abroad. Their English proficiency was approximately the intermediate-level of the GEPT.

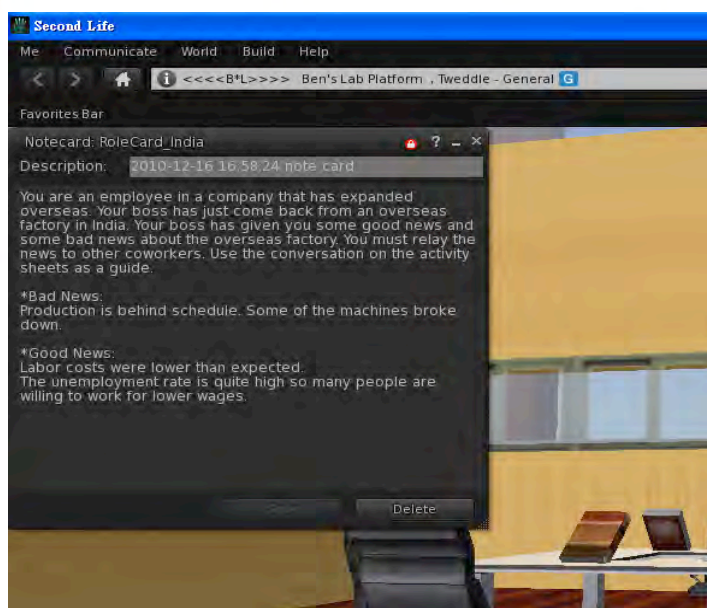
### Research Instruments

The study used mixed-methods to collect quantitative data from the *Virtual Task LLSA survey* and qualitative data from the individual interviews. All of the participants received and responded to the *Virtual Task LLSA survey*. Among these participants, the top three who had the highest and the lowest evaluation were selected for interviews. The data was collected and analyzed by comparing the data between a virtual world and a traditional classroom.

The *Virtual Task LLSA survey* was adapted from Strategy Inventory for Language Learning (SILL) (Oxford & Ehrman, 1987) and modified by the researcher. There were four sections in the *Virtual Task LLSA survey* (see Appendix B). The first three sections was a five likert-scale and the last section was open-ended questions. The scale ranged from 1 (strongly disagree) to 5 (strongly agree) that reflected the level of agreement on the statements. Individual interviews were conducted to ask participants who had the highest and the lowest scores on the sections of Perception toward the learning environment and Attitudes toward the SL on the *Virtual Task LLSA survey*. There were four opened-ended questions prepared that asked the top three highly-motivated and the top three less-motivated participants (see Appendix C).

## Teaching Materials

The teaching materials in a virtual and a traditional classroom were the same, based on a book called *Communicating in Business*. It was a school textbook used in the course of English Communication and Negotiation during that semester. *Communicating in Business* was a book for Business English students which stressed on presenting, negotiating, telephoning, meetings and socializing skills. The titles of these six lessons were, “Knowing what you want,” “Getting what you can,” “Not getting what you don’t want,” “Making meetings effective,” “Sorry to interrupt, but...” “What do you mean by...?” The instructional materials such as role cards, objects’ labels, note cards, illustrations, audio clips and virtual bulletin boards (see Figure 3.3), were in English displayed in Ben’s Lab. Role cards and note cards provided participants with extra and alternative information of tasks (see Figure 3.2). The activities in these six lessons were designed for learners to interact, communicate, discuss and negotiate (see Table 3.1). Through these lessons, learners were able to use and practice English.



*Figure 3.2. Role cards and note cards provided extra and alternative information*



Figure 3.3. Virtual bulletin board showed the information of instructions

Table 3.1. Weekly Lessons and Activities

Weekly Lesson	Activities
Knowing what you want	<ul style="list-style-type: none"> <li>• types of negotiation</li> <li>• preparation for a negotiation</li> <li>• making an opening statement</li> </ul>
Getting what you can	<ul style="list-style-type: none"> <li>• bargaining and making concessions</li> <li>• accepting and confirming</li> <li>• summarizing and looking ahead</li> </ul>
Not getting what you don't want	<ul style="list-style-type: none"> <li>• types of negotiator</li> <li>• dealing with conflict</li> <li>• rejecting</li> <li>• ending the negotiation</li> </ul>
Making meetings effective	<ul style="list-style-type: none"> <li>• what makes a good meeting</li> <li>• chairing a meeting</li> <li>• establishing the purpose of a meeting</li> </ul>
Sorry to interrupt, but...	<ul style="list-style-type: none"> <li>• the structure of decision making</li> <li>• stating and asking for opinion</li> <li>• interrupting and handling interruptions</li> </ul>

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What do you mean by...?	<ul style="list-style-type: none"> <li>• asking for and giving clarification</li> <li>• delaying decisions</li> <li>• ending the meeting</li> </ul>
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### Data Collection Procedure

There were four phases of this study: preparation, instruction, quantitative data collection and qualitative data collection. Data collection procedures were introduced as follows (see Table 3.2). On phase 1, a tutorial tour was given of the SL which lasted for two hours. During the tour, the instructor guided the participants to register an account and then showed them how to be teleported to Ben's Lab. On phase 2, six lessons were taught in SL. Every lesson covered one theme and the lesson lasted for two hours. On phase 3, pre and post the *Virtual Task LLSA* surveys were given to forty four participants before and after the experiments. On phase 4, qualitative data collection was noted from interviewing the top three highly-motivated and less-motivated users.

Table 3.2. Data Collection Procedure

Phase	Time	Data collection Procedure
Phase 1: Preparation	1 lesson (2hrs)	Tutorial (Second Life)
Phase 2: Instruction	6 lessons (12hrs)	Instruction covered 6 themes
Phase 3: Quantitative Data Collection	1 lesson (2hrs)	Administrating the Virtual Task LLSA survey
Phase 4: Qualitative Data Collection	2 lessons (4hrs)	Interviewing six participants from a virtual world (three highly- motivated users; three less motivated users).

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### Results

In this chapter, quantitative and qualitative methods were used to analyze the data from the *Virtual Task LLSA* survey and the individual interviews. First, the quantitative results of learners' social and affective strategy use were introduced. Then, quantitative and qualitative data from individual interviews of learners' perception and motivation of virtual learning were discussed descriptively and statistically.

RQ 1: What were the differences in social strategy used between a traditional classroom and a virtual world?

Independent sample *t*-test statistical analysis was used to analyze the data from the *Virtual Task LLSA* survey. Table 4.1 revealed that the mean frequency of social strategy use in a

virtual world was 3.5, and the mean frequency of social strategy use in a traditional classroom was 3.49. The results of independent sample *t*-test showed that there was no significant difference ( $t(50) = 0.10, p > .05$ ). Therefore, the result indicated that the students in a traditional classroom reported to use social strategy use as often as those in a virtual world.

Table 4.1. Social Strategy Use in a Virtual World and a Traditional Classroom

Social strategy use		t-test of equal mean			P (two tailed)	Mean	SD
		n	t	d f			
	Virtual world	26	.10	50	.91	3.50	.56
	Traditional Classroom	26				3.49	.61

RQ2: What were the differences in affective strategy used between a traditional classroom and a virtual world?

An independent sample *t*-test statistical analysis was used to analyze the differences in affective strategy use between a traditional classroom and a virtual world. As shown in Table 4.2, the mean frequency of affective strategy use in a virtual world was 3.57 and the mean frequency of affective strategy use in a traditional classroom was 3.34. The frequency of affective strategy use in a virtual world was slightly higher than a traditional classroom. However, based on the results of independent sample *t*-test ( $t(50) = 1.32, p > .05$ ), the results showed there was no significant difference. The result indicated that the students reported to use affective strategies as often as those in a virtual world.

Table 4.2. Affective Strategy Use in Learning Environments

Affective use	strategy	t-test of equal mean			P (two tailed)	Mean	SD
		n	t	d f			
	Virtual world	26	1.32	50	.19	3.57	.64
	Traditional Classroom	26				3.34	.58

RQ3: What was the learner's motivation toward language learning in a virtual world?

The quantitative method, paired-*t* test, was used to analyze research question three, Learners' motivation toward language learning in a virtual world. As shown in Table 4.3, the mean score of the learners' attitude in pre-test was 3.00 and the post-test were 3.43. Based on the results of paired-*t* test, there was a significant difference in learners' motivation ( $t(25) = -2.53, p < .05$ ). The result indicated a significant increase in learners' motivation.

Table 4.3. Significance of Learners' Evaluation in a Virtual World

Attitude in Pre-test & Post-test	Paired t variance			P (two tailed)	Mean	SD
	n	t	d f			
Pre-test	26	-2.53	25	.01	3.00	.85
Post-test	26				3.43	.84

RQ4: How did learners perceive language learning in a virtual world?

To begin with, background of these six participants, learning experiences, and the different opinions of virtual learning were introduced. The average age of the three highly-motivated participants was 20. The average years of English learning was 12.6. The average hours of computer use every week was 9.3. On the other hand, the average age of the three less-motivated participants was 20.3. The average years of English learning was 10. The average hours of computer use every week was 11.6.

### Common Views on Learning Experiences in the Second Life

These six participants pointed out the importance of sociability and language learning functions in the SL. They all reported that they were given more opportunities to learn a

language through communicating and cooperating with other peers in this virtual learning environment. For example, one of them claimed she was able to cooperate with her teammates. And the other participants claimed that she was engaged into activities. Nevertheless, these six participants also shared some negative view. A few of these negative issues include: Internet issues, hardware availabilities, and operation difficulties. For example, six of them pointed out the Internet disruption hindered the learning process. Another participant suggested school's hardware needed upgrading.

### **Different Views on Learning Experiences in the Second Life**

The different views of these six participants were categorized into three areas: affectivity, interesting operation and consistence. For example, the highly-motivated participants said she felt more relaxed and less anxious while practicing speaking online. On the other hand, the less-motivated participants mentioned the interesting operation such as moving their avatars and taking the elevator. They also pointed out the consistency of the learning materials in the SL were the same with the school textbook.

## **CONCLUSION**

### **Summary of the Findings**

First of all, learners were found to have increased their motivation and gained perception towards language learning in the SL. The participants shared their common and different views on language learning in the SL. Sociability, functions of language learning, Internet issues, hardware availability and operation difficulty were agreed as a common view. On the other hand, the highly-motivated users agreed that emotional factors influenced them the most in the SL, whereas the less-motivated users agreed on the interesting operational process and the consistency of learning materials. Second, even though there were no significant changes in the learners' use of social and affective strategies. However, the slight changes in social and affective strategies were noticed. More explanations were needed to explore the vast potential in educational benefits for future language learning.

### **Discussions**

#### ***Social and Affective Strategies***

The learners in a virtual world in this study showed higher mean frequency in social and affective strategy use than in those in a traditional classroom. However, it didn't show any significance in the *t*-test. It seemed to have other feasible explanations outside the study's findings. First, it's necessary to provide learners ample opportunities to learn and use language learning strategies. Riazi (2007) mentioned that language learning strategies may include instructional materials, teaching, and learning activities in the classroom. Clear and specific instruction, adequate in-class activities and explanation of learning strategies are

necessary. Second, technical difficulties consumed a large amount of time. As a researcher, continuous technical difficulties were also considered as interferences. During the six experiments, participants faced and complained about login issues, Internet instability, and unsupportive hardware and software. Third, low self-efficacy of technology effected learners' use of language strategies. Friedman and Kajder (2006) mentioned some students in their study spoke of their technology fears such as, "I am so uncomfortable with technology." Technology fear also showed in this study that some of the participants weren't confidence in technology use or they weren't familiar with 3D virtual world. Fourth, social and affective strategies aren't easy to be observed. Riazi (2007) reported participants showed more tendencies to use metacognitive, cognitive, and compensation strategies than social, affective, and memory strategies. Metacognitive, cognitive and compensation were not examined in this current study, social and affective strategies were surveyed instead. Fifth, self-efficacy of one's language proficient is somehow related to language learning strategies. Wong (2005) investigated the relationship between self-efficacy and language learning strategies and found a significant similarity. The results of Wong's study showed high self-efficacy participants had greater use of language learning strategies compared to low self-efficacy ones.

### ***Learners' Motivation & Perception***

The findings showed learners had positive feedback and better perception toward language learning in the SL. Prior studies also supported the findings (Chen, Chen, & Kinshuk, 2009; Singh & Lee, 2008; Siragusa & Dixon, 2008; Liaw, Huang & Chen, 2007). Chen, Chen and Kinshuk (2009) mentioned E-learning is a great stimulus to enhance learners' performance and knowledge sharing. More specifically, first of all, E-learning had been considered as a great stimulus for the interest in virtual learning communities. Secondly, using the setting of virtual learning communities enhanced learning performance. Third, learners had more probability of actual behavior of knowledge sharing in virtual learning communities. According to Ajzen (1991), behavioral intentions were also motivational factors that influenced learners' willingness when performing certain behavior. Therefore, behavioral intention was regarded when related to one's attitude and motivation.

### ***Pedagogical Implications***

There were several implications for the findings. Since learners' perception and motivation had increasingly changed on the integration of school English curriculum with technology, the feasibility of virtual learning was more visible on higher education. Singh and Lee (2008) stated that online education was wide-spread in the United States, as there were many more universities now offering courses. Even though virtual worlds were being used for business and social networking, they should additionally be adopted as instructional

tools in education.

The first implication was to promote virtual learning on educational systems in Taiwan, especially in higher education. The second implication was to consider inserting text-embedded or audio- embedded materials into the SL and also teaches reading and writing skills. Since Internet issues, hardware availability and operational difficulties were pointed out as barriers during the learning process, using text-embedded and audio-embedded materials experienced less loading issues.

On the other hand, schools and teachers' perspectives should also be considered. From the school's perspective, identifying barriers such as Internet issues, hardware availability and operational difficulties were major considerations. These factors represented challenges that future studies required careful and planned improvements. Schools may gradually upgrade partial computer hardware, software and equipment to see pedagogical uses of virtual learning. Also, to plan and design a complete teaching schedule for one semester, ensure success by exposure to virtual learning. Moreover, from a teachers' perspective, knowledge of and attitude towards computer technology, determined the degree of success (Atkins & Vasu, 2000). Hence, teachers need a series of preparatory training to become familiarized with digitized teaching materials, cope with technical problems or have an assistant to help with these difficulties in class.

### **Limitations and Suggestions for Future Research**

There were three notable limitations related to this study, technical issues, limited time and unfamiliarity. Wiebe and Kabata (2010) also mentioned technical issues in their study that they identified an overwhelming need for upgrading computer laboratories, updated hardware, projector systems, and Internet connectivity. Secondly, time limits were the next concern. Learners had no ample exposure in a virtual world which hindered the possibilities of familiarization with the virtual platform and its operations, which were then harder to achieve without an effective and sufficient language learning system. Third, learners were unfamiliar with a 3-D virtual world that consumed a lot of time operating avatars and exploring the environment. Another study also pointed out the learners had difficulties on how to navigate and control the avatar in the direction they chose (Wang & Braman, 2009). Lastly, the researcher encountered several complicated technical problems during the experiments but those problems couldn't be solved while the researcher was lecturing or assisting other learners.

Consequently, there were some suggestions provided in response to encountered limitations. One was that gradually updating school hardware, software and other devices to the

technological requirements of the SL. Alternative solutions and requirements were suggested to be better prepared, for example, an up-to-date computer motherboard, a high-speed Internet connection (cable or DSL), and a good quality graphic card. Second, plan a whole semester's schedule of virtual English learning curriculum. Thus, learners will have enough time to explore, to become familiar with the learning environment and operation, whilst also interacting with other learners. Then, prepare teachers by providing sufficient knowledge of educational technology, training programs, and by appointing a technical classroom assistant.

The logo for the International Association for Future-Oriented Research (iafor) is centered on the page. It consists of the lowercase letters "iafor" in a light blue, serif font. The text is enclosed within a circular frame composed of two concentric, hand-drawn style arcs. The outer arc is a light red color, and the inner arc is a light blue color, matching the text. The overall design is minimalist and modern.

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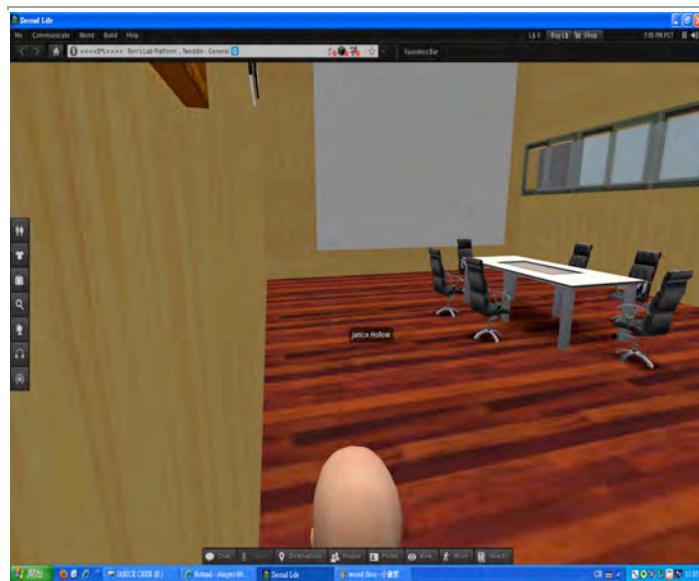
## Appendix A. Floor Design in Ben's Lab.



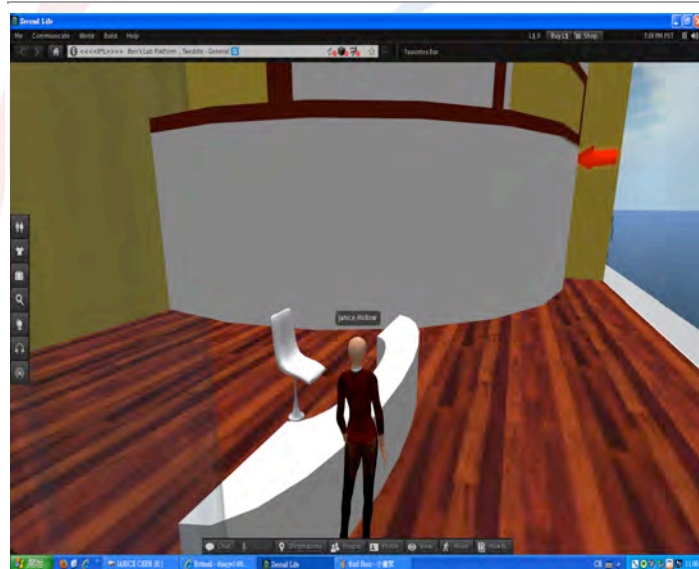
The first floor



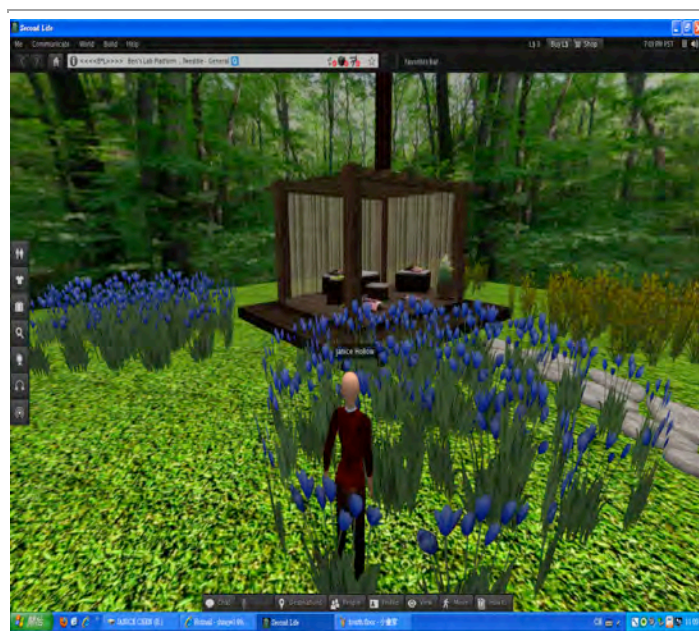
The second floor



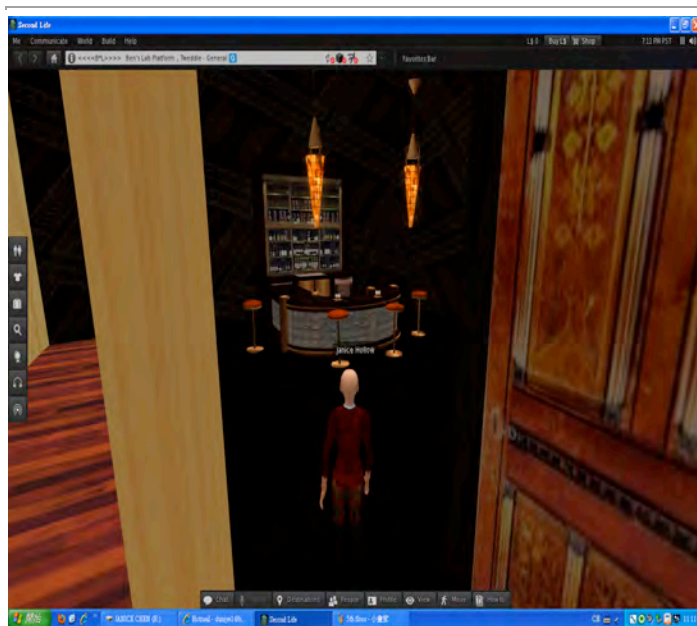
The third floor



The fourth floor



The fifth floor



The sixth floor- a lounge bar



The sixth floor- living room



The sixth floor-staff lounge

## Appendix B. Virtual Task LLSA Survey

受試者您好:

這份問卷是為了瞭解受試者在不同環境下使用溝通式教學法(Communicative Language Teaching)的觀感, 您提供的意見與訊息將會以匿名的方式呈現並且只會用於學術上。如果您對此研究有任何意見, 麻煩連絡 [shinjye1@hotmail.com](mailto:shinjye1@hotmail.com) 陳欣潔。  
國立嘉義大學 外國語言學系碩士班

陳欣潔

姓名: \_\_\_\_\_ 年齡: \_\_\_\_\_ 性別: \_\_\_\_\_

每週使用電腦: \_\_\_\_\_ 小時

您學英文多久: \_\_\_\_\_ 年

平時溝通工具的順序: \_\_\_\_\_

1. 電子郵件 2. 即時通訊 ex: MSN 3. 網路平台 ex: FB 4. 傳統信件

您有考過下列哪些英語檢定(請寫下分數或等級)

1. TOEFL iBT \_\_\_\_\_
2. IELTS \_\_\_\_\_
3. GEPT \_\_\_\_\_
4. TOEIC \_\_\_\_\_
5. BULATS \_\_\_\_\_

### 課後評估與自我省思

1. Never true of me 很少或幾乎不會發生在你身上
2. Generally not true of me 通常不是在□我
3. Somewhat true of me 偶爾的時候會發生在你身上
4. General true of me 通常在□我
5. Almost or always true of me 幾乎是在講我

Part I: Social strategies 社交學習策略	1	2	3	4	5
1. This learning environment provided me with an opportunity to meet other students in the course  此學習環境提供了我機會去認識其他學生	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. This learning environment allowed me to develop closer relationships with other students in the course  此學習環境允許我與其他同學更頻繁	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. This learning environment helped to reduce the sense of isolation that I sometimes feel as a distance learner  此學習環境幫助我減少孤立的感覺與減少其他互動者的距離感	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. This learning environment allowed me to develop more effective communication skills  此學習環境讓我可以發展更有效的溝通技巧	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. This learning environment allowed me to develop more effective teamwork skills  此學習環境讓我可發展團隊的合作技巧	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. If I do not understand, I ask the speaker to slow down, repeat, or clarify what she said. 假如我有不懂的地方 我會請說話者講慢點、重複或是解釋剛剛講的	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. I ask other people to verify that I have understood or said something correctly. 我會問他人我是否講對或是否了解內容	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I work with other language learners to practice, review, or share information. 我與其他的語言學習者一起練習、複習或是分享資訊	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. This learning environment allowed me to develop closer relationships with other students in the course  此學習環境允許我與其他同學更頻繁	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. This learning environment helped to reduce the sense of isolation that I sometimes feel as a distance learner  此學習環境幫助我減少孤立的感覺與減少其他互動者的距離感	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Part II. Affective strategies 情緒的學習策略	1	2	3	4	5
11. I don't afraid of asking questions in English when the teacher asks me to do so.  當老師要求我用英文問問題不害怕	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. This learning environment helped me to become more confident 此學習環境讓我在溝通上更有自信	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. I try to learn about the culture of English speakers.  我會嘗試學習英語母語說話者的文化	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. I try to relax whenever I feel anxious about using the new language.  我試著放鬆當我使用語言時感到焦慮	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. I give myself a reward or treat when I do well in language learning.  我給自己獎賞當我在語言學習表現很好時	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. I encourage myself to use a language or guessing the meanings.  我鼓勵自己練習新語言或是猜大意	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. I talk to someone I trust about how I feel when I am learning a language.  我會跟別人聊到我學語言的感受	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. I had fun working in this learning environment. 在此環境學習的有樂趣	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Part III Perception toward the learning environment 對學習環境的接受度	1	2	3	4	5
18. The learning environment has given me opportunities to think of new ideas and explore those ideas further.  給我機會想新的點子與發掘更多點子	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. This learning environment has given me an opportunity to put my ideas into action.  讓我將我的想法實現出來	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. This learning environment has given me an opportunity to practice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

business conversation					
此學習環境給我練習商業會話					
21. This learning environment helped me to understand more real conversational practices.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
此學習環境幫助我了解更多實用的溝通練習					
22. This learning environment should be used for future class offering.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
此學習環境應做為未來課程的提供					
23. I wanted to learn more in this course because of this learning environment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
讓我想學更多因為此學習環境					
24. I enjoyed learning in this learning environment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
我在此環境學習很愉悅					
25. It was a good idea to learn in this learning environment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
在此環境學習是個好點子					
26. This environment was engaging learners' participation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
此環境讓學習者很有參與性					
27. I do possess the communication competence in this learning environment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
我學得溝通的能力因在此環境下學習					
28. This learning environment does motivate me so I do learn well.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
此學習環境讓我有動力學習，所以我學得很好					

Please write down your response here. Thanks. 請將您的回答數據寫在此, 謝謝你

1	6	11	16	21	26
2	7	12	17	22	27
3	8	13	18	23	28
4	9	14	19	24	
5	10	15	20	25	

#### Part IV. Attitudes toward Second Life ( Open-ended questions) 開放性問答

1. Do you have any suggestion toward the lessons? 您對本課程是否有任何建議

- Materials 教材 \_\_\_\_\_
- Teaching Contents 課程內容 \_\_\_\_\_
- Interaction 同學們之間互動 \_\_\_\_\_
- Others 其他 \_\_\_\_\_

2. What are the potential of SL for educational purposes? SL 的潛在教育目的是?

\_\_\_\_\_

3. What parts do you like while using the platform, Second Life? 當你在使用第二生活此平台時, 你喜歡哪部份?

\_\_\_\_\_

4. What are the difficulties you encountered while using Second Life? 當你在使用第二生活此平台時, 你遇到怎麼樣的困難?

\_\_\_\_\_

5. Will you recommend instructors to teach speaking on this platform? Why or why not? 你是否會建議老師在此平台教導口語訓練? 為何或為何不?

\_\_\_\_\_

## Appendix C. Interview questions for four interviewees

1. What are the educational potentials that the SL can provide? 對你來說 SL 的潛在教育目的是?  

---

2. What parts of the SL do you like ? Why? 你喜歡 SL 的哪個部分呢? 為什麼呢? 

---

3. What are the difficulties you encountered while using Second Life? 當你在使用第二生活此平台時, 你遇到怎麼樣的困難? 像是網路不穩 電腦硬體設備不足 任務複雜性高 虛擬環境操作不易...之類的  

---

4. Will you recommend instructors to teach speaking on this platform? Why or why not? 你是否會建議老師在此平台教導口語訓練? 為何或為何不?  

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iafor

*Teaching Perspective Consciousness in an Undergraduate Global Education Course*

Masataka Kasai

0292

Kansai Gaidai College, Japan

The Asian Conference on Education 2012

Official Conference Proceedings 2012

A large, faint watermark of the iafor logo is centered on the page. It consists of two concentric, hand-drawn style arcs, one in light red and one in light blue, with the lowercase text 'iafor' in a light blue serif font in the center.

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## Introduction

The world is becoming interdependent at an unprecedented speed. Historically, exchanges of products and contacts with people beyond national borders have taken place for more than 2,000 years (McNeill 1963). However, the difference between the present and 2,000 years ago is the “degree of frequency, depth, and scope” (Pike & Selby 1988, p. 3) of global interdependence. In sum, we are living in a world where we influence each other on a global scale more regularly and deeply than ever.

Due to such global interconnectedness, Japanese people have come to recognize and understand “Japan in the world” and “the world in Japan” (Yoneda 1997, p. 17). The increasing global worldviews of Japanese people and the rapid change of Japan’s interconnectedness to the world have significantly influenced Japanese education. For example, in 1996 the Central Council on Education (*chuo kyoiku shingikai*) proposed that education in the 21<sup>st</sup> century should include several global characteristics, such as the concept of global interdependence, an emphasis on environmental education, an interest in countries and areas otherwise neglected, and the development of an appreciation of different perspectives in different cultures (Ono 2001). Consequently, Japanese scholars and educators have paid more attention to global education as an alternative for education in the 21<sup>st</sup> century (Uozumi 1995).

The goal of this paper is to introduce learning activities and resources that enhance undergraduate students’ perspective consciousness in a Global Education course that the author has taught since 2010.

## Theory and Practice of Perspective Consciousness

Global education developed in the United Kingdom and the United States in the 1970s. There is tacit consent that the primary purpose of global education is to prepare youths to become global citizens by developing their global perspectives. There are six conceptualizations of global perspectives: perspective consciousness, global issues, global interdependence, global history, cross-cultural learning and skills, and participation in a global society. Perspective consciousness is considered to be “the recognition or awareness on the part of the individual that he or she has a view of the world that is not universally shared, that this view of the world has been and continues to be shaped by influences that often escape conscious detection, and that others have views of the world that are profoundly different from one’s own” (Hanvey 1976, p. 4). Students’ acquisition of perspective consciousness is particularly essential, since there is agreement among

scholars that it is better to express opinions about the world based on a wide-ranging and unbiased examination from different perspectives than based on unexamined and established assumptions (Case 1993).

By applying the concept of perspective consciousness, global educators teach content such as global interconnectedness, global issues, and cultures from multiple perspectives (Merryfield 1998). “The richness of multiple perspectives” (Pike 1997–1998, p. 8) was used by global educators in Canada and the US. Most of the social studies teachers in Merryfield’s study recognized that it is necessary for students to learn “multiple perspectives, multiple realities, and conflicting viewpoints on issues, events, and people under study” (Merryfield 1998, p. 352). Global educators tend to involve multiple perspectives by using different sources and role-playing (Kirkwood 2002).

Textbooks, other teaching materials, and people with different perspectives have usually helped students develop multiple perspectives. For example, when learning about the similarities and differences between the cultures of different people, especially minorities such as Native Americans and the Ainu people, who are said to be Native Japanese and who mainly live in Hokkaido, Japanese university students have examined textbooks that include these minorities’ perspectives (Gettings 1997).

Teaching materials from different points of view concerning one particular event have also allowed students to develop multiple perspectives on various events. Tajiri (2000) provided his high school students with resources about the Battle of Mactan from the perspectives of Spain and the Philippines when teaching about the relationship between Ferdinand Magellan and Lapu-Lapu. Including resources from both sides showed different perspectives on the battle in that the material from the Spanish viewpoint presented Magellan fighting against Lapu-Lapu and dying in the middle of his around-the-world journey, while the Philippine point of view considered Lapu-Lapu to be a hero who fought against the invaders, including Magellan.

The experience of interacting with people with different points of view also enhances students’ perspective consciousness. People with different perspectives are usually internationally experienced people (e.g., returned Peace Corps volunteers and exchange and international students) and minorities (e.g., Koreans, Chinese, and Ainu people in Japan). Angene Wilson (2001) conducted numerous studies to investigate how the international experiences of teachers, students, and people in the community had an impact on students’ learning and found that teachers used the knowledge and experiences that they or internationally experienced people

possess in their instruction.

In addition to the use of textbooks, other teaching materials, and people with diverse perspectives, role-play is a popular classroom activity that can develop students' perspective consciousness, and teachers may assign students the roles of different countries, organizations, and people. For example, Gaudelli (1996) assigned his students the roles of Bosnian-Serbs, Muslims, and Croats and had them discuss the Bosnian civil war from their assigned points of view. In another example, Otsu (1994) developed a high school curriculum for her Contemporary Society course to teach students about minority populations, including Koreans and the Ainu, Australian Aborigines, and Native Americans and African Americans in the US, and had her students recognize and understand them through playing the roles of these minority populations.

In sum, numerous scholars and educators have emphasized the importance of perspective consciousness and introduced various types of activities to enhance students' perspective consciousness. However, little work has been done to examine what teaching approaches or resources actually help undergraduate students develop their perspective consciousness. In order to fill this gap, this study was conducted to investigate the effects of various learning activities or resources on undergraduate students' perspective consciousness.

### Research Methodology

The study was conducted in an undergraduate Global Education course at a university in Kansai area, Japan. The Global Education course was taught during the spring semester (from April to July) in the academic years 2010, 2011, and 2012. Data were collected from the students who enrolled in this course in these three academic years (42 students total). The demographics of the students were as follows:

Table 1. Demographic information about students enrolled in the Global Education course in the 2010, 2011, and 2012 academic years.

Academic Year	Student Population (ID)	Details
2010	25 (from A to Y)	6 juniors (5 Korean students) & 19 seniors
2011	11 (from AA to KK)	3 juniors (1 Korean student) & 8 seniors
2012	6 (from AAA to FFF)	3 junior & 3 seniors (no international students)

The research participants were told to write down any comments they had, including what they learned, on a piece of paper called a “reflective note” (Fig. 1) during the last five minutes of most of the class sessions.

<b>Reflective Note (Introduction to Education): Please write your learning, comments, or suggestions.</b>			
<b>Date:</b>	<b>Period:</b>	<b>Name:</b>	<b>Student #:</b>
<b>Attention!!</b> Your reflective note might be referred to or cited in my research presentation or paper. I promise that your identity be kept into confidential by using anonymity (fake names). If you do not want me to include your note as my research data, please circle “NO” below. Your decision will NOT affect a grade of your reflective note assignment.			
NO			

Figure 1. Reflective Note.

In total, 784 reflective notes were collected and analyzed. In order to develop a theory grounded in the data rather than find the data to match a theory in order to better understand the effects of teaching approaches and resources, a constant comparative method was employed for the study. The constant comparative method refers to inductive data analysis in which “the formal analysis begins early in the study and is nearly completed by the end of data collection” (Bogdan & Biklen 1998, p. 66). The data were analyzed in the study inductively, in that I did not start out to find data to prove or disprove a predetermined hypothesis, but attempted to discover categories, themes, or theories from the data or “grounded in the data” (Strauss & Corbin 1994, p. 273).

## Findings

As a result of the data analysis, four common teaching approaches that the participants felt helpful for developing their perspective consciousness were found: (1) teaching the importance of perspective consciousness, (2) having students put themselves into “different shoes”, (3) having students encounter diversity through multicultural resources, and (4) having students examine resources involving multiple perspectives. Each teaching approach will be discussed below in detail.

### Teaching the importance of perspective consciousness

One teaching approach that enhanced undergraduate students’ perspective consciousness was to directly teach them its importance through readings and media resources. Perspective

consciousness was thoroughly discussed in a chapter of the book *An Attainable Global Perspective*, by Robert Hanvey (1976). The research participants were assigned to read this chapter as homework and discuss it in the following lesson. One student recognized a new perspective that Japanese people, including himself, may be racist and learned the importance of widening one's perspective by stating in a reflective note, "I learned that I might be racist by the article. Japanese shouldn't think we're not racist, which is a narrow opinion..." (GG, May 16, 2011).

In another lesson, they watched part of the movie "Dead Poets Society," which portrayed students' lives with a new instructor, Mr. Keating (played by Robin Williams), at a prestigious high school (The Welton Academy). The two scenes I showed them were those in which Mr. Keating instructs his students to rip the preface pages out of their textbook and when Mr. Keating explains the importance of seeing things from different angles in his English class and has his students stand on the teacher's platform to see the classroom from his perspective. Through these scenes, some of the students became aware of the existence of mainstream academic knowledge and the importance of seeing things from different perspectives. One student wrote the following: "We watched the movie Dead Poet Society. In this movie, one professor has a unique perspective. He told students that in creating poets, it doesn't need the idea of the textbook. He also told his students to have various perspectives by standing up on the desk" (DDD, May 18, 2012).

Other students came to recognize the importance of perspective consciousness by learning the importance of thinking outside the box. A nine-dot puzzle allowed them to "think of everything around up out of our perspectives" (AAA, May 11, 2012). They were told to cross through all nine dots on a piece of paper like the one below, using one, two, three, or four straight lines without lifting their pencils from the paper.

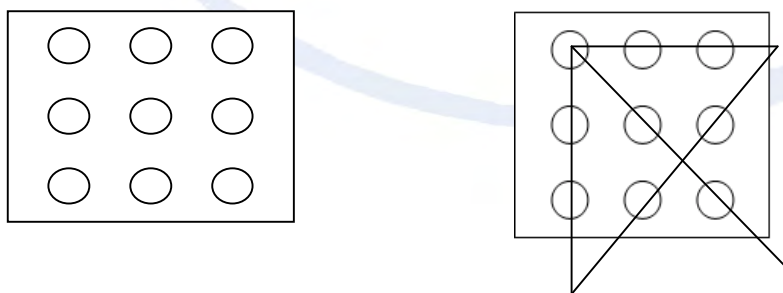


Figure 2. "9 dots activity" and its solution with four straight lines.

Most of the students could not solve it since they had the preconceived notion that they should not draw a line beyond their imagined borders. This activity allowed them to see how important it is to recognize their own fixed notions and think of solutions outside of these notions.

Having students put themselves into different shoes

There are some teaching approaches that involve putting students into different shoes and helping them recognize the existence of diverse perspectives. These approaches include debating, Barnga, and Model United Nations activities.

One day, students were divided into three small groups. The groups negotiated and decided which two would debate and which one would judge the debate, and then the two debating groups negotiated and decided which group would take the “agree” position and which one the “disagree” position. After that, students were provided with a statement to debate. Following a five-minute preparation session that included the consideration of the other group’s counterargument, each debating group gave a speech in support of its position for one minute and then engaged in a question-and-answer session for five minutes. After the debate, the judging group judged which group’s argument was more persuasive. The three groups switched their roles and repeated the entire procedure until all three had played the judging role. The discussion topics presented in this course were as follows: (1) this University should have stricter rules for students, (2) English should be taught from kindergarten, and (3) university entrance exams should be banned. Debating was helpful for the students to “tell the one side of view and listen the other side of view” (DDD, May 22, 2012).

Barnga<sup>1</sup> is one of the most popular classroom activities in the intercultural communication field. Students were divided into groups consisting of three or four members, and in each group they first learned how to play Barnga by reading the instructions printed on a sheet of paper and then actually playing it a couple of times for five minutes. While they were playing, they were not allowed to talk or write but were permitted to make some gestures or draw pictures. After that, all the group members were shuffled and moved to different groups to create new groups; then they played Barnga for ten minutes. After a ten-minute session, they discussed how the game went. Integral to the lesson’s goal, when learning how to play Barnga in the beginning, all

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<sup>1</sup> See Thiagarakan’s & Thiagarajan’s 2006 book titled *Barnga: A Simulation Game on Cultural Clashes* [25th Anniversary Edition] for detailed information and instructions on this simulation activity)

groups were provided slightly different instructions, which resulted in great confusion when playing Barnga with people from different groups. Through this game, one student became aware of the existence of different ways of seeing the same thing by stating, “I learned that people think different thing even they see the same thing (paper?). So it is important to decide rule/opinion exactly” (C, May 10, 2010).

Another popular activity that allowed students to put themselves into different shoes was Model United Nations. It is believed that Harvard University originated this activity in the 1920s, calling it Model League of Nations at the time. Sadako Ogata first introduced Model United Nations to Sophia University in Japan in 1983. There are various levels or types of Model United Nations around the world. For this course, the American Model United Nations was employed by using the “Model UN ‘in a Box’” kit sold at <http://www.amun.org/>. The main aim of Model United Nations is to simulate United Nations conferences by having students become delegates of UN member states, having them individually study global issues that the UN has actually discussed and having them discuss the issues with other delegates and attempt to create resolutions. When learning about global issues (education rights were studied in this course), students were exposed to member states’ perspectives of which they had not previously been aware. One of the students commented, “We had a UN meeting and it was great. I think! We discussed right of education and thought what is important thing in education. We thought the ideas based on our countries (for example, My ideas based on Russia). It was the funniest activity among the classes” (C, June 25, 2010). Moreover, some of the students tended to be surprised at what other member states believed regarding the same issue. “Although it was easy to come up with issues that we have to solve from our country’s point of view. It was quite difficult to share them with other countries and to discuss and decide the solutions with many countries which also have their own problems. I’ve learned this!” (H, June 25, 2010).

#### Having students encounter diversity through multicultural resources

Multicultural resources encourage students to develop their perspective consciousness, especially their awareness of stereotypes or prejudice towards a particular country, culture, or group of people. In the Global Education course, three resources—“Disney Learning: Our World” by Maureen Hunterbone and Thea Feldman (2005), “A Class Divide with Jane Elliot” by Public Broadcasting Service (2003), and Multicultural Cinderella by Alexander (2006)—were used to have students examine how those resources represent a particular country, culture, or group of people.

“Disney Learning: Our World” is a comprehensive, cross-cultural learning book for the young and provides basic information about geography, people, culture, and so on for thirty-five countries in five regions. The students were divided based on their nationalities (Japanese and Korean) and assigned sections on their home countries to read and examine as to whether their home countries were accurately represented or not. After that, they gave presentations on their findings and learning through this activity. One student identified that the assigned section offered a fixed perspective (stereotype) of the home country by saying, “I’ve learned how stereotype is created through the book of Disney. They offer the exotic, romanticized information, but distorted one. I think the stereotype is caused by the benefit of commercial intention” (E, April 30, 2010). Another student recognized that “it’s really important to critically think and examine the information we got from limited resources” (Q, April 30, 2010).

“A Class Divided” featuring Jane Elliot is one of the most popular segments of the PBS Frontline series and presents the case of Jane Elliot’s famous “blue-eyed/brown-eyed” exercise in her 3<sup>rd</sup> grade class. The students in my class watched two video clips: “1. The Daring Lesson” and “2. Day Two.” In the first video, Elliot divided her students into two groups—students with blue eyes and those with brown—and told them that the blue-eyed children were superior to the brown-eyed ones. She treated her students accordingly throughout the day. In the second video, she reversed the roles by saying that the brown-eyed children were superior to the blue-eyed ones and treated them accordingly throughout the second day. At the end of the second day, she had a discussion with the whole class on how they felt on the first day and the second day and how they should treat other people. These video clips seemed to help my students identify the power relationships inherent in race relations as demonstrated in Elliot’s class and to enable them to step into another’s shoes and feel like they were “less ‘powerful’ people” (AAA, May 1, 2012).

Multicultural Cinderella is a cross-cultural learning activity that compares different versions of Cinderella published in different regions or countries (Alexander 2006). It is said that there are more than 500 versions of the Cinderella story around the world, some of which are published<sup>2</sup>. In the first round of the lesson, students in small groups were assigned two versions of Cinderella stories and told to compare them to find similarities and differences. After the first round of comparison, each group was assigned two other versions and asked to examine them for the same purpose; then they presented what they found to the whole class. The students discovered a

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<sup>2</sup> Refer to “Multicultural Cinderella Stories” by the American Library Association (2000) for a list of the Cinderella stories.

lot of differences among the stories in terms of the content, characters, pictures, and linguistic expressions. For example, one student found “the differences of sense of ‘beauty’ in the differences of pictures” (II, May 9, 2011).

Having students examine resources involving multiple perspectives

The last teaching approach, but not the least, was to have students examine resources involving multiple perspectives. World maps, two movies, and scripts titled “Meeting on the Congo” were utilized in the Global Education lesson.

Four different types of world maps, each of which located different regions in the center, were shown in class and students discussed the question, “Whose perspective is involved in this world map?” After that, a map of Japan was shown, and the same question was asked. Korean international students answered it rapidly; however, Japanese students were not able to answer it because they did not recognize that the sea among Russia, North Korea, South Korea, and Japan was named “Sea of Japan” on the map, but it was called “東海” (East Sea) in Korea.

After this activity, one student mentioned, “I didn’t know that there is a map which Australia is middle. Also, I didn’t know that sea of Japan is called 東海 in Korea. It’s interesting to know about something with many aspects. I want to know more about like that” (N, May 17, 2010). This activity encouraged the students to recognize different types of world maps representing different perspectives that people have.

“Letters from Iwo Jima” and “Flags of Our Fathers,” both of which were directed by Clint Eastwood and released in 2006, showed the battle over Iwo Jima from a Japanese perspective and an American perspective, respectively. In “Letters from Iwo Jima,” Japanese soldiers attempted to defend Iwo Jima from American Marines coming from the sea; in “Flags of Our Fathers,” American Marines attempted to attack and occupy Iwo Jima from the sea. After watching both of them, a student commented, “I’ve never thought about the different perspective about one topic. Especially about the topic which is historical event. To know both is could make me understand well. So, I thought I should see one thing from multi-side and not with only one thought” (O, May 17, 2010). Showing one historical event, the battle for Iwo Jima in this case, from different perspectives was indeed helpful for the students to develop their perspective consciousness.

The last activity, “Meeting on the Congo,” originally introduced by Merryfield and Timbo

(1983), presents two different stories of people who met on the Congo River in the 1800s and used two different scripts for discussion. One was written by a European explorer traveling along the Congo, and the other was told by an African chief living by the Congo River. These two stories describe clearly how differently the two narrators perceived the situation when they met each other on the river. Students were first divided into two groups, and each was assigned a different script. After reading the scripts, they discussed the following questions: “What were the expectations of the person telling the story? What emotions were expressed? Why were people killed? (Merryfield & Timbo 1983, p. 20)” Both scripts were then shown to the whole class. Learning about the same event from different perspectives helped one particular student to recognize “the importance of learning from multiple perspectives.” Moreover, the same student became aware of the existence of Eurocentrism, stating, “It was too sad for African people who believed that white men were their brothers. Also, it made me sad that the Africans’ true story cannot be revealed for other Europeans because of the Eurocentrism and barrier of language” (Q, May 14, 2010).

## Conclusion

As the world is becoming more interconnected through the rapid advance in technology and transportation, people of all nationalities will have more opportunities to interact with others whose perspectives are diverse. Recognition of diverse perspectives and the ability to see things from multiple perspectives are essential for global citizens. The students in the Global Education course tended to develop their perspective consciousness in the lessons involving the four teaching approaches discussed above. These approaches can be employed in any academic course, and it is necessary for all faculty members throughout the institute—regardless of their academic fields—to offer instruction in and help develop students’ perspective consciousness in their courses.

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*Impact of Learning Motivation on University Students' English Writing Progress by  
Using MyAccess*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

*MyAccess* is one of the most popular automated essay scoring systems. It is both a writing tool and an essay grader. Students can choose among various essay topics, such as effects of technology, job skills necessary for success, society's biggest problem, and top vacation place, write as many drafts as they wish, and receive immediate feedback.

The study data comes from the Foreign Language Centers of two universities located in the center of Taiwan. 54 students coming from different departments of 15 universities followed a program fully funded by the Ministry of Education during the summer of 2011. The program lasted four consecutive weeks, with the total curricular time adding up to be 140 hours. During the evening self-study sessions, the students first undertook on-line writing practice individually and then peer-editing, led by teaching assistants.

This research compares students' motivation with their scores during the one-month training in order to measure the impact of motivation on their progress in writing. Three study cases are presented in more detail: a student with high motivation, with scores progressing significantly; a student with relatively good motivation, but who fails to progress during the training; and a student with lower motivation who regresses during the training.

**Keywords:** English as a second language; motivation; *MyAccess*; writing skills.

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## 1. Introduction

In 2011, Taiwan's Ministry of Education (MOE) funded various intensive English programs (IEPs) aimed at helping students to enhance their academic competitiveness. The present study analyzes the case of 54 students who joined two programs offered by two universities (26 in university 1 and 28 in university 2) in Taichung. The MOE fully funded accommodation, fees of tuition, and meals during the one-month program from August 1<sup>st</sup> to August 26<sup>th</sup>, 2011. The total curricular time was 140 hours. Students were instructed by native-English-speaking instructors helped by teaching assistants. Students also used an automated essay scoring (AES) system, *My Access*, during the training. During the first week, they were invited to submit essays on four pre-selected prompts: (1) Effects of Technology, (2) Job Skills necessary for Success, (3) Society's Biggest Problem, and (4) Top Vacation Place. Students were supposed to submit all their essays by the end of the program. No limit was fixed to the number of essays students could submit. In the end, the average of drafts submitted was 9.6 (the minimum being 4 and the maximum 32).

The study proposes to concentrate on the impact of students motivation and satisfaction about their progress in writing. Students' motivation is measured by data coming from questionnaires answered by them every week during the training. Students' progress is measured by data coming from the scores they received every week after passing standardized English proficiency tests and by the resulting level according to the Common European Framework of Reference for Languages (CEFR, 2001). Students were required to have passed level B1 before joining the program. The goal of the IEPs was to help students reach a CEFR B2 level of workplace English skills as measured by Business English Testing Service of Cambridge ESOL (Bulats). This research will first present an overview of the impact of motivation of students' progress in writing and then analyze in detail three case studies.

## Literature review

### 2.1. Literature related to English writing and *MyAccess*

Various companies provide nowadays Automated Essay Scoring (AES), that is, computer technology able to grade the written prose (Shermis and Burstein, 2003). Among the most successful AES are Project Essay Grader (PEG), Criterion, *MyAccess*, and Bayesian Essay Test Scoring System (BETSY) (Rudner and Liang, 2002). *MyAccess* is the instructional application of IntelliMetric developed by Vantage Learning. The American company founded in 1990 by Peter Murphy was the first to create artificial intelligence-based automated essay scoring, blending artificial intelligence (AI), natural language processing (NLP), and statistical technologies.

Various studies show that *MyAccess* significantly improves student academic achievement (Yang, 2004; Yeh and Yu, 2004a; Yeh and Yu, 2004b; Wang, 2005; Huang, 2006). Elliot (2001) claims that the program has a 99 percent reliability rate. However, some studies highlight inadequacy of scores provided by *MyAccess* (Cheng, 2006; Grimes and Warhauer, 2006; Yang, 2004). One of the flaws of the system would be to favor quantity over quality: long essay tend to obtain a higher score (Cheng, 2006; Herrington, 2011). Ware and Warschauer (2005) notably demonstrate that online automated scoring systems tend to be static models which might discourage creative writing. Creative essays often receive a low score and creative students might feel discouraged and frustrated. Therefore, many scholars insist on the fact that computer-assisted learning programs should be a complement to classroom instruction (Burtstein and Marcu, 2003; Yang, 2004; Oladejo, 2005).

Stern and Solomon (2006) confirmed the study by Connors and Lunsford (1988) which found that spelling errors were the most common form of mark on a paper. They showed that most comments were technical corrections (spelling, grammar, word choice, and missing words); comments addressing paper organization and quality of the ideas contained in it (support/evidence for claims, paper structure/organization, voice, and creativity) were absent. It should be noted that *MyAccess* focuses much more on technical corrections than on organization. According to Cheng (2006), one Taiwanese student who used *MyAccess* was critical of the fact that he was given a high score even though he did not write a conclusion. Some students said that the correction was too “kind” and that they did not feel they deserved a so high score for their drafts.

Students’ motivation is also influenced by teachers’ mastery of the technology. When the instructor appears to be ill at ease with the scoring engine, it affects students’ learning (Carroll et al., 2001). The role of the instructor is to guide students and to provide post-grading consultation to students (Cheng, 2006). In fact, Yang (2004) showed that when the instructor was able to provide assistance and guidance to students, their motivation was significantly higher. Using *MyAccess* can increase teachers’ motivation to teach writing courses in the sense that this type of course is time-consuming and exhausting. Writing classes are very big and improving students’ writing skill involves correcting multiple drafts (Hyland, 2003; Kroll, 2003). Scoring engines can at least correct some of students’ mistakes and ease teachers’ working load; instructors could then focus on logic and organizational aspects more than on vocabulary and grammar. Elliot and Mikulas (2004) showed that *MyAccess* helps students to make better revisions. Montoneri et al. (2012) applied data envelopment analysis (DEA), a robust and reliable quantitative method, to calculate the relative learning efficiency in English writing of university students who completed a one month training using *MyAccess* during the summer of 2011.

### **3. Methodology**

The study uses SPSS to run the data collected during the summer of 2011 in the Foreign Language Centers of two universities located in the center of Taiwan.

#### **3.1. Data source**

The two Foreign Language Centers were in charge of planning and offering university-level foreign courses for students attending various universities in the center of Taiwan. The characteristics of the data source and research object are as follows:

1. The summer intensive English program was from August 1<sup>st</sup>, 2011 to August 26<sup>th</sup>, 2011.
2. 54 students coming from different departments of 15 universities; 26 followed the training offered by University 1 and 28 by University 2.
3. To be eligible for applying for this intensive English program, university students nationwide must meet requirements of: (a) sophomore or above, (b) non-English major, and (c) English proficiency level of CEFR B1 or above.
4. Students passed three mock tests (one at the end of week 1, one at the end of week 2, and one at the end of week 3).
5. Students passed the real test as the post-test at the end of week 4.
6. All the tests had 110 questions.

#### **3.2. Selected indicators**

During the training, students passed exams every week and were asked to answer questionnaires. This study uses some of the data collected to analyze if students' determination and satisfaction have a significant impact on their scores and CEFR level. Moreover, the indicators are selected only if they are significantly correlated.

1. Student ranking. It represents the rank of students' average total final scores in their class in academic year 2010, that is, before joining the program: 1. within the top five, 2. front level, 3. before and near middle level, 4. middle level, 5. after and near middle level, 6. low level.
2. Student determination to participate. It represents the level of determination of full participation in the English intensive course at the beginning of the training: 1. extremely low, 2. low, 3. high, 4. extremely high.
3. CEFR level at the end at the start of the program. CEFR level is required to be B1 before joining.
4. The level of confidence to advance your English proficiency one level within a month: 1. extremely low, 2. low, 3. high, 4. extremely high.
5. CEFR level at the end at the end of the program. This indicator show if students have progressed or not to a higher level, that is, at least from B1 to B2 or C1.

6. Satisfaction with the course.
7. Posttest scores (accurate answers / 110 questions). It represents students' scores at the end of the four weeks program.

### 3.3. Correlations

We use SPSS to find out if there are significant correlations and Analysis of Variance (ANOVA) to further investigate significant differences.

#### 3.3.1. Gender

ANOVA table (Table 1) indicates there are no statistically significant differences between male and female for any of the following factors: certificate level at the start of the program, certificate level at the end of the program, first simulated test results, second simulated test results, third simulated test results, and posttest scores.

Table 1. Gender differences

Indicator	Groups	Sum of Squares	Df	Mean Square	F	Sig.
Certificate level at the start of the program	Between Groups	.333	1	.333	2.667	.109
	Within Groups	6.500	52	.125		
	Total	6.833	53			
Certificate level at the end of the program	Between Groups	.009	1	.009	.024	.878
	Within Groups	20.306	52	.390		
	Total	20.315	53			
First simulated test results (accurate answers / 110 questions)	Between Groups	20.454	1	20.454	.183	.671
	Within Groups	5818.583	52	111.896		
	Total	5839.037	53			
Second simulated test results (accurate answers / 110 questions)	Between Groups	1.333	1	1.333	.022	.882
	Within Groups	3140.667	52	60.397		

questions)	Total	3142.000	53			
Third simulated test Between results (accurate Groups answers / 110 Within Groups questions)	Total	2739.426	53			
Posttest scores Between (accurate answers / Groups 110 questions)	Between Groups	40.333	1	40.333	.470	.496
	Within Groups	4459.667	52	85.763		
	Total	4500.000	53			

Generally speaking, there is no gender bias in this study and gender plays no role in student's test scores and their perception of the course. However, Table 2 indicates statistically significant difference between student ranking and gender differences (0.022).

Table 2. Gender differences

Indicator	Groups	Sum of Squares	df	Mean Square	F	Sig.
Determined to Participate	Between Groups	.037	1	.037	.109	.742
	Within Groups	17.611	52	.339		
	Total	17.648	53			
Student Ranking	Between Groups	8.333	1	8.333	5.579	.022
	Within Groups	77.667	52	1.494		
	Total	86.000	53			
Satisfaction with course	Between Groups	.009	1	.009	.028	.869
	Within Groups	17.472	52	.336		
	Total	17.481	53			
Satisfaction with the final course result	Between Groups	.333	1	.333	.754	.389
	Within Groups	23.000	52	.442		
	Total	23.333	53			

Table 3 shows that the difference between males and female students in their ranking is due to female students' significantly higher mean than male students. This indicates that female students

ranked significantly higher than male students in this study.

Table 3. Gender and ranking

Genre	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Female	36	4.61	1.128	.188	4.23	4.99	2	6
Male	18	3.78	1.396	.329	3.08	4.47	1	6
Total	54	4.33	1.274	.173	3.99	4.68	1	6

Haahr (2005) notably analyzed gender differences in the acquisition of basic skills and on the performance of different education systems in providing gender equality. Females achieved significantly higher average scores in reading than males in all the 27 OECD countries studied. Males performed somewhat better in some countries in science and mathematics. The findings of this study confirm the previous study (Haahr, 2005) with regard to gender differences and average score.

### 3.3.2. Training location

Table 4 shows that there is no significant difference between the two training locations in student confidence in advancing their English ability (3.08 and 3.11). This indicates that the groups were originally homogenous and there are no antecedent variables. Because students are from two different universities, it is possible that their English level or their confidence in learning English be different. Table 4 indicates that students were originally homogenous.

Table 4. Training location and confidence in advancement during the course

Groups	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.012	1	.012	.044	.835
Within Groups	14.525	52	.279		
Total	14.537	53			

According to Davis' (1983) conventions for interpreting correlation associations, .70–1.0 = very strong association, .50–.69 = substantial association, .30–.49 = moderate association, .10–.29 = low association and .01–.09 = negligible association.

Table 5 indicates that there is a positive and moderate correlation between the determination to participate in the training and confidence in advancement during the courses.

Table 5. Determination to participate and confidence in advancement during the course

Indicator	Correlation	Determined to Participate	Advance Confidence
Determined to Participate	Pearson Correlation	1.000	.526**
	Sig. (2-tailed)		.000
	N	54.000	54

Table 6 shows that there are significant differences between the two training locations and student's satisfaction. However, there are no significant differences between the locations for test scores and certificates. Students in university 2 are more satisfied with courses, teaching, administrative staff, TA counseling, and overall satisfaction. But, students in university 1 are more satisfied with self satisfaction, with improvement, and about final course result.

If they wish to offer the training again, both universities will have to reflect on these results. Probably for psychological reasons, such as atmosphere during the training, personal relationship with the teachers, teaching assistants, and staff, students seem to be more satisfied with university 2, which means that university 1 should improve communication skill. However university 2 should improve teaching material, content, and teaching skill as satisfaction with the final course result is lower.

Table 6. Training location and satisfaction

Indicators	Group	Sum Squares	of df	Mean Square	F	Sig.
Student Ranking	Between Groups	.033	1	.033	.020	.888
	Within Groups	85.967	52	1.653		
	Total	86.000	53			
Satisfaction with course	Between Groups	8.149	1	8.149	45.406	.000
	Within Groups	9.332	52	.179		
	Total	17.481	53			
Satisfaction Teaching	with Between Groups	20.972	1	20.972	125.701	.000
	Within Groups	8.676	52	.167		
	Total	29.648	53			
Satisfaction	with Between Groups	12.393	1	12.393	28.252	.000

administrative staff	Within Groups	22.810	52	.439		
	Total	35.204	53			
Satisfaction with TA counseling	Between Groups	2.804	1	2.804	10.791	.002
	Within Groups	13.511	52	.260		
	Total	16.315	53			
Overall Satisfaction	Between Groups	9.036	1	9.036	56.002	.000
	Within Groups	8.390	52	.161		
	Total	17.426	53			
Self satisfaction with the Improvement	Between Groups	2.476	1	2.476	6.174	.016
	Within Groups	20.857	52	.401		
	Total	23.333	53			
Satisfaction with the final course result	Between Groups	2.770	1	2.770	7.005	.011
	Within Groups	20.563	52	.395		
	Total	23.333	53			
Certificate level at the start of the program	Between Groups	.015	1	.015	.112	.740
	Within Groups	6.819	52	.131		
	Total	6.833	53			
Certificate level at the end of the program	Between Groups	.254	1	.254	.659	.420
	Within Groups	20.060	52	.386		
	Total	20.315	53			

## Findings and Discussions

The empirical study illustrates the fact that a relatively small number of students progressed significantly during the training.

### 4.1. Overview

How many students progressed? How many regressed? It appears that only 18 students on 54 obtained a higher CEF certificate level at the end of the program. Seven of these students answered at the end that they were very satisfied (5/5) and 11 that they were satisfied (4/5). Nine of these students who progressed were males and 9 were females. Surprisingly, only 4 of these students wrote

a number of drafts higher than the average of 9.6, which would mean that writing many drafts is not necessarily synonym with progress. Obviously, quality of the drafts is more important than quantity. Ten of the students who progressed were trained at university 1 and 8 at university 2.

Five students regressed and had a lower certificate level at the end of the training, 2 trained at university 1 and 3 at university 2. As for the other students, that is, the majority (31), they had the same certificate level at the beginning and at the end of the program.

#### **4.2. Study cases**

##### **Study case 1: Student with high motivation, with scores progressing significantly**

Student 20 came from university 2 and was trained at the foreign language center of university 1. She was a female junior student who had a quite high motivation at the beginning of the program (level of determination of full participation in the English intensive course: high; level of confidence to advance your English proficiency one level within a month: high). She wrote a higher number of drafts than the average (9.6): 14, including 3 on Effects of Technology, 5 on Job Skills necessary for Success, 3 on Society's Biggest Problem, and 3 on Top Vacation Place. Her certificate level was B1 at the beginning and B2 at the end of the training, as her scores progressed from 46/100 to 57/100. Student 20 end self-satisfaction was very high (superior to 90%). She was also very satisfied with the course content (4/5).

However, typically, student 20 seemed to be very unhappy about the personnel as she gave a 5, that is, "extremely low", to the teaching, staff, and TA counseling. It appears that the case of this student is very common: many students had a quite high motivation, were satisfied with their progress in writing, obtained higher scores, wrote many drafts, but were very unsatisfied of all the people involved in the training. The quality of the training and the competence of the personnel are not involved, but there was obviously a problem of atmosphere and communication during the one month program.

##### **Study case 2: Student with relatively good motivation, but who fails to progress during the training**

Student 10 also came from university 2 and was trained at the foreign language center of university 1. She was a female senior student who had a good motivation at the beginning of the training (level of determination of full participation in the English intensive course: very high; level of confidence to advance your English proficiency one level within a month: high). However, her level remained B1 at the end and her scores went down from 57/100 to 48/100. She relatively regressed. Probably one of the reasons is because she wrote only 5 drafts in one month: 2 on Effects of Technology, 1 on Job Skills necessary for Success, 1 on Society's Biggest Problem, and 1 on Top Vacation Place.

That is, less than the average of 9.6.

Her satisfaction concerning the training, course content, teaching, TA counseling, administrative staff, satisfaction with overall activities, and even self-evaluation were very low at the end of the program. Student 10 was very clearly disappointed. Her score for the second week exam was significantly lower: 48/100. It is quite disturbing that students who received so much support from teachers, assistants, staff, and who had access for free to a very expensive online scoring engine did not seem to appreciate it and lost motivation in a matter of days.

### **Study case 3: Student with lower determination, regressing during the training**

Student 44 had a relatively lower determination at the beginning of the program (3; more students have 4). She was a senior female student from university 1. She gave a lower evaluation of the course content (3.14/5) and of the administrative management (3.5/5). She seemed to be a little more satisfied of the teaching by the teachers during the training (4/5). Student 44 wrote a low number of drafts during the one-month program: only four, the minimum, just one draft per prompt. It shows on her scores: she obtained only 38/100 at the end of the first week, then 30/100, 38/100, and finally 31/100 at the end of the last week.

As a result, her CEFR level went down from B1 to A2. Her end self satisfaction was 3/5, that is, in the group 50-69%. As a comparison, 38 students on 54 had an end self satisfaction of 2/5, that is, 70-89%, and only three students have 3/5. She expected, according to the questionnaire she filled, to remain a senior students after the program, that is, not to become a graduate student. This student's determination was not particularly low at the beginning. It appears she got disappointed with the courses and the way the training was managed. She lost motivation and did not take advantage of using *MyAccess* to make progress in writing (only four students wrote 4 drafts; the average is 9.6).

### **Conclusion**

The paper uses SPSS to measure the impact of students' motivation and satisfaction on their progress in writing. Correlations and Analysis of Variance (ANOVA) show that there are no statistically significant differences between male and female for any of the following factors: certificate level at the start of the program, certificate level at the end of the program, first simulated test results, second simulated test results, third simulated test results, and posttest scores. Moreover, there is no gender bias in this study and gender plays no role in student's test scores and their perception of the course. There is no significant difference between the two training locations in student confidence in advancing their English ability, indicating that the groups were originally homogenous. There are significant differences between the two training locations and student's satisfaction. However, there are no significant differences between the locations for test scores and certificates.

Relatively few students took advantage of using MyAccess during the 1 month program to make progress; the average of drafts written is 9.6 (between 4 and 32). The empirical study illustrates the fact that only 18 students progressed significantly during the training, 5 regressed and 31, the majority, did not improve in scores and certificate level. Actually, even the students who progressed wrote a quite small number of drafts.

Almost all the students were satisfied with course content, but it seems that students were less satisfied with teaching, with TA counseling, and administrative staff in university 1; however, there were more satisfied with their progress at the end of the program. Training was paid by MOE, but still students decided to apply during the summer vacation and most of them had high determination. Probably the program was too short to make significant progress in writing. That is why a relatively low number of students were able to move on from B1 level to B2 or higher. The two universities and the MOE should reflect on the fact that 36 students on 54 did not progress or even regressed after so much money and effort were spent to implement this training.

### **Future directions**

The training was fully paid by MOE, but if results are disappointing, the ministry will probably have to rethink its policy. The two universities, the two foreign language centers, and the personnel involved should reflect on these results and find ways to improve the training. More studies should analyze in detail the use of automated scoring engines in Taiwan, the impact of motivation and determination on writing progress, and the influence of communication skill.

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*Engaging Polytechnic Students with Problem Based Learning in Civil Engineering Courses*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

This paper reports on the study pertaining to the effectiveness of PBL approach intended for the teaching and learning of course of Concrete Technology for Polytechnic students in India. This paper also deals with the comparison of PBL package with System of Conventional Learning (SCL) generally adopted in teaching polytechnic students. A pre and post test as well as questionnaire were administered to the students before and after the exposure respectively. Finding of the study suggests that PBL approach is an effective method over SCL method for teaching concrete technology to Polytechnic students.

Key Words : Problem Based Learning (PBL)  
System of Conventional Learning (SCL)  
Concrete Technology

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## **1. Introduction to Problem Based Learning**

Problem based learning (PBL ) has been used in higher education for over fifty years as a method of teaching the practical application of knowledge to the students in a real world setting . It originated in the field of health in the 1950's and gained wide acceptance in medical education . However in the last decade there has been a growing movement through out the world to adopt PBL in other fields including engineering . There is a close relationship between engineering methods with PBL methods. Both engineering and PBL start from the problems followed by the identification of the need . PBL approaches to learning have been used with some success in engineering courses in many countries . Young et al ( 1994) describe the use of PBL in Civil engineering drawing classes , while Said at al ( 2005) describe how PBL has been used in Malaysia with Electrical engineering students. PBL has recently been put in place in the penultimate and final year transport engineering classes in the Civil Engg. degree in University College Dublin ( 2008) . PBL has been introduced in number of undergraduate Civil Engineering courses to help students to become deep and active learners and to help them in the transition from passive note taker to researcher and lifelong learner. Problem Based Learning is a way of constructing and teaching course using problem as a stimulus and focus on student activity ( Boud and Felletti 1991)

According to Liu , M.J. ( 2005) , PBL is a learning process where students are presented with a problem and are asked to apply reasoning , questioning , researching and critical thinking techniques to find a solution to the problem .

Thus, the essential characteristics of PBL include:

- i) Learning is student centered only .
- ii) Authentic and real world problem is the focus for learning
- iii) Learning is self directed .
- iv) Learning occurs in small tutorial groups.
- v) Teacher acts as facilitator
- vi) Collaboration is a must

## **II Introduction to Course of Concrete Technology in Polytechnic**

The Civil Engineering diploma in India is a three year programme . It is only in the last two years of the programme that students start to really engage in civil engineering subjects. In second year, students of civil engineering are introduced to concrete technology principles , methods and policies . Looking at the importance of subject in the field , it was felt that PBL approach suited over SCL method as students would be asked to think about how principles and policies of concrete technology can be implemented and of the likely impact of the subject application in the real world . In lecturers , it is possible to introduce students to the theories regarding various policies but by engaging in PBL, students were able to investigate these policies more deeply.

### **III PURPOSE**

The main objective of using PBL with the second year students of civil engineering in course of concrete technology was to enable them to make transition from learning to research. These students after the completion of diploma will either join industry to become junior engineers, or may continue their academic career with further studies in engineering degree courses. In both situations they need to be able to use the knowledge they have gained in lectures to solve problems and to research on the other hand; this study also research into whether PBL approaches creativity, criticality and team working among polytechnic students.

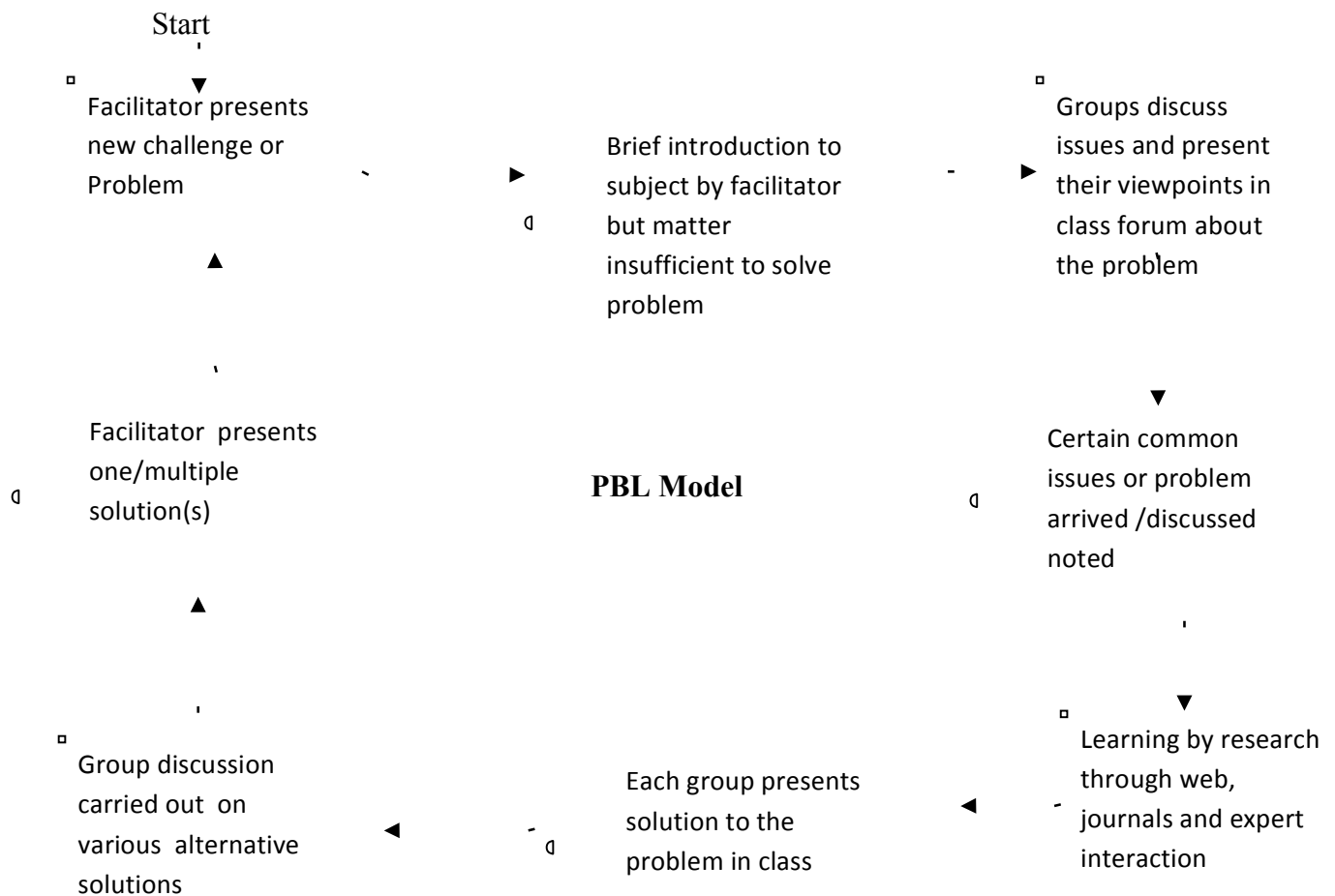
### **IV OBJECTIVE**

The objectives of this study include:

- a) To study what is the difficulty faced by the students in concrete Technology course in teaching through SCL method.
- b) To judge the suitability of PBL approach in teaching civil engineering courses to Polytechnic students.
- c) To compare the learning strategy by SCL and PBL methods.
- d) To study student attitude on learning method in research
- e) To compare student achievement through use of PBL approach in engineering education.

### **V RESEARCH METHODOLOGY**

This research proposed the cognitive constructivist learning model (as shown in fig. (i)) to study to what extent does PBL method improve the performance of polytechnic students in Civil Engg. courses with respect to the system of conventional learning (SCL). Understanding on problem proposed is cognitive activity where student need to think with knowledge they have. The learning process by research and PBL method will be applied in this study through development of webpage which will be used by students for problem solving and information sharing.



**Fig. (i) PBL Model**

### **First Phase ( Formation and Development)**

- The second year class of Civil Engineering students was divided into two major groups A and B based on their even and odd roll numbers . Group A was taught by conventional method ( SCL) and group B by PBL approach
- Group B was further sub- divided into small PBL groups ( each group consisting of 4-6 students )
- Information was collected from students regarding learning interest and style on subject of concrete technology .
- Difficulties faced by students in SCL method was analyzed .
- Present knowledge of students in the subject of concrete technology was tested by conducting an objective written test ( Pre-test study)

- Based on the result of Pre- Test Score the whole Group B was split into Above Average , Average and Below Average students .  
( It was ensured that atleast one above average , one average and one below average student exists in each PBL group ) .

### **Second Phase : ( Methodology and Implementation )**

- Introduction about learning style of Concrete Technology was provided to the students of Group B by research method with PBL application .
- Knowledge about PBL resources was provided such as link to web page , library books and journals, expert knowledge etc.
- PBL implementation technique was discussed such as problem identification , brain storming and analyzing the problem , determining the solution , searching and collecting information and lastly sharing and synthesizing new information .
- PBL problems on related topics was prepared and shared with the students through webpage .
- Assignments and projects related to the subjects were given and the students were asked to present solution through presentations.

### **Third Phase : ( Integration & Evaluation )**

- One to one in depth interviews were conducted throughout study as the method of data collection
- Students were also asked to give their own description of PBL learning experience from different aspects of learning environment .
- Post study tests through written questionnaire were also conducted to assess students and evaluate their PBL learning experience .
- Based on Feedback and State Board academic results , comparison of students of Group A and B were analyzed and determined .
- Presentation of progress reports and assignment were also evaluated through various parameters.
- Separate analytical research was focused on the impact of PBL inclusion on above average , average and below average students .

## **VI DESIGNING PBL PROBLEMS**

An effective PBL problem should :

- a) Motivate students learning through real world relevance
- b) Post open-ended initial questions that encourage discussion.
- c) Push students to identify and seek out needed information .
- d) Be complex enough to promote group effort in solving.
- e) Require discussion making or judgement.
- f) Address course learning objectives.

Two examples of PBL problems given to the students of Concrete Technology are given below :

### **EXAMPLE PROBLEM – 1**

Diabetes Type 1 and Diabetes Type 2 also known as ‘Sugar’ in ordinary language can be controlled by taking medicine or insulin injection. The patient is said to have controlled sugar’ says a doctor . But a civil engineer working at mixing plant says ‘prepare a controlled concrete’ . Do you agree with the statement of engineer . Can concrete be controlled like sugar? If yes ,how ? explain degree of control .

Is something written as uncontrolled concrete in IS : 456-1978 ? what is the importance of IS : 456-1978 in concrete Technology .

Do you agree that as medicines are given to sugar patients , certain materials are injected in concrete also to modify its properties and increase its strength . If yes , what are they called .Give name of few such materials and explain their properties .

### **EXAMPLE PROBLEM - 2**

“ Ability to work is workability . When it is workable , it does not segregate . It has love for water , but too much water .....o.....o..f...f..... baba , I even don’t work then and sometimes fail .So always fulfill my requirements .....I am sometimes ordinary , sometime reinforced but many times prestressed too”

Study the above text and answer the following questions ?

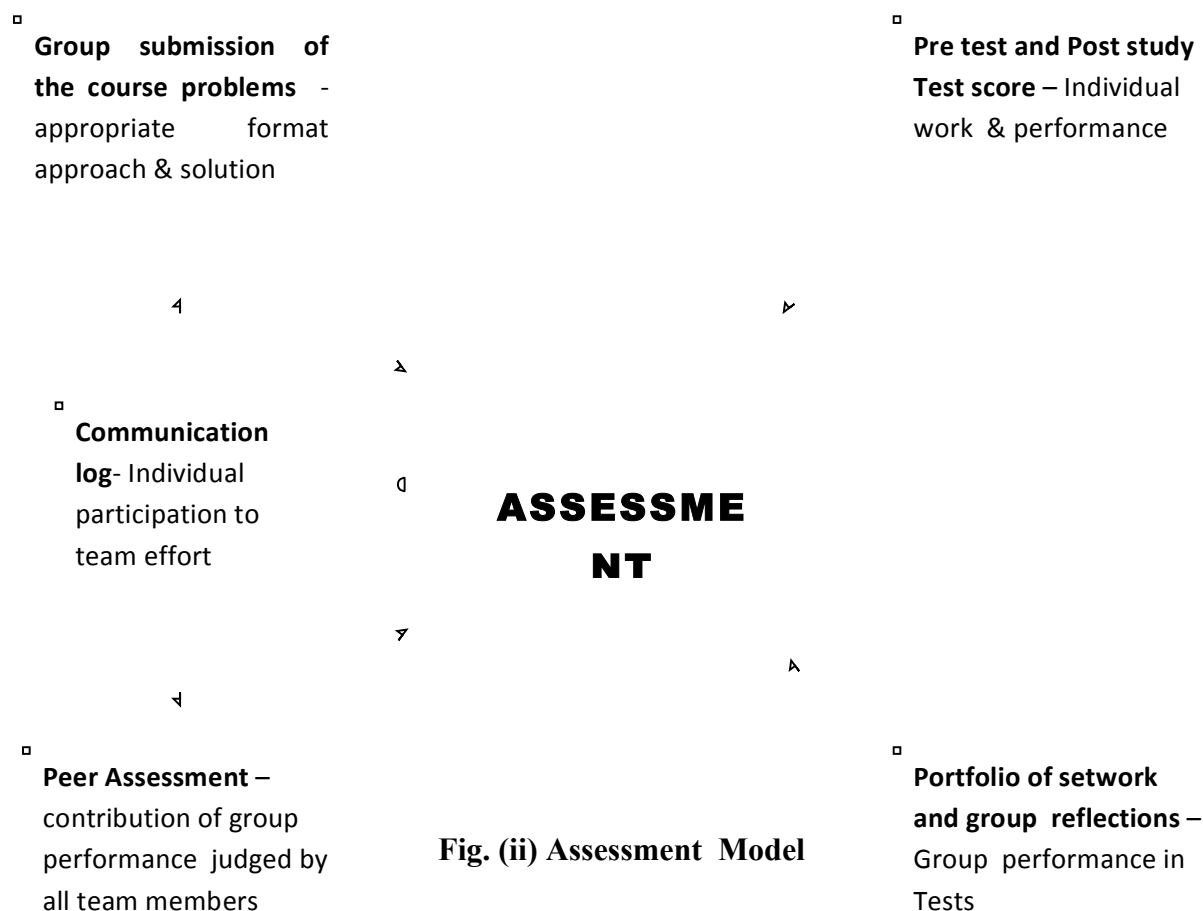
1. Who is ‘I’ ?
2. Explain how segregation is linked to workability .

3. Can workability be tested ? if yes how ?
4. How it can fail and under what conditions
5. What is meant by the terms ordinary, reinforced and prestressed here ?
6. What is meant by 'love for water' ?
7. How you can fulfill its requirements ? Discuss its various types in detail .

## **VII RESULTS AND DISCUSSIONS**

In this section, the successes and failures of the implementation of PBL approaches are discussed . In addition, some feedback collected from students through oral and written questionnaire has also been described which outlines how students felt about the introduction of PBL in course of Concrete Technology . The comparison between PBL and SCL methods too have been discussed .

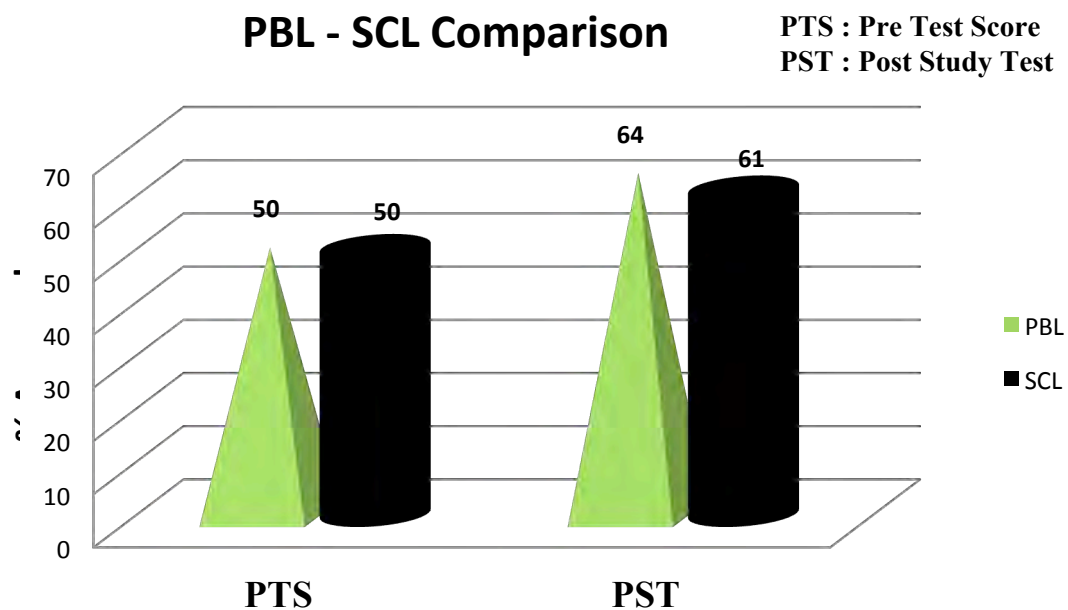
The assessment strategy adopted for the PBL course of Concrete Technology to assess the work and performance of Polytechnic students varied slightly from the Brodie Model ( 2002) . The revised assessment model is shown in fig (ii)



**Fig. (ii) Assessment Model**

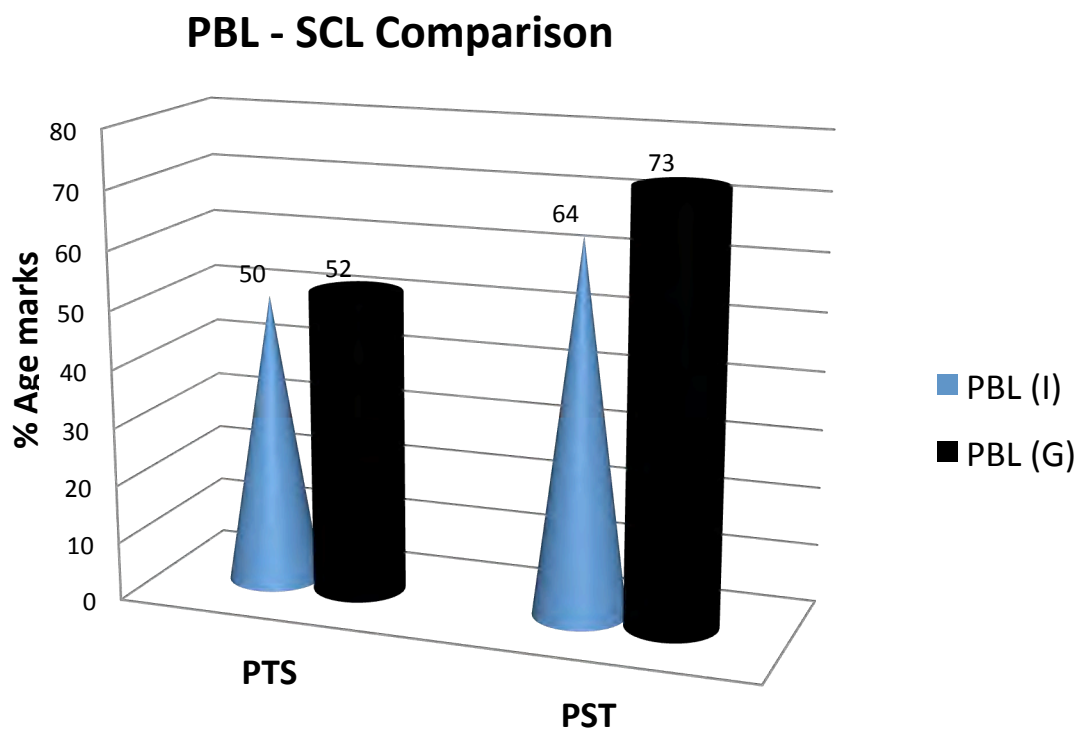
- (i) In this test conducted on both PBL and SCL groups, the average marks in the examination ( Pre Test & Post study Test scores ) of PBL group was not significantly different from SCL group & approximately the same proportion of students got average and above average marks . Even PBL group had the slight edge in post study test carried out in the second half of the semester ( shown in fig (iii) ) . This provides the evidence that using the PBL methodology does not put students at a disadvantage as compared with conventional system of learning . However the reaction of the students to the delivery mode was generally very favourable and the feedback from the facilitator was also very positive .

□



**Fig. (iii)**

- (ii) In this trial of test the individual performance of each member of PBL group was compared to its group effort ( shown in fig iv) . Except one group , the average performance of students increased to a marked extent . Groups of 5 students were used for PBL research as it was felt that this is a group no. that is easy to manage and allows all members to have some chance to speak .



**Fig. (iv)**

- (iii) One interesting thing happened during the implementation of the concrete technology course at MC Polytechnic, Jalandhar was the improvement in class attendance. At Polytechnics in Punjab, class attendance is generally low due to boring lecture methodology adopted in SCL approach. In first part of PBL course (first trimester), class attendance fluctuated (60-65%), however in the second trimester, when full scale PBL activities were conducted, an average 82-83% of the class was present most of the time, whereas in SCL group the class attendance was quite less (72-73%). The weekly class attendance is shown in fig. v (a),(b).

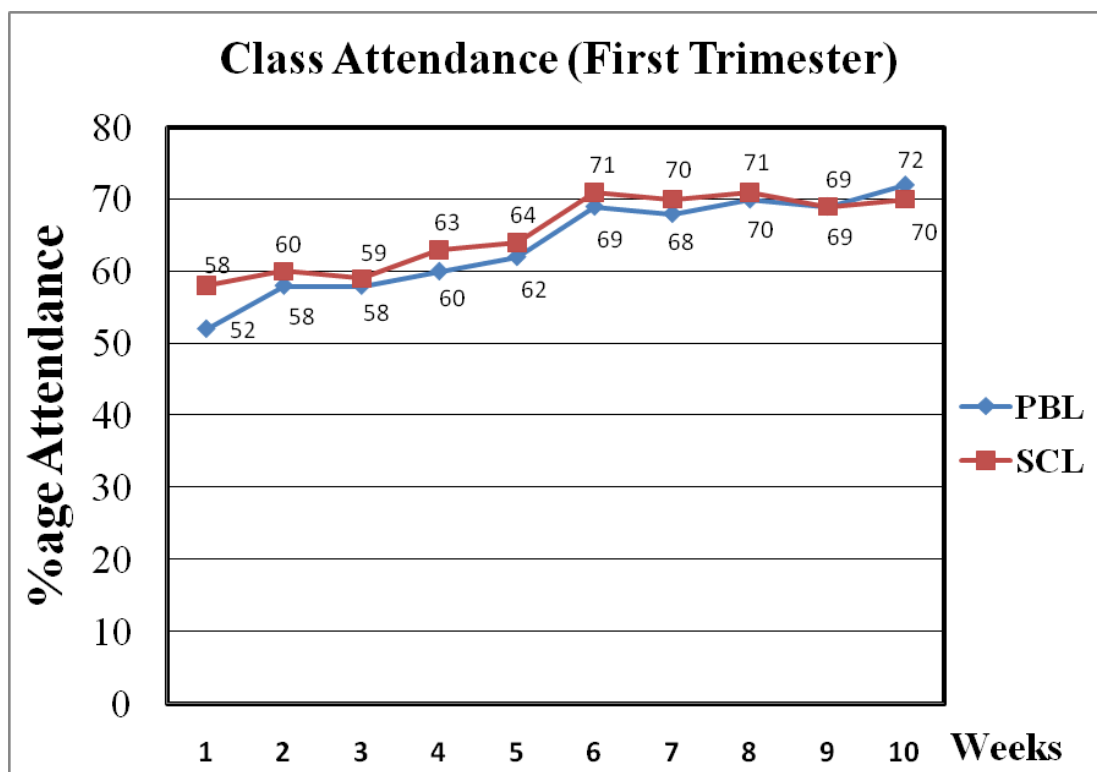


Fig. v (a)

□

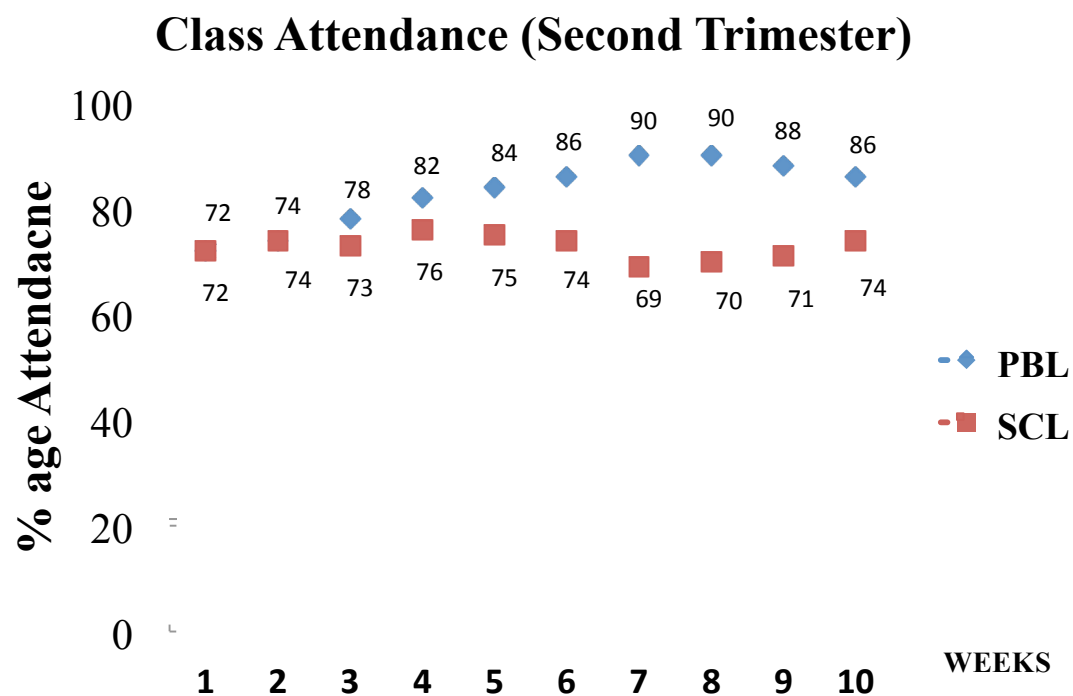


Fig. v(b)

- (iv) Students felt strongly that they were learning skills, that would be useful to them in higher studies or during work as a supervisor in construction industry in later life. They felt that it was very valuable to work with other students in a group and that discussing problems with other made them understand issues more deeply and gain a broader understanding of the subject. However few students (4-5) also strongly felt that PBL was more difficult and more time consuming than SCL methodology.
- (v) The online discussion forum (web page) worked as useful way to share ideas and resources within the class as well as during holidays but technology was not frequently used by one or two groups to share information with the class and especially to discuss within themselves.
- (vi) In the final week of semester, a questionnaire was issued to all students of PBL group by email. Although 100 percent students did not responded the questionnaire but most of them returned. The students acknowledged that they have enjoyed PBL although it was messy and difficult. They also felt that they had learnt better team working skills, better communication and better research skills. Although there were four students, who felt that PBL wasted time only and nothing concrete came out of it. They said that the time spent on reading, studying and solving problems would have been better spent on getting information through lectures.
- (vii) The students in favour of SCL method explained "There is no burden on us, we clarify our doubts in mind immediately from the teacher; moreover there is no pressure to find out the correct solution". But there were more people and more points in favour of PBL. "How can you gain, if there is no pain. They (SCL group) are following easy and simple path". An overwhelming majority of students (about 83%) stated that they enjoyed the PBL process. The reason being:
  - a) It helped them learn together and solve problems related to the course.
  - b) It is an interesting way of learning provided the team works well together.
  - c) This learning approach provides the highest standard of self control and planning.
  - d) It is good for improving research skills.
  - e) They really learned something deeper what was expected to be learned in B.Tech.
  - f) It really helped them to understand the assignment.
  - g) They never learned like this before through the use of SCL approach.
  - h) Although more than 83% of students enjoyed PBL experience, their preferences leaned towards a combined traditional and PBL approach. Their main suggestion was to combine PBL technique with the traditional SCL method through the introduction of small lectures in between so as to provide them the basic materials to solve their problems.
  - i) The PBL tasks designed by teachers determining the learning activities can be undertaken by students during non-contact hours. This is the key advantage of PBL that it can help students manage 'non contact hours' more effectively.
  - j) As a facilitator, I got the most satisfaction when sizeable number of students of SCL group approached and requested me to join the PBL group for learning. Despite constant pressure of work, 25 students in a group of 30

indicated that their PBL experience was positive rather than negative. 5 students who disliked PBL cited two reasons – the high workload and a preference for lectures in which the teacher is a primary source of information.

## **VIII CONCLUSIONS**

PBL introduction to course of concrete technology for Polytechnic students was motivated by the desire to engender more independent and deep learning in students in the final year and in B.Tech classes. It appears to have been quite successful in this respect as students not only engaged in independent research, reading outside of the course but their class attendance improved a lot. The use of PBL will continue not only in this course in future years but some other subjects of Civil Engineering will also be brought under PBL regime. It is also intended in future implementation to have more training for facilitators. It may not be possible to expand the number of facilitators available, due to lack of resources, but better and more extensive training of existing facilitators can be put in place for good results.

The study also indicated that a pure PBL approach is not appropriate because of the anxiety caused to students when no background material and immediate feedback are available. In the future the course will be taught by combining aspects of both PBL and SCL methodology. Smaller problems that can be solved over a week's time and hybrid lectures in between PBL tutorials will be experimented in future Study course. Finally it can be concluded that this paper has highlighted the theoretical and practical issues of using PBL in Civil Engineering courses at Indian Polytechnics. Questionnaires and interviews were used to obtain the feedback on the overall effectiveness of the system.

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*Work Together Learning (WTL): Experimenting with the Interrelation of Learning,  
Teaching and Working at the School of Architecture and Design  
(SoA+D), KMUTT*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

It is now widely accepted that theoretical knowledge is not sufficient to develop the full potential of students. At SoA+D, academics address this issue using “Work-Integrated Learning” (WIL). WIL is a pre-training professional course for students. WIL encourages students to practice soft and hard skills in real work situations, while the teacher’s role is to provide support, advice and receive feedback from company’s supervisor. WIL evaluation reports showed that student’s soft skills are a major problem. This research therefore aims to seek a methodology for improving the design student’s soft skills appropriately. From this objective, one of university project-based learning projects was selected to be a real work situation case study. The researchers developed an experiment called “work together learning” (WTL). Researchers gave different assignments to two student groups. Each group worked together with teachers, who played the role of colleagues. In this experimental situation, teachers could directly observe and supervise the students during work. Students were assumed to practice their soft skill under the teacher’s advice. Based on observation, the student's soft skill development was evident because, in the role of colleague, the teacher can directly perceive and address soft skills problems. The result indicated WTL is a useful form of project-based learning for students, especially in soft skills improvement. We propose that it will be more effective to insert WTL before WIL in order to extensively practice advanced soft and hard skills before students undergo the WIL experience.

**Keywords** Work Integrated Learning (WIL), Cooperative program, Work Together Learning (WTL), Soft skills, Hard skills

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## Introduction

The educational transformation of 21<sup>st</sup> century required an adoption of a new paradigm of education. The article of “what is 21<sup>st</sup> century education” gives definition of the schools in the industrial era, that will be laced with a project-based curriculum for life aimed at engaging students in addressing real-world problems, issues important to humanity, and questions that matter. The learner should learn learning methodology and the learning must be cause of learner changing broadly. At the same time teacher should be a learning facilitator to encourage learner for integrative development. (Marriam, et. al, 2007) This propensity will effect to the changing role of teacher students and school and shape up a new concept of “knowledge” which is not mainly concern on Theoretical Knowledge but also Practical Skills. Knowledge can be learnt whereas skills require practical exposure and can also be in-born. From a philosophical perspective, knowledge is intangible but skills can be made tangible by applying those skills to a context and getting the desired result (Economic Times).

Main purpose that educational field always use for learning and development is to indicate behavioral objective which is to identify learning result that expect to be happen which can identify observational behavior and Clear tangible behavior (Orstein& Hunkins, 2009). Nowadays, university provides theoretical knowledge based on tacit knowledge, the theoretical knowledge is as a primary basis of learning while practical or applied knowledge which related to experience is needed to enhance students ready for professional future work. Practical knowledge based on real life experience and be significant during the final year before graduation.

Elizabeth A. Jones(1996) have done the research for National Center for Education Statistics(NCES) about the “Expected Learning outcomes” which is to study skill and learning level necessary for bachelor to work and to live in society. The essential skill for graduate students is composed of communication skill (listening, verbal communication, reading, writing and IT skill), critical thinking, problem solving skill teamwork based on IT. These skills are quite important especially to liberal arts education. (Julie Bogart, 2011). Architecture study is one part of liberal arts. However Jones proposes the entire bachelor should integrate this particular skill throughout the curriculum.

As architecture study is one of professional education; Stark, et.al (1986) defined the expected outcome for the professional education composes of 11 issues. It is composes of conceptual competence which is the understanding of professional basic theory, technical competence means the ability of professional basic skill operation which is not cover the skill of psychomotor skill but also included the interpersonal skills and special cognitive skill eg. creative skill which is really important to architecture study and communication arts. The contextual competence means the understanding of sociological context, economics and culture which related to the professional operation. The interpersonal communication competence included empathic and service-mind. The integrative competence means the personal ability to integrate ability of

thinking, context, technique and interpersonal communication together for professional judgment. Adaptive competence for futuristic problem solves orientation. The expected outcome of professional perspective composes of 5 issues, the career marketability, professional character/identity, professional ethics, professional morality or code of conduct, scholarly concern for improvement and motivation for continuing learning.

"Experience is also being a teacher ever" because it will help you in proper dealing with everything in the outside world. Rooijen V. Maurits mentioned universities must rethink their traditional organizational, philosophical and operational tenants to align more closely with real world needs". However, presently educational paradigm is changing from the teacher center to learner and knowledge center. To motivate student to have an effective learning; experience of professional practice is very important especially the architectural students which is one kind of professional education. According to concept of learning style, (Claxton, Murrell, 1987; Kolb, 1981) which has been developed from experiential learning theory explains the process of learning from experiential learning theory. It is composed of concrete experience, reflective observation, abstract conceptualization and the active experimentation. Kolb's theory cited by Svicki& Dixon(1998) proposed the direction of learning and teaching direction, teacher manages learning activities in order to enhance 4 dimensions of learning;

- A) Concrete experience means experimentation, observation and primary sources review or reading, studying by simulation, movie, to study from the actual problems.
- B) The learning from observation (reflective observation) composes of keeping learning logs/journal, experience changing conversation, questioning
- C) The activity enhance learning from abstract conceptualization; report assignment Project based learning
- D) Active experimentation; teaching from simulation, case study, laboratory, field study or project assignment.

### **Work Integrated Learning (WIL), Learning through working experience**

Work-integrated learning (WIL), also understood as work experience in industry, cooperative education, and field education (Emslie, 2011). Universities have been encouraged to implement WIL and have demonstrated an eagerness to do so; yet accounts of university educator's work roles have not kept pace and generally omit the delivery of WIL (Coaldrake & Stedman, 1999; Hall, 2002; Orrell, 2004). WIL is the key strategy adopted by universities to produce the work-ready graduates demanded by employers (Emslie, 2011)

Patrick et al. (2009) suggest WIL is an umbrella term for a range of approaches and strategies that integrate theory with the practice of work within a purposefully designed curriculum. This is on the same direction of King Mongkut's University of Technology Thonburi (KMUTT)

policy. One of WIL; cooperative program is a part of professional education for School of Architectural and Design (SoA+D) to develop student to be quality graduate and to be precise at professional aspect. The cooperative program emphasizes on the system of student's professional operation experience. The concept of this program is the collaboration of school and private office to enhance 4<sup>th</sup> year students (a year before graduation) to get involved in the future career. The expected outcome of cooperative program is to encourage students to apply hard skills in the real workplace and to practice their soft skills at the same time. soft skills are self management skills and people skills such as communication skills. In contrast, hard skills can be learnt in school and from the books. (Hard Skills vs. Soft Skills – Difference and Importance, June 30, 2011 Lei Han )

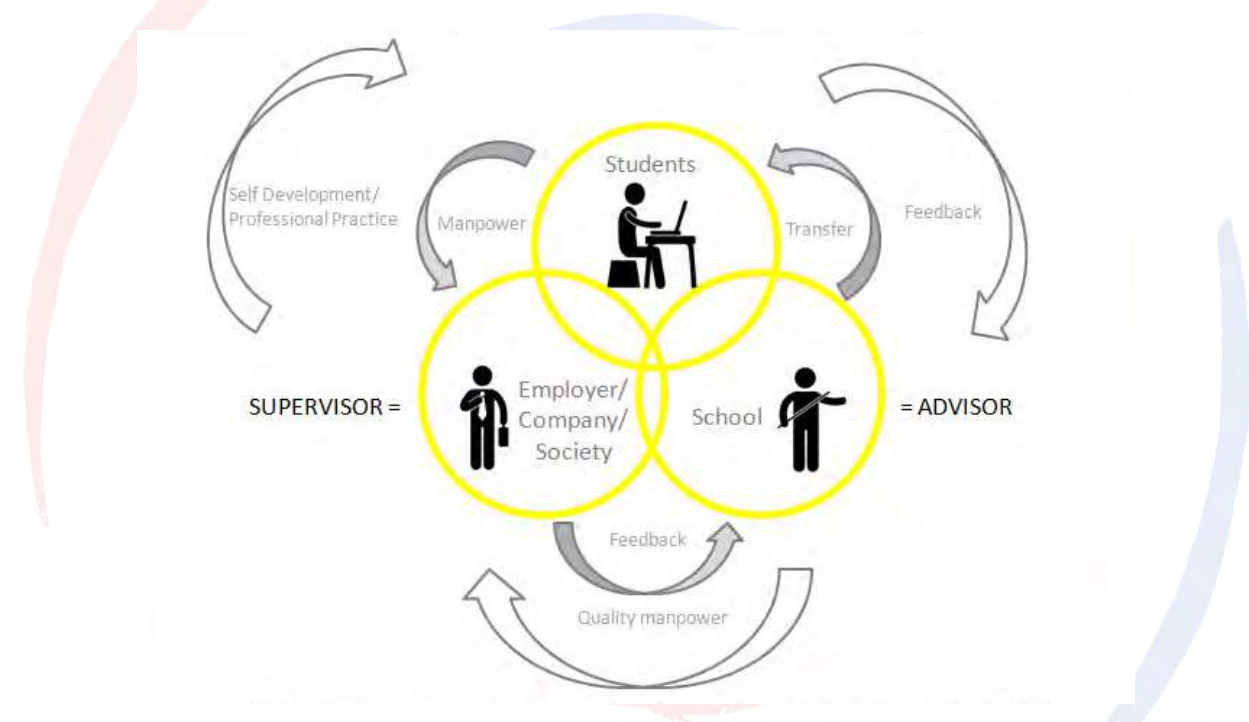


Fig.1: Relationship and benefit of cooperative program stakeholders

This above diagram shows the cycle of benefit and relationship of each cooperative program stakeholders. While students perform as temporary company workers and give manpower to the company they also can experience the professional career and have self development at the same time. The second stakeholder is company which adopts students to work with will get manpower and will perform as a field supervisor to reflect student's performance back to school advisor. The third stakeholder is the school advisor; the duty is activities planning, student counseling, and student evaluation in which customized to the company's jobs At the end of cooperative process Students have to conduct cooperative study report, field supervisors or business owner suggestion and evaluation then advisor responsible for field experience – compile and approve.

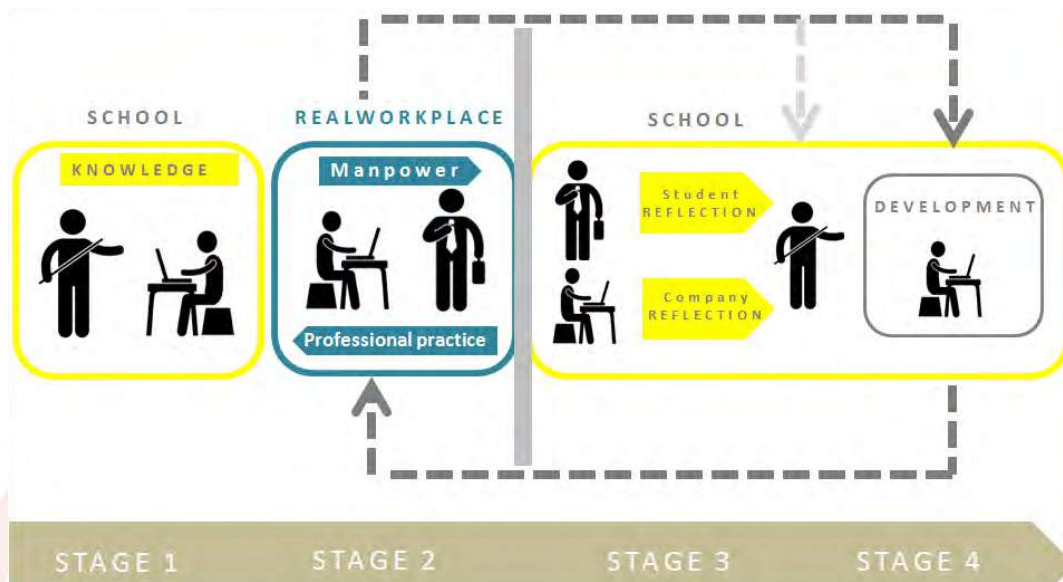


Fig.2: School duty and Cooperative process relation

Fig.3 shows the duty of school from theoretical knowledge provider to practical process with the real company. It shows the limitation of this process that is the school advisor cannot directly observe while students are working in the company.

From the cooperative program evaluation report (2011) exposes the reflection from field supervisor to students in hard and soft skills classification as following; Hard skills: individual's ability to complete technical tasks; program and technical skill improvement, and professional skill improvement such as structure Improve skills for construction knowledge implementation in real profession. At the same time the soft skills which mean interaction with people which students should develop are composed of self management such as time management, childish habit, communication and networking skill improvement, leadership and teamwork improvement. The conclusion is that about 23% is hard skill and about 77% is soft skill needed to be improved.

## Experiment with the Interrelation of Learning, Teaching and Working

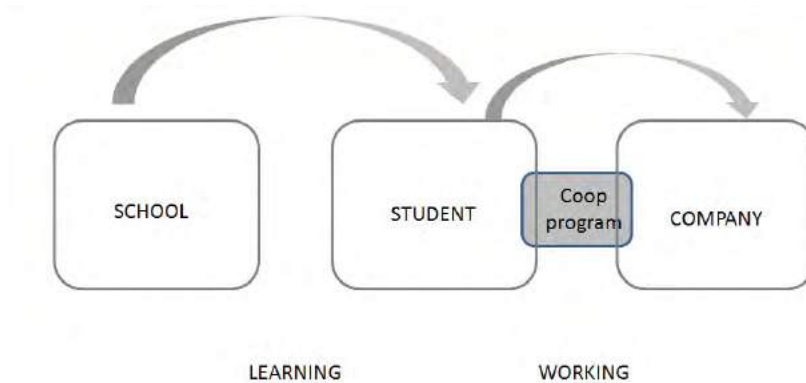


Fig.3: The location of cooperative program

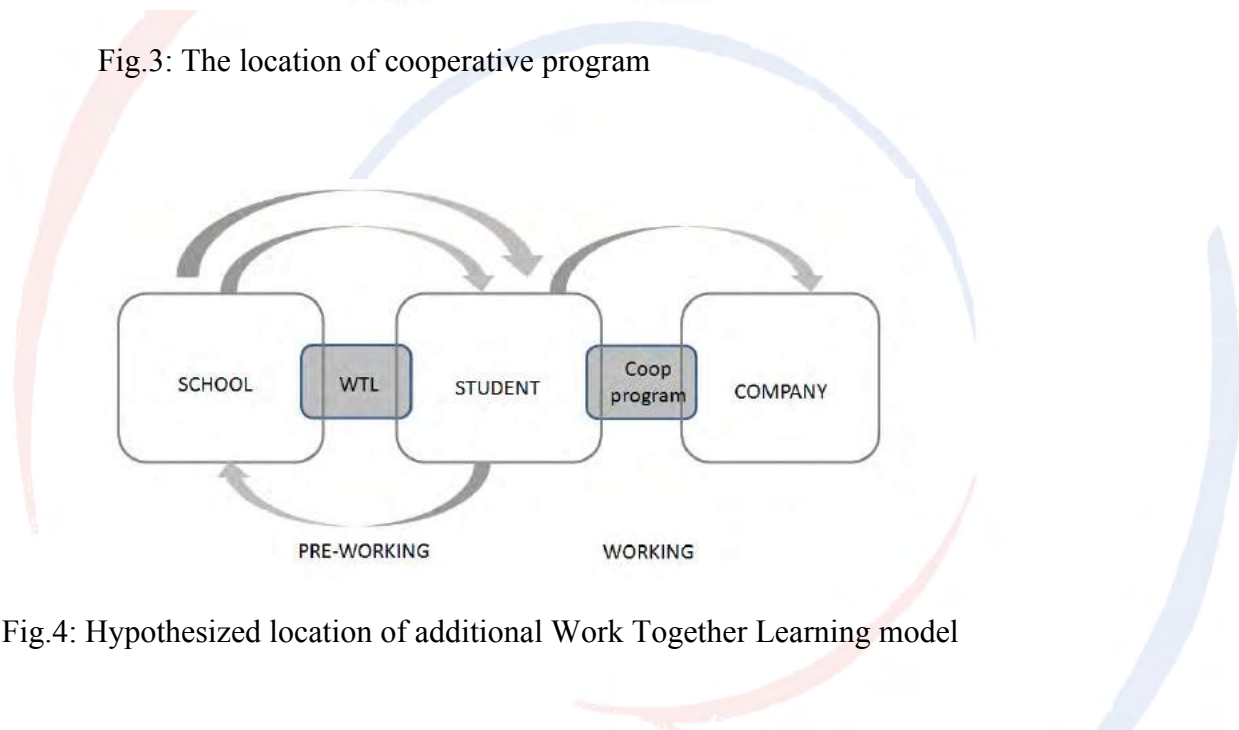


Fig.4: Hypothesized location of additional Work Together Learning model

From the company reflection school should pay attention to improve student's soft skill. This is the background of question "How to develop and improve student's soft skill appropriately".

The objective of this study is to experiment the methodology to improve students soft skill appropriately. If students have an opportunity to improve their soft skill, they assumed to gain more benefit of self integrative development of soft and hard skill practicing while attending cooperative program. Normally, soft skill practicing cannot effectively practice in school it usually related to emotional Intelligence or EQ which most soft skills are not taught well in school and have to be learned on the job by trial and error. (Han, 2011).

An university project-based learning was selected to be a real work situation case study "The Museum of Renaissance Conservation and Developing Learning Communities for Sustainable Tourism at Baan Ngangoi and Baan Ponplalol, Tao Ngoi district, Sakhon Nakron province,

Thailand” one of community development project of the university has been chosen to be a trail project to develop student’s soft skill evidently. It is consistent to the article of “what is 21st century education” which mentioned about the role of an interdisciplinary, project-based, and research-driven, connected to the local community effected to thinking skills, multiple intelligences, technology and multimedia, the multiple literacies of the new paradigm of education. Same perspective with Abeysekera (2006) who referred to “service learning” that is student has intentional learning goals and reflects actively on what is being learned throughout the experience. These programs are intended to develop research, critical thinking and interpersonal skills through participation in public service. However service learning may suit some academic programs more than others. For instance, they may be less suited to business-related studies, such as accounting, on the basis that most accounting professionals are employed by firms in the private sector (Certified Practicing Accountants, (CPA), 2002). In case of future architect or engineer need to possess both ‘hard’ and ‘soft’ skills. Soft skills are important because architects interact in organizational settings instead of working by themselves. Soft skills may be grouped under ‘conscientiousness’, ‘initiative’, ‘social skills’, ‘controllability’ and ‘commitment’ (Ofori, Low, 2000).

#### **Methodology: Work Together Learning (WTL)**

The methodology of this participation observation research involved the development of appropriate soft skill can be divided into 3 stages. It is started from the first stage which is “Reviewing” The secondary data of relationship of WIL cooperative program in SoA+D work and knowledge, company feedback, type objective and expected outcome of WIL program are the main interests. Then the second stage is WTL model design. And the last stage of this study is experiment and implementation before make a conclusion and suggestion.

“WTL” (Work Together Learning) is a process adopted for experimenting with this study. The conceptual development of WTL is based on grounded principle of WIL (Work Integrated Learning) but to investigate and to fulfill WIL’s absent dimension. The hypothesis of this experiment is WTL should be an appropriate preprocess before cooperative program. The simulation of the real workplace atmosphere in school project will drive students practice their soft skill automatically. Advisors gave different assignments to two student groups and work parallel. Each group composed of 2-3 instructors and 3-4 students, students worked with advisors. In this experimental situation, advisors played the role of senior/ field supervisor instead of knowledge giver accompanying with students who acted like co-worker. The multidisciplinary teams of 4th year of Interior Architecture, Architecture and Communication design assembled for this experimental study sample, the major processes are as following

**Method 1:** Co-creation: To create a workshop or activity for data collection, Advisors (Field supervisor) gave the objective of data collection to co-worker and brainstorming to sort out the most suitable process.

**Expected outcome:** Students can practice soft skill; communicating, listening, engaging in dialogue, giving feedback, cooperating as a team member, solving problems, and resolving conflict. Leaders at all levels rely heavily on people skills, too: setting an example, team building, facilitating meetings, encouraging innovation, solving problems, making decisions, planning, delegating, observing, instructing, coaching, encouraging and motivating.

**Method 2:** Design and presentation and community: To bring the result from co-creation workshop to design the learning space for community, present and get some feedback from them.

**Expected outcome:** Students can apply professional skill eg. Computer skill, design skill, construction and drawing skill, while practicing soft skill at the same time.

With this methodology, teachers could directly observe and supervise the students during work. Students were assumed to practice their soft skill under the teacher's advice.

## **Result**

From the observation of WTL experimentation can be divided into 3 stages

### **First stage**

**Advisor:** Change the role from knowledge giver to be field supervisor, advisors had to spend much input to reduce to blur the hierarchy and reduce the distance between advisors and students

**Student:** Students still shy to pretend as a co-working with advisor without strong hierarchy. They are still wait for confirmation and decision making from advisor.

### **Second stage**

**Advisor:** Being a motivation driver and facilitator and consultant, to stimulate student's discussion without suggestion, propose question to group of student and being moderator for discussion

**Student:** Self adjustment to be part of teamwork gradually, discussion and brainstorming occurred automatically and smoothly. They have freedom to learn and freedom to share. Students have more self confident to their idea, they argued the advisor's idea reasonably. This stage initiated sense of belonging and responsibility of students to their work/project.

### **Third stage**

**Advisor:** Working students without hierarchy, propose and listen to students appropriately

**Student:** have more leadership skill, work management and communication skill with both team worker and supervisor, Learner as an initiator and whether or not the group members worked effectively and learnt from and with each other.

## Analysis of the results

From this result, it can be analyzed that Work Together Learning (WTL) should be engaged with the actual project or field study. In this case the project is community development/community service type. The outcome is quite satisfied and clearly noted. The students can develop their soft skill as the experimental expectation. WTL is very useful to be a preparation process before cooperative program. When the student participate the cooperative program with the company, they will be able to adapt their ability and their experience both hard skill; the theoretical knowledge that they have been learnt from school and the soft skill that they have been practice with the WTL participation.

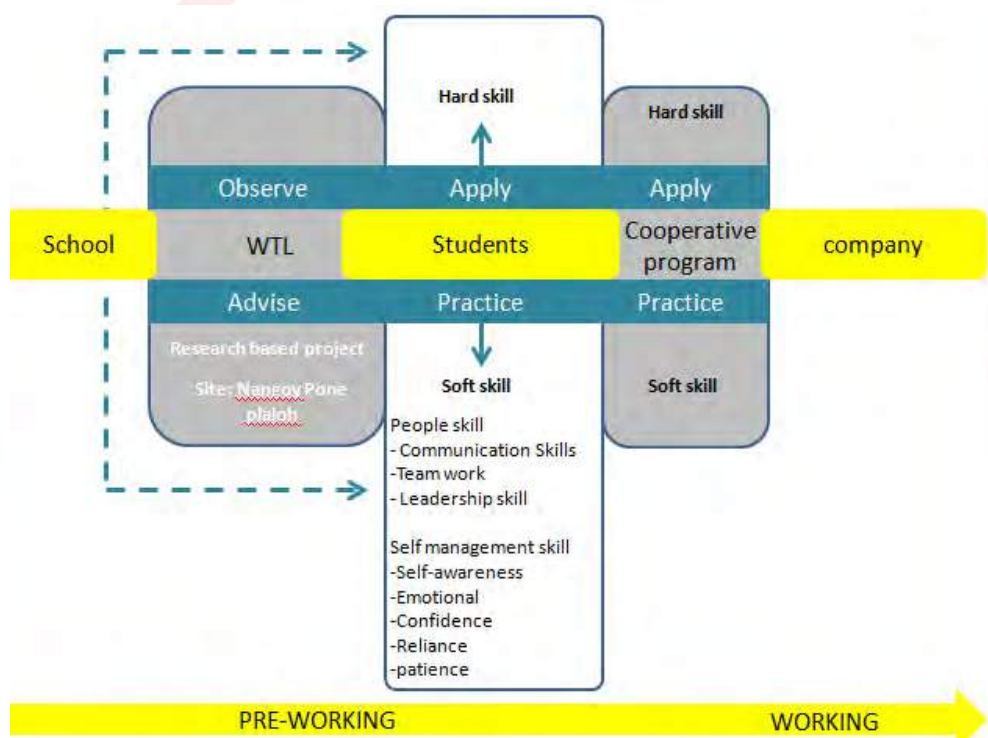


Fig.5: Suggestion of the relationship between WTL and cooperative program

The diagram above shows the process which WTL should be assessed into either subject which operated with the company or the organization outside to enhance cooperative program. The advisor can observe the student's ability closely and give them advice appropriately.

## Limitation of this study

The limitation of this study is the duration of the experiment. Actually, the cooperative program duration is approximately 16 weeks. The WTL experiment is only 5 days. The limited time encouraged two groups of student pay much attention to their task consistency until finish. The

assumption is how long students can concentrate and perform their responsibility to their mission continuously as professional do? Another limitation is the ratio between advisors and students. This experiment, it is about 1:2 so, the advisor can take care of students almost one by one and closely. So what is the suitable amount of students per an advisor. In the real workplace, on the other hand, school cannot predict the amount of the field supervisor in the real workplace. WTL on this study aims to practice and apply for architecture/design students who have to be trained on people skill as same as specific professional hard skill. To bring this WTL to apply with different professional education or study field, WTL process should be adjusted as followed the objective and nature of each type of education. At last the appropriate evaluation of WTL experiment on this study is not be assured this evaluation needs to be elaborate.

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*An Evaluation of an E-Learning Blended Course in UK*

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The Asian Conference on Education 2012

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## INTRODUCTION

There is a continuously growing scale and rise in demand for education and training in response to the requirements of the knowledge society (OECD, 2001). To meet this demand for education, E-learning emerges. It seems to have different meanings for different people. It is generally considered by researchers in this area that e-learning could be seen in a narrow concept and a broad concept. The narrow concept views e-learning as a term similar to computer-based training (CBT). On the other hand, the broad concept sees e-learning embrace more than just “the provision of learning opportunities through computer technology” (Pollard & Hillage, 2001; p7). Hall and Snider (2000) defined e-learning as the process of learning via computers over the Internet and intranets. Hall (1997) defined computer-based training as an all-encompassing term used to describe any computer-delivered training including CD-ROM and World Wide Web. Gotschall (2000) added that online training was also known as net-based training.

In terms of the form of e-learning, Hall (2000) pointed out that e-learning could take the form of a complete course, access to opportunities for “just-in-time” learning, access to components, and the parts of courses to acquire and test knowledge or content as an immediate resource to resolve an immediate problem. Furthermore, he contended that more links to real-time data and research would become quickly available.

The models of e-learning are changing, with knowledge increasingly viewed as something that can be created in, and captured by communities of learners rather than a discrete body of information to be transferred (Pollard and Willison, 2005).

A great number of institutions nowadays have extended or want to extend their use of computer-based technology to provide learning resources and communication platform for learners and tutors. This research aims to investigate the use of e-learning as a support of the traditional teaching method and analyze in what ways e-learning contributes to better teaching methods and learning environment for the e-learning blended courses run by an institute in UK.

The main objectives of this paper is to explore the way an e-learning course in an institution is virtually designed, developed and delivered to students, in what ways people are arranged, under what thoughts the departments have decided to launch a course blended with e-learning technology correspondent to a subject area. Most importantly, it is concerned about both the students and staffs’ attitudes towards this program. Based on these questions to be answered, it will evaluate the pros and cons in this e-learning blended solution, trying to figure out problems existing and progress it has made, with a perspective that it might enlighten the development of other Msc. e-learning programs.

## **METHOD**

### **Data collection**

The data collection was conducted at an institute in UK, among the students who were taking *EEE (engineering enterprise and excellence)* course. Three approaches were adopted to collect data:

1. observing the online course provided on websites;
2. interviewing faculty members;
3. distributing questionnaires to EEE students

#### **Observing this e-learning blended program via its web pages.**

In forum, every piece of information entered into the system, including all the messages is stored and can be accessed. These messages are suitable for content analysis (Holsti, 1968).

The information observed covers the online contents provided including journals, mind maps, course instructions, messages content left by students and staff in online forum, and students' blogs. This step is vital since it could help the researcher to recognize the fundamental framework behind the course. Sensible questions could be only raised on the basis of an acknowledgement of the subject. After a thorough observation, drafted questions to staff and students were sketched.

#### **Interviewing faculty members**

Target students and staffs should be representative and eligible. Under the constraints of limited time and human resources, only a small number of students and staffs were chosen. Besides, both the names of students and staffs were kept anonymous.

Staffs include one IT service staff, the program leader and one tutor of the EEE module. The interview helps the researcher figure out the key problem and questions, and enhances the understanding of the course implementation.

#### **Distributing questionnaires to EEE students**

Based on the drafted questions designed after step one, a pilot questionnaire was personally sent to one student with an interview followed. The final questionnaire was then decided after revision. These questionnaires were then sent to students in a large scale via email.

As previously mentioned, instead of distributing the questionnaire through the official channel, questionnaires were sent with the assistance of interviewed students, to ensure a high respond rates.

Students' background experience is an uncontrollable variable in e-tutoring. Also, considering the limited number of questionnaire respondents, the analysis of students answer is more closely related with their background. Therefore, it is necessary to present table 1.0 which lists the main background of respondents. Here, students' names were kept anonymous.

**Table 1.0**

Student NO.	Gender	Age	Background (subject for BD)
Student A	Male	23	Computer Science
Student B	Female	23	Business information system
Student C	Male	44	Aeromechanical systems engineering
Student D	Female	23	Business
Student E	Female	26	International Business Administration
Student F	Female	23	Information Management
Student G	Female	23	E business
Student H	Female	22	Mathematics and Business Studies
Student I	Male	24	International trading
Student J	Female	23	Business Law

Answer sheets were then being examined to check if most of the key questions were answered and if the questionees are eligible EEE students. With a consideration that, although cases have been selected in a limited range, performance would still vary because of age and working experience, therefore, the background information about the students selected were given as a reference.

The analysis will in general rely on the theoretical proposition that led to the case study.

## DISCUSSION

Forums, blogs, links to reading materials and content storing are not new to those learners. 90% students taking EEE course expressed that they are familiar with these elements and are fully skilful in using them. These four elements are also not a unique existence to EEE course. They are virtually essential elements of the institution's websites as a whole. Every student can sign up and build up a blog. EEE course makes it compulsory for learners to blog and initiate them with forum discussion. Among these four elements, 8 out of 10 students put forum at the first place. The importance of these elements decreases, following a sequence of Forum, reading materials, blogs, and content storing. Hereafter, the contribution of each

element will be discussed.

## Forum

Forum plays a crucial role in supporting the discussion. It reveals its benefits in this particular context.

Firstly, the flexibility of e-learning has again been proved is enormous. All of the students spontaneously pointed out that they enjoy the flexibility forums provide. In addition, the benefits are two folds: time-based and location-based. For example, during the interview with student A, the interviewer noted that sometimes, it is hard for team members to accommodate each other's timetable or when they have to discuss topic overnight and hand in the report next morning. The Forum allows them to discuss at anytime anywhere. This echoes the advantages claimed by a range of e-learning researchers (eg. Karon, 2000; Wentling, Waight & Gallaher; 2000)

Another student (Student B) raised the language issue. Particularly in the institution's learning context, overseas students tend to speak their mother tongue to colleagues from same country. Consequently, it sometimes happens a team is split into small groups. This phenomenon ruins the learning community the course intended to build. However, in forum, it is comfortable for course participants to post messages in English and meanwhile understand colleagues without accent problem.

By using the constructive approach, students are expected to gain their own understanding of the concepts. At the mean time, discussions on forum give each student an opportunity to make contribution to the knowledge pool in the learning community, which to some extent would revise the mistakes occur in the self-awareness of the knowledge stage, and offers students various views towards one question, as student C said "each student revealed different aspects of each subject rather than all quoting from the same set of tutor provided notes or set text."

From the tutors' view point, the "easy to track" feature helps tutors be able to go through every thread on forum and to monitor the discussion. In addition, unlike the in-class discussion, the contribution of each participant is blurred. In this way, the assessment is based on the quality and quantity of students' message (from interview w/ Prof. Roberts'). Tutors could also have a record of the students' login times displayed. Student A expressed that this way of assessment was fairer than in-class performance based evaluation. This approach of evaluation echoes "portfolio" assessment method and the discussion thread is in another sense an automatic record of portfolio.

However, 6 out of 10 students stated that face-to-face discussion was still necessary, because it is more direct and saves time. Moreover, although 9 of them were familiar with forum, they emotionally felt less get in touch through solely online discussion. This fact reflects the use of blended solution is appropriate in the school settings.

## **Online reading material**

Online reading material is also an important element in EEE-learning environment. The EEE websites provides the direct extract of learning contents on WebPages and the links to e-journal, online library and database. Students are encouraged to read through the contents provided and meanwhile to look for more materials by themselves.

Similar to forum, flexibility and convenience are basic benefits figured out by students. They are given the right to decide their own reading time instead of “setting 8 hours in class”(student D). Meanwhile, the links online are 24hours available, unlike the library which has opening time (Student C).

The biggest problem exists for tutors is that it was difficult to measure how many hours students spend on reading. It seems fair for stream leader judging students by evaluating their performance, but the student's knowledge edge remains unknown. At the meantime, as Pollard & Hillage's (2001) highlighted, online reading method is heavily reliant on self-discipline, so students' reading time to a large extent relies on their motivation. However no action has been taken to ensure the motivation. Student A spends only 5-6 hours a week on reading, which is much less then the time required by the program. Meanwhile, Student F, D, E pointed out that well time management was a challenge in their study. The rough time management chart provided online seems not enough to ensure their motivation.

Validity of materials places another problem on online reading (Pollard & Hillage's; 2001). Several e-learning commentators doubt the quality of the-learning material. In the case of EEE course, the links to official websites and formal journal providers, to a large extent, ensures the quality and validity of reading materials. However, problem still exits when students look for answers via online search engine.

To solve the motivation and validity problem, two suggestions are given. A detailed reading checklist would suit for students to clarify the-learning points, and meanwhile encourage them to cover all the points through reading. Similarly, an online pre-test would be able to have same effect as the checklist has, and additionally offer tutors a tool to measure students' knowledge edge.

## **Blog**

It is creative to use blog as a tool of e-learning, because traditionally blog concerns more about personal opinion on its own right. In the case of EEE course, blog doesn't shift to an academic publication tool, but somewhere in between becomes a space where students reflect and review their learning. Pollard & Hillage (2001) emphasized the share of experience and thoughts of learners in a higher model of e-learning. Blog actually provides a platform where student can achieve this sharing of experiences.

The comments from students prove the feasibility of this self-reflection and sharing of

thoughts. In student H/ B/ D's opinion, writing blog posts is a useful way of getting all of their thoughts out and by writing them down they reflect on the knowledge and are able to make further logical steps with their argument. It is good also to try to explore how students can apply their knowledge in the future. In comparison, student C noted that when the study and the topics were new, the blog allowed "the recording of thoughts" and for others to share and build upon their thoughts.

From the tutors' aspect, the practice of blogging provides an opportunity to acknowledge what learners have learned and how they will continue to challenge themselves. On EEE website, students are encouraged to use the web form of blogging which allows students to share their thoughts with others (from the institution's website). It also defines writing a blog as an important part of reflection, especially in adult education, since adults learn best and have better retention when they consciously take time to reflect on their learning.

However, although the idea of sharing thoughts and self-reflection is good and feasible, the feedbacks show that students did not frequently write blog posts or visit their colleagues' blogs. Student A wrote his blog to meet tutors requirement and seldom visit colleagues' blogs. Student F&G thought the blog was not quite helpful. Other students wrote blogs depend on their moods. All of the students seldom made comment on other students' blogs. This result shows that most of students realized the advantage of self-reflection of writing blogs, but only two students hinted at the sharing of thoughts. A contrast exists between what clearly states on EEE WebPages and learners' understanding. Therefore students still need explanation on the purpose of using blogs and they need to be stimulated at this stage. Without any one of the two factors, the self-reflection and sharing of thoughts hardly take place in the meantime.

### **Content storing**

Content storing is a supplement tool for course participants uploading and sharing useful files. It doesn't play a key role in the-learning environment, because the students' feedback shows the content storing system is not frequently used. Student A hoped the content storing function could be connected with the forum; therefore course participants would be able to upload and download useful documents directly in the discussion board, which is more handy and convenient. Presently, they can only firstly upload file and then post messages on forum to inform others.

### **Cooperation between IT staffs and tutors**

The EEE course doesn't outsource the design and development part to a third party company. Instead, the course was developed with the help of the University IT service. IT Services provides the essential resources and support to all members of the institution to gain access to information technology for research, teaching, learning and administration purposes (IT service website).

Mr. Carpenter is a key staff in charge of IT service and e-learning. As Mr. Carpenter said, to tailor an online program for the EEE course, the technicians have to do debugging and corrections day by day. Outsourcing would put obstacles for the further improvement, since it is time consuming to keep in contact with the third party company. This is the main reason why the institution relies on IT service, but the cost is subsequently higher than purchasing from third party providers.

Limited material on the way of cooperation between IT staffs and tutors has been found in literature. However, both the stream leader of EEE and the IT service are satisfied with their cooperation so far. Therefore, the approach of this cooperation (interview w/ Mr. Carpenter) in university setting will be described. After the stream leader expressed the willingness of launch an e-learning course, given the amount of time and money IT service gets, IT staff there will introduce the functionality of tools they already have to tutors. In this case, the stream leader was satisfied with the functionality they could offer. Then a team of 7 java developers negotiated with tutors and worked out the main “trunks” the tutors need, following by building up the WebPages with “site builder “. During this process, a frequent communication between tutors and IT service is needed. The IT service has to accommodate the requirement raised by tutors and finally train the users.

### **SCORM – e-learning standards**

SCORM is the most widely used collections of standards for web based e-learning (Fallon & Brown, 2003), which aims at building learning systems that enable the reusability and sharing of learning contents developed by different authoring tools (Gilliean & Su, 2006). However, IT service doesn't adopt any e-learning standards. Mr. Carpenter argued that each e-learning program on Campus tailored to a particular course, and there was no further plan of selling these e-learning platforms. Therefore, it is no need to adopt SCORM or any other standards.

It seems fair because the system was developed solely for users in UK. However, it neglects the fact that the university has decided to set up branches in Singapore and other oversea regions. Not using SCORM would be a big problem in the way of branch development.

On the other hand, the sharing of resources between institutes is becoming popular nowadays. An un-standardized system would prevent the sharing of e-learning resources and codes between universities. Therefore, given the further development of the institution's scale and trend, the adoption of SCORM is suggested.

### **Tutors' role**

In the EEE course, tutors play a role of a co-coordinator and an advisor. E-moderating is a concept concerned with tutors' role in e-learning. Considering the case of EEE – an e-learning blended course, the tutors' role is virtually more complicated, the examination of tutors' performance will follow the sequence of five-step model (Salmon, 2000) introduced in the literature review chapter, simply evaluating tutors activities from e-learning's aspect.

At the first stage, students were given basic information on the EEE course structure. However, strong motivation, which Salmon (2000) defines as a prime factor at this stage does not seem work as it expected, as analyzed in the “blog” session. 9 out of 10 students did not encounter e-learning before. 4 students were skeptical about the e-learning method. Others were not sure about the form of the learning environment would be. In contrast, after one week of study, they all felt comfortable and satisfied with the new method, which from another perspective proves the success of familiarizing students with the learning environment at the second stage. Students gradually got used to the cooperation between course participants. Further more the course related interaction became more collaborative. Due to the students’ familiarity with the online tool, these two stages seem to be achieved easily. However, at stage five, students’ idea to this e-learning environment were various. 8 students reflected that they still follow tutors instruction, without a clear method to deal with this new learning environment. When instruction was not given after a module finishes, students tend to stop reviewing the knowledge they gained. It could be found that the EEE course has gone through the 5 steps of e-moderating, which to some extent is positive. However, as previous analyzed, the e-moderating in this case is still lack of motivation at the first stage and further development guidance at the final stage.

## CONCLUSION

The initial purpose of this project was to provide an analysis of e-learning’s contribution to the EEE course. More specifically, the primary research objective was to 1) investigate how an e-learning blended course in an institution is designed and developed, the necessity of involvement of e-learning elements, and the role tutors play 2) analyze the pros and cons existing, as well as the space for further development.

The initial research process began with a detailed investigation into current literature on e-learning. The research on e-learning covers various aspects in educational and technological areas. Then following the objectives, interviews and questionnaires have been conducted with staffs involved in e-learning and students to gain their views and opinions on the use of e-learning elements and study within the e-learning environment. The analysis of programs provided on the institution’s websites and course participants’ feedbacks shows that all students and tutors are skillful to computer operations and well accept the e-learning’s involvement in learning.

The EEE course adopts a constructive approach for students to build up their own autonomy with the assistance of e-learning. In terms of e-learning, students were satisfied with the flexibility forums offer, but it seems that they need more guidance on the approach of dealing with this new type of learning environment and more motivation. With the current situation in EEE course, more knowledge management skill is expected to be involved. The research also identified the importance of using SCORM in sight of the institution’s future development.

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*A Multiplicity of Place*

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Official Conference Proceedings 2012



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The way we understand and engage with 'place' is changing thanks to mobile computing devices (smartphones/tablets). Users can digitally dig down through layers of history, and move across paradigms of knowledge ('alternate realities') all while standing in a particular location. And, with the advent of augmented reality applications, used in combination with cloud based data management systems, multiple streams of information can be accessed simultaneously and overlaid on the landscape.

So what are the implications of using these new technologies in situations like Aotearoa/NZ where knowledge is contested and epistemological colonisation has occurred: should 'other' realities and understandings be placed alongside each other as if they are of equal stature and relevance? Who should be able to access information - should some information be reserved for those who belong to certain groups? And what are the spiritual implications of laying out webs of information across landscapes?

The following material was collected using semi-structured interviews, and represents a cross-section of perspectives addressing the points of inquiry noted earlier. It is by no means representative of a population in general – merely a sampling of practitioners working in and around a particular place. The respondents are Maori and Non-Maori, and work across different disciplines and paradigms of practice including: Maori Elders and Kaitiaki (Spiritual Guardians/Caretakers of Place); Archeologists; Local (European) Historians; and Educationalists (Maori and European).

### **Epistemological Multiplicity of Place and learning**

Academic place based research involves a number of different disciplines and ideologies (Robbert), 'place' is, at once, geological, statistical, architectural, philosophical, cultural, psychological, environmental, educational, spiritual and more. These different disciplines, while crossing and blurring academic lines, are not yet fundamentally connected.

In contrast, indigenous understandings of place are often complex and holistic in nature and involve a construction of a way of being and seeing that is in direct relationship to the physical environment. (Denzin, Lincoln, & Smith, 2008, p. 136). Place is multi-dimensional, interconnected and alive with spirit (T.K.K.B Morgan, 2006; T.K.K.B Morgan, 2009a, 2009b; Patterson, 1992). Learning is acquired through living in one's environment (Berkes, 2009) and is connected with the whole person rather than just their mind. (Maurial, 1999). For this reason connection to 'place' and context is critical to content (Maurial, 1999).

As Semali & Kincheloe (1999) point out, it is problematic to try and create a taxonomy of alternative ways of knowing and alternative pedagogy. But it is reasonable to say that indigenous cultures the sense of 'knowing' can be very different, and that it has, until relatively recently, has been systematically marginalised by a western education system that devalues these underpinning philosophies (see Denzin et al., 2008; Smith, 1999)

NZ is unique in that it has rehabilitated a 160 year old Treaty between indigenous peoples and Europeans (Te Tiriti o Waitangi/ The Treaty of Waitangi) and enshrined this in legislation (Sibley & Liu, 2007). This treaty forms foundational document which underpins bi-cultural policies (including educational frameworks). However, NZ did not escape the oppressive and marginalising effects of Pakeha rule (Walker, 1996) and there is a recognised gap between the theory and practice of biculturalism (Taniwha, 2010)

## Technological Multiplicity and Learning

Thanks to the aforementioned developments in technology, data that was previously held in multiple locations (within families as oral history; within museums and city council archives; within libraries and universities; within art galleries) can be (if digitised and made accessible) brought through to a user at a touch of the screen; stories and myths can be digitally located in the place from which they were generated. Places can be seen as multi-layered constructs containing multiple dimensions of social, technological and physical interconnections (Resch, Britter, & Ratti, 2012).

Internationally, educationalists are experimenting with this to create location-aware mobile (hand-held computing) games that allow a rich interchange of data both from user to facilitator, but also collaboratively from user to user and user to the environment (de Souza e Silva & Delacruz, 2006). In Aotearoa/New Zealand, the use of mobile devices (such as tablets) in classrooms is increasing, and in some schools they are compulsory purchases (Binning, 2012) and Augmented Reality technology (while still relatively under-utilised) is gaining traction – but mainly, at this stage, in the business community (Wolde & Virki, 2012).

## Multiplicity and Contested Histories

So, mobile applications now allow for multiple streams of information to be accessed in multiple formats in a particular (contextually relevant) place– in contrast to using the more traditional ‘technologies’ of paper or digital textbooks. In this environment of accessibility and multiplicity one wonders whether ‘other’ realities and understandings be placed alongside each other as if they are of equal stature and relevance?

Respondents contacted through the study were generally positive regarding the easy accessibility of information but most qualified their support in some way. In one participant’s case they could see how efficient this process could be but worried that relationship building that would normally occur as part of any information gathering process would be lost. Another participant noted that they were fine about having different histories available simultaneously, but had a more general worry was that the digitisation of information means that the Government can appropriate material and use it in ways that is not authentic or supportive of their culture. This participant noted that a government department had sourced a few local stories (via secondary analogue material) and used these as source information for a sign near a sacred site. The material was partial and incorrect and in the participants view “*corrupted their culture*”. In this case, the individual saw this technology as potentially emancipatory as they could put their own information down in the form of selectively accessible ‘geo-markers’, ‘parallel’ marks that contrasted ‘official information’.

A third issue that arose was the potential for information to be lost in the tumult of individual stories and voices. It was felt that the user may get ‘lost’ accessing disparate forms and sources of information and the participant felt that experience and expertise was needed to ‘sift’ through material and present it in a way that was useful.

At least one respondent (a Maori educationalist) clearly positioned themselves as wanting to promote indigenous material (tribal histories) first and foremost. They noted that as Maori then had been subjected to Pakeha versions of their history which negated their own values. They were concerned that foreign teachers were teaching Maori children with Euro-centric view points and this did not cater for children or affirm who they really were.

## **Legal Boundaries and Accessibility Issues**

Another issue that appeared from the research was the issue of access and intellectual property. With the increasing degree of digitisation of oral stories there seemed to be important issues arising about how to maintain tight protocols around access of information. Indeed, one participant in the research who was a member of a commercial AR development organisation was keen to make it clear that they were operating from the position that information was the total property of the user and it was at no stage their property. They made clear that this was in contrast to other organisations researched that had varying degrees of access (and rights over) user data.

It will be important for indigenous organisations using these technologies to ensure that they have taken good advice over the implications of digitising their histories – both in terms of boundaries of accessibility and intellectual property rights. Commentators on indigenous engagement with computing not with concern the potential for commodification of thought and communication (Bowers, Vasquez, & Roaf, 2000)

## **Spiritual Implications**

When engaging with mixed reality technologies it is easy to be seduced by the excitement of what can be done, and the vision of implementing it as far and wide as possible. It is also rare to think about the implications of using this technology in anything other material terms. We may engage with the political or economic implications depending on our discipline or theoretical orientation, but it is very rare for academics to engage with the spiritual implications of technological programmers and advancements. In the case of augmented reality applications, we are laying out webs of information across landscapes, so what might be some spiritual implications for this work on the landscape or the spirit of the place in which it is implemented?

In general, most respondents were more concerned with the intent and rational behind the use of technology (i.e. the intent of the human using it), than the nature of the technology itself. They believed that if the intent is right it is fine, but control needed to be maintained over the process of implementing the technology in sacred spaces so that no abuse occurred. Another also noted that all technology was just a tool that was as good as the person using it. Like anything else it could be used for good or ill. These views seem to fall into the stream of discourse promulgating technological ‘neutrality’. However, there are concerns that technological neutrality is a myth and that it in fact hides a process of increasing consumerism and dependence on technology in our day to day lives. (Bowers et al., 2000, p. 185).

One participant spoke proudly that the beauty of their culture was that it was forever evolving and that using different technologies was part of this adaption process. Another also noted that they were always trying to adapt and if the technology was going to help us be able to share knowledge out to their people then that sounded good. The dynamic nature of indigenous cultures has been noted by a number of researchers (Semali & Kincheloe, 1999; Smith, 1999), but it remains to be seen as to how these emerging technologies interact with the dynamically changing world in which they are engaged. In order to provide some kind of balance it will be important to educate teachers to understand how technology may affect cultural ways of knowing.(Bowers et al., 2000)

## Conclusion

The places in which we work, live and learn have always been multidimensional – the physicality of the land, the social interactions, the meaning we make from our interactions, memories and connections all combine in rich layers of knowledge and information. Academics have begun to recognise this in their increasingly interdisciplinary discourses, but indigenous peoples have recognised this for thousands of years and also understood that ‘place’ is also an inherently spiritual concept tied up with one’s identity and inner spirit. Now, emerging technologies allow us to more starkly realise the multidimensionality of ‘place’ framed as it is through the viewers of our mobile devices. With the rapid development of technology we need to be mindful of the issues that arise in contested spaces where colonising influences have marginalised indigenous and first nation peoples. Although there are indications that technological developments are supported, the degree of partnership, participation and respect afforded to indigenous groups is critical to the implantation of any educational programme involving their interests.

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The logo for the International Association for Frontiers in Education Research (iafor). It features the word "iafor" in a light blue, lowercase, sans-serif font. The text is centered within a large, stylized circular graphic composed of two concentric, slightly irregular arcs. The outer arc is a light red color, and the inner arc is a light blue color, matching the text. The overall effect is a soft, circular frame around the text.

*Developing of Industrial Design Program in Major Subjects to Suit for Local Students*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

The first Industrial Design program in south started by The School of Architecture and Design, Walailak University in 2007. The aim of the program is to create local industrial designers emphasizing on local identity, cultural, materials, techniques and so on in order to serve the needs of the southern businesses; to preserve and promote local identity of southern through design.

After 3 years, the evaluation was taken to determine the result of the curriculum in order to adjust the learning and studying methods which is suitable to students throughout the 4 academic years. The study was collected from current teachers and students of year 1, 2 and 3. The study found that most of students have little experience in design works and don't know how to apply basic design knowledge to their design. Also students don't understand the importance of their local identity, cultural, materials and techniques to use in design. As a result of the study, to develop the program major subjects where the students lack knowledge must be added. In each class, teachers have to teach in detail and add the theory little by little, also show variety of good samples and give them a lot of practices after the class. Moreover, rearrange the sequence of the major subjects to create a strong foundation of the precedents of design in the industrial design program and make students interested in history and culture.

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**Industrial Design** is the professional service of creating and developing concepts and specifications that optimize the function, value and appearance of products and systems for the mutual benefit of both user and manufacturer  
(The Industrial Designers Society of America, 2007)

The design process, at its best, integrates the aspirations of art, science, and culture.

— Jeff Smith

Nakhon Si Thammarat is one of 14 provinces in the southern of Thailand. The distance is around 850 kilometers from Bangkok, the capital city. Walailak University has started 20 years ago to serve education needs of upper part province of Southern region because of there was one other public university in the south region at that time and serve the lower part of the southern region. 2 years before 2007 there was feasibility study about the needs of industrial design why and how this program is important to people.

The studies are to define the general characteristics in social, economic, cultural and natural resources of the South in order to understand Market trends and the needs. People who live in the southern parts of Thailand are composed of Thai-Buddhist, Thai-Muslim and Thai-Chinese. Those multi nationalities create the mixing of social, cultural and life-styles which are unique and difference from other regions. For instance, Shadow Puppet Play, Feeding Red-whiskered Bulbu for Competition show life-styles of Thai- southern people how they gathering created social and cultural aspect. Products from the natural resources such as Yan Lipao, Sedge, and earthenware show craftsmanship and how people gathering from work created the cultural and economic aspect. Not only craft products from natural recourses but also other craft design such as Neilloware, pearl and else promote the economics of the south. Not only social and cultural aspects, but also the economic plant such as palm plantation grown for oil industry, coconut plantation grown for food industry or rubber wood plantation grown which produces both rubber for rubber industry and rubber wood which has to be cut after grown for 20 years and can be made for furniture and toy industry. Therefore, there are importance reasons of industrial design for social and economic development of the country and the south. Firstly, Industrial design helps adding economic value of local products by, design packaging and create identification of local products, adding new products to the Industry. People finally can have their own brands which create the new entrepreneur. Secondly, Industrial design helps Conserve and restore the southern culture including Lifestyle- mind, Intellectual and folk wisdom which added value by creating products of cultural heritage and traditional knowledge. Thirdly, Industrial design aware of resource utilization which added value by the manufacturing of products from raw material resource base of the South and for the production efficiency by reduce, reuse, recycle for sustainable production

After the feasibility and studies proof that the industrial program is important to help development of the south and it should be taught to young generation. The data which was collected from Thai commission on higher education show that there are only 6 Industrial

Design programs taught in Thailand on 2007. Therefore The first Industrial Design program in the south was started by The School of Architecture and Design, Walailak University in 2007 where would be the only one university to offer the educational chance in Industrial design in the southern of Thailand. Although in 2012, this year, there are more Industrial Design Program taught but Industrial Design program in Walailak University is still the only one in the south.

Industrial Design program taught in Thailand is different in terms of philosophy and curriculum which produce graduates with different properties. According to the feasibility and studies, course philosophy of Industrial Design program in Walailak Programs respond to the important needs which aims to create local industrial designers emphasizing on local identity, cultural, materials, techniques and so on in order to serve the needs of the southern businesses, to preserve and to promote local identity of southern through design. It combined the main ideas of Industrial design and the unique of the varieties of needs different from other universities. The curriculum was created the connection and continuity of knowledge all over the program which concentrate on produce graduates who have knowledge of design standards with special in not only in social economic and cultural characteristic of the south but also skill and knowledge in materials, techniques and production processes in the south. The programs would have divided into three professional areas responded according to those needs which are

- Wood and Rubber Product Design
- Packaging and Promotional Design
- Craft Product Design

Since Walailak University has three semesters learning system. Students who get into Industrial Design program would study 3 quarters each year for 4 years. Students would choose their professional areas in the third semester of the second year after pass the basic of industrial design knowledge such as basic design, materials and processes also manufacturing techniques. After 3 years of the program found that 80% of current student comes from the south and other from outside

The evaluation was taken after 3 years of the program in 2011 to determine the result of the curriculum in order to adjust the learning and studying method suitable to students throughout the 4 academic years. as Tyler identified in the forth question about objectives, experiences, organization and evaluation for basic curriculum development.

*“The process of evaluation is essentially the process of determining to what extent the educational objectives and actually being realized by the program of curriculum and instruction” (Tyler 1949, p105)*

The study was collected from current teachers, students of year 1, 2 and 3 and qualified people who have experience teaching in industrial design field using focus groups research method in order to gather information from student discussion in the curriculum and method

of teaching of the program including the problem of study as the aim of course philosophy. The questions for asking in student focus group are 7 aspects as following

- Industrial Design Curriculum aspect – there are more or less redundant in accordance with students and society needs.
- Learning and teaching aspect – lecture or theory, studio works and field works with a focus on self-help classes and critical thinking.
- Instructor aspect – be a good role model, Knowledge and experience in the subjects they teach, teaching method.
- The academic advisor aspect – helpful, kindness and generosity.
- Learning Resources aspect - teaching media, books, library, audio-visual and Studio.
- Technical skills and resources aspect – machinery, equipment and other tools for producing design prototype. (plastic, steel, wood, rubber, ceramic, cloth, etc.).
- Extracurricular activities aspect - such as study trips, activities and workshop for the course in accordance with professional development.

The problems identification after the interview of teachers and students of industrial design Student at Walailak university focus on local students in design skill, technical skill and southern knowledge can be defined that background and experience of student has effect to their studied. For example, students have little experience in design works and they don't know how to apply basic design knowledge to their design. That is because their background in design is not in the same standard as student from the city. Some students have rarely gone to another regions, rarely seen the design and there are few tutor art and design school for students to practice. Moreover students don't understand the importance of their local identity, cultural, materials and techniques to apply in design.

Students had comment in the focus group telling about the problem in many aspects. It can be summarized as below:

*“...since I've got to learn Technical drawing in the first quarter, I tend to forget what i have learned when I need to use that skill for Industrial Design I in the third quarter..”*

*“....there are too many computer design software.....2-3 programs in Computer design class, I can't possibly keep up with it...and I am not able to practice even one of them..”*

*“...I understand basic design when I study and I can create projects on industrial Design, but I don't know what is the connection between the two..”*

*“...I don't know what professional areas to choose since I don't know what they are about and if I have ability to do, there should be some class to review all the three..”*

Therefore to identify problems gotten from teachers and students interview can divide into 2 parts both sequences of the major subject and content of the major subject which still have the missing parts and some are not connected. As the result of evaluation, it is necessary to develop Industrial Design Program focusing on Local Students. Then, to develop of Industrial Design program can follow three guidelines provided by Tyler.

- “1. Continuity refers to the vertical reiteration of major curriculum elements*
- 2. Sequence emphasizes the importance of having each successive experience build upon the preceding one but to go more broadly and deeply into the matters involved*
- 3. Integration refers to the horizontal relationship of curriculum experiences.”*

*(Baker, 2003)*

Firstly, the sequences of the major subject has to be rearranged in order to get straight to the aim of program philosophy. Some major subjects have to be added and some subjects that are not connected have to be taken off. For instance, technical drawing subjects has to connect to the industrial design subjects in order to integrated both technique and design skill together. Secondly, the content of the major subjects involves in teaching method have to be adjusted to suit for students. For example, teacher has to show more design work sample, to give assignment and to let student practice and get to real experience. After the assignment, teachers need to follow up the result and let students repeat all process again. Finally this process can affect the student not only from perception but to cognition as Tyler's theory.

As Method of teaching and learning of Industrial Design in Walailak University focus on Active Learning Focus on PBL as Problem Base Learning and Project Base Learning, This can promote the teaching method as Integration of Tyler's. Student would learn the theory in technical and design skill from their classroom. Then apply all knowledge to the real project. Then student would understand how to use their craft design knowledge applying to lifestyle.

In summary, the beginning of Industrial design program under school of Architecture and design, Walailak University in 2007. there is the development of the program concentrate on continuity, sequence and integration in major subject to suit for local student and to create a strong foundation of the precedents of design in the industrial design program and make students interested in history and culture.. In the next step in the near future, there will be continue developing the program base on the past studies in order to make the program suit for local

*Design creates culture. Culture shapes values. Values determine the future.*

*— Robert L. Peters*

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*The Effect of Moral Behavior Development Using Project Approach on Dental Public Health Students in Sirindhorn College of Public Health, Yala, Thailand*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

The purposes of this research was to study the effect of moral behavior development using project approach on dental public health students in Sirindhorn College of Public Health, Yala. The samples were the first year dental public health students from Sirindhorn College of Public Health Yala in 2011 (N = 32). The research was divided into two phases; Phase 1: Providing moral education emphasizing on public consciousness, Phase 2: Using project approach on developing and implementing public consciousness project. The data collecting instrument were a questionnaire of the opinion on public consciousness development project and the test on public consciousness knowledge. Mean, standard deviation, percentage and content analysis were used as data analysis.

The research findings revealed that:

1. Samples were highly satisfied with this program as having the means score ranging from 3.94 – 4.63 ie: the means score of opinion on the activities could promote moral and ethical idea of the students were 4.63, the means score of opinion on the students were highly impressed in the public consciousness project activity were 4.6, the means score of opinion on the public consciousness project could create the moral and ethical awareness to the students were 4.53. And the most encouraged ethical behavior were unity, responsibility and sacrifice.

2. The public consciousness knowledge score were high as having the means score of 9.43 from the total score of 10 (S.D = 0.37).

Key word: moral development, dental public health students

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## 1. Introduction

Sirindhorn Colleges of Public Health are responsible for producing health care personnel to work in public health care service system such as public health officer, pharmacy technicians and dental public health officers. The dental public health officers work as part of a dental team in a variety of clinical and non-clinical setting. They provide preventive oral care and dental treatment to communities in rural and remote locations. They implement policy, as direct by Ministry of Public Health, to encourage community participation in aspect of oral health promotion, prevention and treatment process. The education of the dental public health officers is an intensive two year post-high school course which emphasizing on 1) Knowledge, skill and attitude of professional dental services 2) Self-discipline, responsibility to themselves and society, dedication to promote holistic dental health quality 3) Being role model in health 4) Morality, ethic, professional pride and public consciousness. (Praboromarajchanok Institute, 2007)

To accomplish that the development of moral behavior and professional ethics is a crucial subject for the dental public health students. This is a three credits subject emphasizing on fundamentals of moral and professional ethics, relationship between ethics and role of public health personnel, public health reasoning usage in problem solving and living, moral development for being role model in living and working. Kohlberg (1975) defined moral development as a process which is expected to change according to moral reasoning. According to Kohlberg (1984), each new cognitive structure transforms and displaces the structure that defines the previous stage, causing stages to develop in an invariant developmental manner.

Unfortunately the students often failed to take this subject seriously, dismissing them as oversimplifications, misrepresentations of real-life issues and character traits and boring. To avoid this problem, it should be noted that moral education involves more than knowledge and lessons in moral education should be personal and not academic. Teachers should not only concern themselves with what they teach but also with how they teach and interact with students, they should do this in a way that is meaningful and relevant to students. The teaching pedagogy is of prime importance. Research has shown that children learn best through meaningful activities. It has also shown that children's skills are much more likely to be mastered if they have the opportunity to apply them in meaningful activities (Katz & Chard, 1989) The same may be true of older students who can benefit from being actively engaged in meaningful activities. ( Jones, 1992; Rogers & Sluss, 1996; Vartuli & Fyfe, 1993 Jones, E.,1992) Projects are another way for students to experience how an inviting, dynamic environment can encourage learning. Projects are defined as "an in-depth study of a topic or theme" (Chard, 1998b) According to Katz and Chard (1989) projects can help children meet learning goals in the four major areas of knowledge, skills, dispositions, and feelings, Projects not only help children gain academic skills, social skills, and communication skills, they can help children form good self-concepts about themselves as successful learners. They can also help children gain positive dispositions toward learning. The main features of the project approach consisted of three distinct phases: phase 1- getting started; phase 2- gathering information about the chosen topic; and phase 3- concluding the project.

## 2. Research Objective

The purposes of this research was to study the effect of moral behavior development using project approach on dental public health students in Sirindhorn College of Public Health, Yala.

### **3. Methods**

#### **Participants .**

This study involved the participation of the first year dental public health students from Sirindhorn College of Public Health Yala in 2011 (N = 32).

#### **Procedures**

The study was conducted in two phases: the first was to provide moral education emphasizing on public consciousness in students , the second was using project approach on developing and implementing public consciousness project.

Phase I—Developing public consciousness : This phase involved providing moral education emphasizing on public consciousness to the students. This phase began with lecture on public consciousness, video-clip presentation of the interesting public consciouss projects, and class discussion on this topic. This phase took 3 hours.

Phase II—Using project approach on developing and implementing public consciousness project.: This phase involved the using project approach on developing and implementing public consciousness and assessing, which began with :

- 1.The participants were randomly divided into 4 groups. Each group consisted of 8 students and had their own advisor. All groups were instructed to do the projects which giving the benefit to the their college community. Each group had one teacher as an advisor.

- 2.Beginning the project: Each group had to share their past experience and opinion on what they think about their college as they studying and living in this college, discussed on what they interested in , what they wanted to do for the college and then coming to the agreement on the topic of the project. In this step the advisor had to make sure that every students share their own opinion based on their past experience.

- 3.Developing the project: After getting the project topic The students had to dig deep in the project. They had to set the objectives and goals of their project. And to achieve the objectives and goals they set, what activities should be done in sequences. Then they implemented the project according to what they planed.

- 4.Concluding the project: After implementing the projects the students had to make a project report and analyze what they learn and what they experience while implementing the project. Then each group had to give a presentation. This presentation gave students a chance to share what they had learned with the fellow students. Students took turns during the half-day-long presentation to answer questions and explain the process and what they learned from doing this project.

- 5.After the classroom presentation all students were given the questionnaires on their opinion of public consciousness development project and the test on their public conscioussness knowledge to complete.

### **4. Research instruments**

The data collecting instrument were a questionnaire of the opinion on public consciousness development project and the test on public consciousness knowledge. Mean, standard deviation, percentage and content analysis were used as data analysis.

The questionnaire was a 5-rating scale and divided into 3 sections including:

Section 1: Personal information

Section 2: Opinions regarding on public consciousness development project implementation

Section 3: Recommendation with open-ended questions

The rating scales were rated with the score as follow as:

- 1 = Strongly disagree  
2 = Disagree  
3 = Fairly agree  
4 = Agree  
5 = Strongly agree

The criteria was interpreted as follows:

- Mean between 1.00-1.50 = Strongly disagree  
1.51-2.50 = Disagree  
2.51-3.50 = Fairly agree  
3.51-4.50 = Agree  
4.51-5.00 = Strongly agree

The quality evaluation of opinions regarding on public consciousness development project implementation. Content validity was evaluated by the experts and IOC scores were then calculated as shown in table 1

**Table 1:** IOC scores of Opinions regarding on public consciousness development project implementation items.

item	Opinions regarding on public consciousness development project implementation	IOC
1	The public consciousness project implementation meet stated objective.	0.8
2	The public consciousness project implementation meet your expectation.	1
3	Sequence /content/ and the organized activities of the public consciousness project were appropriate.	0.6
4	Time frame of the public consciousness project was appropriate.	0.6
5	Selected places for the public consciousness projects were appropriate.	0.6
6	The students were impressed by the public consciousness project implementation.	0.8
7	The public consciousness project activities could promote moral and ethical idea of the participated students.	1
8	Willingness of teaching staff /advisor of the public consciousness project to provide you with support.	0.6
9	the public consciousness project could create the moral and ethical awareness to the students	1
10	The overall aspect of the public consciousness project was fulfilled completely.	0.6

## 5. Results

Phase I : All the first year dental public health students ( N=32) were attended in a three hours class of moral education emphasizing on public consciousness which began with lecture on public consciousness, video-clip presentation on the interesting public consciousness projects, and class discussion on this topic .

Phase II : 4 public consciousness projects were implemented by 4 groups of 32 participants aiming to give the benefit to the Sirindhorn college of Public Health Yala consisted of the project on improving landscape for motorcycle parking lanes, the big cleaning day project, the water pipes dredging project and the sport day for harmony project. The participants were satisfied with this program as having the means score ranging from 3.94 – 4.63 as shown in table2

**Table 2:** Opinions regarding on public consciousness development project implementation.

Item	Opinions regarding on public consciousness development project implementation	$\bar{X}$	S.D	Level
1	The public consciousness project implementation meet stated objective.	4.34	0.48	Agree
2	The public consciousness project implementation meet your expectation.	4.34	0.60	Agree
3	Sequence /content/ and the organized activities of the public consciousness project were appropriate.	4.13	0.55	Agree
4	Time frame of the public consciousness project was appropriate.	3.97	0.59	Agree
5	Selected places for the public consciousness projects were appropriate.	4.00	0.57	Agree
6	The students were impressed by the public consciousness project implementation.	4.63	0.61	Strongly agree
7	The public consciousness project activities could promote moral and ethical idea of the participated students.	4.63	0.49	Strongly agree
8	Willingness of teaching staff /advisor of the public consciousness project to provide you with support.	3.94	0.50	Agree
9	the public consciousness project could create the moral and ethical awareness to the students	4.53	0.51	Strongly agree
10	The overall aspect of the public consciousness project was fulfilled completely.	4.13	0.49	Agree

The participants agreed that this public consciousness project implementation meet stated objective ( means = 4.34, S.D. =0.48). The participants were agreed that this public consciousness project implementation meet their expectation ( means = 4.34, S.D. =0.60) and overall aspect of the public consciousness project was fulfilled completely ( means = 4.13, S.D. =0.49). The participants satisfied with sequence /content/ and the organized activities of the public consciousness project ( means = 4.13, S.D. =0.55). They satisfied with the time frame of this public consciousness project ( means = 3.97, S.D. =0.59).. They also agreed that the selected places for the public consciousness project were appropriate ( means = 4.00, S.D. =0.57) and . The participants were strongly agree that they were impressed by the public consciousness project implementation ( means = 4.63, S.D. =0.61) , the project activities could promote moral and ethical idea ( means = 4.63, S.D. =0.49) and the public consciousness project could create the moral and ethical awareness to the students ( means = 4.53, S.D. =0.51) . The participants were satisfied with the willingness of teaching staff /advisor of the public consciousness project to provide them with support ( means = 3.94, S.D. =0.50 And the most encouraged ethical behavior were unity, responsibility and sacrifice.The participants also mentioned that

Project on improving landscape for motorcycle parking lanes.

“ Working for this project I learned a lot about how to respect other person’s idea.”

“ I learned a lot about conflict management.”

“I learned that punctuality, responsibility, unity are crucial for accomplishment of any project or group work .”

The big cleaning day project

“ I learned how to work as a team.”

“ I learned how to respect other person’s idea.”

“ I was surprised that I am engaged in this project, and learned that we should give more respect to public properties and it is our duty to take good care of them if we want our next generations to get the use of them.”

The water pipes dredging project

“ I learned to managed any difficulties. And by learning that I also knew that life is tough, we can't give up easily, we have to be persistent not in an aggressive way but in a compassionate way.”

“ I learned that when we were discouraged by the hard work or any obstacles/difficulties , our group members gave support for each other, physically and mentally, to make the project successful.”

The sport day for harmony project

“I was surprised that I am willing/happy to scrfice my own time and energy for other people's pleasure , helping them release stress from school work.”

“ This project was a collaboration with our two years students and teachers. I love them all.”

The public consciousness knowledge Test score were high as having the means score of 9.43 from the total score of 10 (S.D = 0.37).

## **6. Discussion and conclusion**

The findings in this study revealed that the participants were highly agree that the public consciousness project activities could promote moral and ethical idea of the participated students (means = 4.63, S.D. = 0.49), they were highly impressed by the public consciousness project implementation (means = 4.63, S.D. = 0.61), they were highly agree that this project could create the moral and ethical awareness to the students (means = 4.53, S.D. = 0.51), the most encouraged ethical behavior were unity, responsibility and sacrifice. And the public consciousness knowledge score were high as having the means score of 9.43 from the total score of 10 (S.D = 0.37). This could showed that students participating in projects that are fulfilling and engaging realize for themselves the difference between taking part in meaningful project activities and merely sitting quietly through classes listening to a teacher. They experience the benefits of taking part in a project that results in new knowledge, not only for themselves but for sharing with others. Students participating in projects in their classrooms often have the possibility of making choices during those activities. According to Chard (1998a), “ One of the most powerful motivators for children in the classroom is choice. When children can make a choice from among a range of authentic alternatives and can choose when, for how long, where, and with whom to work, their motivation is likely to be greatly enhanced” (p.16). The same may be true for older students as well. Students may also gain a deeper appreciation for and understanding of the importance of this type of meaningful learning. They will have experienced firsthand a constructivist approach to learning (Bufkin & Bryde, 1996) where they can take ownership and responsibility in co-constructing their own learning with their peers and instructors. Using public consciousness development project as part of pedagogy in Development of Moral Behavior and Professional Ethics fulfilled the objectives of the Diploma of Public Health (dental public health) curriculum that dental public health students should have morality, ethic, professional pride and public consciousness .

## **7. Recommendations**

### **7.1 Research Utilization**

Sirindhorn Colleges of Public Health , should encourage the lecturer to use project approach as one of the main pedagogy especially in exact subject as Moral Behavior and Professional Ethics.

## 7.2 Further Research

Follow up study : in-service evaluation on the opinion of Sirindhorn College of Public Health Yala graduated dental public health officers' moral behavior .

## 8. Acknowledgement

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*The Integration of Knowledge, the Academic Service and the Dissemination of Local  
Art and Culture of the Technical Pharmacy Students, Sirindhorn  
College of Public Health, Yala, Thailand*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

The purpose of this research were 1) to integrate knowledge, academic service and disseminating art and culture and 2) to assess the satisfaction level of the dissemination art and culture. This research were divided into 2 parts. The first part was to develop knowledge about local art and culture for student. The second part was to dissemination of local art and culture to the participants in training course. This research tool was a questionnaire with 5 rating scales and open-ended questions. The statistics employed to analyze the data were percentage, standard deviation and content analysis

The research finding revealed that: 1) The subjects that student can use knowledge in the integration of academic service and dissemination art and culture were Systems Thinking Process Development, Personality Development and pharmacology. The art and culture that students bring to publish is Degehulu, wedding ceremony, Procedure to hadith and drug use in the month of Ramadan. 2) The opinion of student toward the students'ability to disseminate the art and culture were overall at a high level The suggestion from student were : the experts should be Invited to provide knowledge. The results of academic service were : the students gained experience in academic service and cherished their local culture. 3) The opinion of participants in training course toward the dissemination of art and culture were highly satisfied. The suggestion from participants were: the activities promoted and enhanced local art and culture and made them cherish the culture of Thailand.

*Key word: Integration of Knowledge, Technical Pharmacy Students*

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## 1. Introduction

Sirindhorn College of Public Health as a Community institution of higher education in addition to the commitment to the public health workforce. The College also has an important mission. Another aspect that needs to be done in conjunction with academic and administrative. Professional society. The preservation of arts and culture. The College recognizes the importance of the mission. For the culture. Studies aimed at creating awareness and awareness of the importance of arts and culture to students. Particular local culture. The local culture is a way of life in each community. This is the heritage of all people in the past and they are very proud to be jointly owned. Makes me jealous. The southern border of the province's unique culture is proud to honor the dignity of the common people in the area. Which is considered as a precious heritage that should be preserved and promoted. This is to allow students to cherish the love and preservation of arts and culture organization.

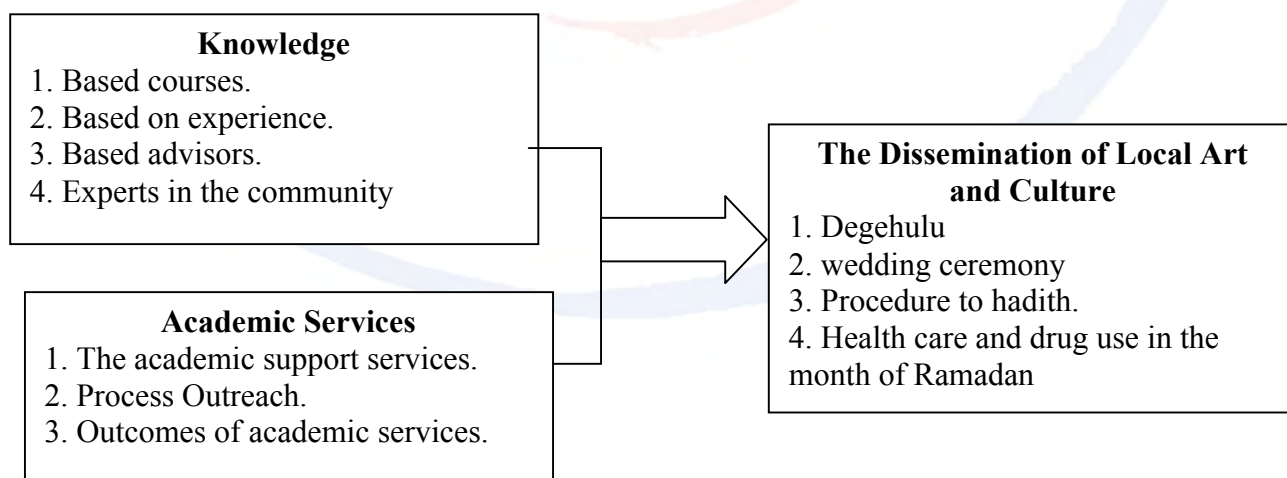
In this regard, in order to raise awareness of the value of arts and culture to the students. And the technical services provided accurate information about the local culture.

Local arts and culture as well as the good ones are. In order to maximize the quality of education in the academic component 5, 6 and preservation of arts and culture indicators 5.1.1 5.1.2 6.1.1 6.1 and feature integrated operations. Department of Pharmaceutical Technology course, Sirindhorn College of Public Health has established a Community Integrated Project linked to teaching and learning. Academic Services. With the preservation of the arts and culture. In conjunction with education research. The integration of academic knowledge with the local culture and the dissemination of technical pharmacy students. Sirindhorn College of Public Health, Yala

## 2. Research Objectives

- 2.1 To integrate knowledge, academic service and disseminating art and culture.
- 2.2 To assess the satisfaction level of the dissemination art and culture.

## 3. Research Conceptual Framework



**Figure 1:** Research Conceptual Framework

## **4. Research Methodology**

This study.Aimed at the integration of Knowledge, The Academic Service and The Dissemination of Local Art and Culture. which is divided into 2 parts. The first part was to develop knowledge about local art and culture for student. The second part was to dissemination of local art and culture to the participants in training course

### **4.1 Population and Sample:**

4.1.1. Teacher in Department of Pharmacy Technique curriculum of Sirindhorn Colleges of Public Health,Yala, Thailand

4.1.2. Technical Pharmacy Students of Sirindhorn Colleges of Public Health,Yala, Thailand

4.1.3. Professionals in the community

4.1.4 Participants in Pharmacy Technique officer training course

### **4.2 Research Instrument:**

4.2.1. Survey of student opinions about the integration of cognitive and academic services. And local arts and culture. Which the tool is used to query a closed end and open end is divided into six parts: 1) general information, 2) opinions on the knowledge of students in the arts culture, 3) comment on the academic services of students in 4) comments on events, arts culture, 5) the dissemination of art and culture, 6) feedback and comments.

4.2.2. Questionnaire of participants towards arts and culture of the students in training course that uses a closed and open end. As a scale (Rarting Scale) 5 levels divided into three parts: 1) general information, 2) and arts and culture activities, 3) findings and recommendations to the arts and culture activities.

### **4.3 Data collection:**

4.3.1. The first Questionnaires were distributed to the students after completion of the Pharmacy Technique officer training course 1 week, 3 days for a response, and recovery research.

4.3.2 The second Questionnaires were distributed to the participants in Pharmacy Technique officer training course after a national arts and culture activities for the students.

### **4.4 Data analysis:**

4.4.1 Quantitative data was analyzed and presented as percentage, mean and standard deviation

4.4.2 Qualitative data was analyzed by using content analysis

## **5. Results**

### **5.1 The opinion of students on the integration of knowledge. Outreach to the local culture and arts.**

1) The respondents were mostly female percentage 82.4 Age 20 years Percentage 82.30 experienced in the arts and culture Percent 70.60 Nature of arts and culture, most activities, the percentage of 47.06 is shown. Degehulu 70 percent of the distribution in the peronnances include.To promote the knowledge of wedding ceremony, 50 percent for the media to educate about the hadith percentage 60.00 and activities dissemination and preservation of arts and culture, the roots try Length Degehulu and way of life, man. Ko Yo equivalent is 33.33 percent.

2) Students use knowledge of students in the integration and Academic services and arts and culture is a student of one follows the course of the development process in a systematic way the number 11 as a percentage 64.70 Course Personality Developrnent 4 people think. 23.50 percent.

3) Undergraduate courses is that students have the knowledge integration and

management of academic culture and arts of the 7 subjects from the highest to the lowest in a Systems Thinking Process Development, Personality Development, Pharmacology, law and consumer protection, Live Society and Environment, Professional Behavioral Ethics Development and Pharmaceutical Development in Community Project respectively.

4) Needs of students learning more about the Academic service. Arts and culture courses in the Top 3 course is developed personality. The dress, demeanor and social pharmacology courses for 47.10 percent of the drug in the month of Ramadan. And traditions of other religions and 35.30 percent of the course development process in a Systems Thinking Process Development. Thinking about linking, and speaking skills, presentation and technical services of equal value is 23.50 percent.

5) Opinions on student knowledge of the local arts and culture. Course development process in a Systems Thinking Process Development. In problem solving and reasoning to solve problems. Can be used to perform the activity. Can be used practically in (7 person) should be invited to provide expert knowledge to students in arts and culture. For students to ask questions and learn more (3) the need for community participation in the arts, and more (1 person) would provide courses on preservation of art, culture depictions (.1 person) and audiovisual heritage and cultural exchange for students and another person (the first person).

6) A student is on academic services to students in training course average as a whole was 4.09 level with the comment to the areas. The service support academic equals 3.73 level process Outreach at 4.31 level, and the results of academic services at 4.41 level and provide feedback for the channel, and a variety of presentations, as Published in the period .conference (2 people) want to have time to exchange knowledge between patients and providers more

7) Students comment on events, arts culture of the whole is equal to 4.17 level, which classified the reviews on events, arts and culture on a Dege Hulu equal to 4.14 level wedding ceremony at 4.20 level the procedure hadith 4.02 level Health care and the use of drugs in the month of Ramadan is equivalent to 4.31 level

8) Impression of a crowd Studies published in the local culture, which is a Dege Hulu unity, patriotism, religion and the king only 76.50 percent.

9) Way to create public awareness to love and cherish in their own local Instilled in their young students learn. And learn about local culture. And 29.40 percent passed to the next generation and conservation as part of the local culture of the people have been known to 23.50 per cent.

10) Feedback and comments from students as to the event is continuing due to network between students and course (5 people) want the activities to disseminate local culture of the South in the student next version (3) Students will demonstrate the ability to recognize the importance of academic and arts and culture (3) the activity is appropriate (1)

## **5.2 Opinion of the training activities, arts and culture of the students in training course**

1) 77.10 percent of the participants were female, mean age 30.67 years, and 40.40 percent of residents in the south.

2) Average score, participants towards arts and culture at 4.14 level with the top 3 is to preserve heritage cultural averaging 4.28 Level colleges are responsible for the preservation of arts and culture, averaging 4.25 level and feel loved and cherished in the Thailand Cultural average 4.18.

3) Participants most impressive in the arts and culture that Dege Hulu, Wedding Ceremony and New guise of local people, respectively.

4) Culture that wants participants in the College published the next hop is alive shadow play. And sang the anazi's.

## **6. Conclusions and Discussions**

### **6.1 Students to integrate their knowledge. Outreach to the arts and culture.**

1) Integration of knowledge integration and academic services and distribution. Preservation of the cultural and subjects respectively. Development process in a systematic way. Personality Development Pharmacology law and consumer protection, public health, social life, and the environment. Ethical behavior, professional development, and program development in community pharmacy. The needs of students learning more about the Research and Preservation of Cultural dissemination in the Top 3 courses personality development course Caracas. Dress issue. Social orientation and 47.1 percent in pharmacology courses. The drug in the month of Ramadan and the traditions of other religions, and 35.3 percent of the course development process in a systematic way Linking and Thinking Skills. Academic offerings and services. Is equal to 23.5 percent of the student body of knowledge on the distribution of local culture. Mean of 3.55 on average in the high level of experience as a supervisor at the 2.78 level and 3.98 level professionals in the community

#### **Suggestion**

- Course development is a systematic process for problem solving and reasoning problem solving can be used to perform the activity. Can be very True (7).
- Should invite experts to disseminate cultural knowledge students ask questions and learn more (3).
- To provide the community with arts, culture and more (1).
- How to choose a course on cultural preservation intervention (1).
- The traditions and cultural exchange trips for students and others (1).

#### **6.1.2 Academic Services**

Comment on Research of Students in the training course the average was 4.09 with a separate comment to areas of service support. Academic level equal to 3.73 and 4.31 at the academic level and the results of academic services at 4.41 high level.

#### **6.1.3 The distribution of Local culture in the southern**

Opinions on local cultural events art publishing under. The overall mean was 4.17 with a separate opinion as to the arts and culture are the DegeHulu were 4.14 level over. Wedding ceremony at 4.20 level The procedure to hadith were 4.02 and health care and Drugs use in the month of Ramadan is equivalent to 4.31 level.

Students in the arts and culture of the Degehulu represents unity, patriotism, religion, and the king and was 76.5 percent over wedding ceremony. Simply Because it is close to the 52.9 percent social problems.

How to create public awareness to love and cherish their own local culture is instilled in their young students. Study and learn the local culture. And 29.4 percent passed to the next generation and conservation as part of the local culture of the people that have been 23.5 percent.

### **6.2 Opinions of the participants to the activities of students in training course**

Average score, participants towards arts and culture at 4.14 level with the top 3 is to preserve cultural mean 4.28 level colleges are responsible for the preservation of arts and culture at 4.25 level and feel loved and cherished in the arts and culture of Thailand is the most impressive 04.18 in the DegeHulu Wedding ceremony and New guise of three Muslim southern most provinces Needs of participants. In the arts and culture of the college in the future, including the Manora. Shadow Play. And other cultures. the dominated by the South.

## Discussion

That students need more instruction on the academic and public service. Preservation of Art and Culture in the Global Top 3 course is to develop the personality of dress and social orientation. May be caused by various things. To be published.

Expresses the beauty of the culture of art. And experiences of college students found that although students have some but mostly it is about public relations, media preparation and knowledge. Access to and preservation of cultural dissemination. Has published a number of resources for less. The lack of self confidence. Therefore, to promote the development and learning of students. Who are knowledgeable, experienced and confident. In the dressing. Orientation and social life. It is the student's needs first for Pharmacology course. Ttre drug in the month of Ramadan and other religious traditions. Topics maybe 1 due to the drug in the month of Ramadan. Students that are only locally under the body of knowledge and beliefs need to be teaching the website is accurate as of the individual, the public peace, and at the same time. have a better understanding of other religious traditions for course development process in a systematic way to think about the link.

Students will see how important it is for students to have a comprehensive plan implementation issues. It is not ,iilcavv.pltk academic integration. On the daily life. For speaking skills. Academic offerings and services. Students may be due to lack of experience and opportunities in the various Therefore, all courses should be organized to develop teaching skills. Be presented to students. And students see the importance of a solution to the problem of course is the development process in a systematic way. May be due to the activities of students in the process requires systems thinking. Must have a clear plan. As a national project, so some things may have happened, so the issues by reasoning. And how to find appropriate solutions to the various activities. Achieve the objectives set. It is important to be very true. For most students the impression of the local cultural arts of the show DegeHulu. The student may not be present at the Advisory Committee has considered the silicate knowledge on Hulu. After the students have to deal with the issue on their own. Are guided by a faculty advisor. The rub is that the knowledge of experienced professionals dedicated to arts and culture to students in DegeHulu display correctly. And a favorite of the audience.

## 7. Recommendations

7.1. An integrated body of knowledge. Outreach and dissemination of art and culture activities should include. The student continuously. This willenable students to use the process in a systematic way which is beneficial to the student and society.

7.2. Should the results of the integration of knowledge. And academic services: Arts and culture in the development of this curriculum in the subjects concerned. To develop the potential of students.

7.3. Should have studied the integration of knowledge. Outreach to the arts and culture.

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The logo for the International Association of Business and Finance (iafor) is centered on the page. It features the word "iafor" in a light blue, lowercase, serif font. The text is enclosed within a circular frame composed of two concentric, hand-drawn style arcs. The outer arc is a light orange color, and the inner arc is a light blue color, matching the text. The overall design is minimalist and professional.

*“Knowledge Diffusion”: Developing Appropriate Approaches to Knowledge Transfer  
in Thai Rural Communities: A Case Study by King Mongkut’s  
University of Technology Thonburi (KMUTT)*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

KMUTT is involved in many rural community development projects in Thailand. The purpose of these is to convey knowledge directly to local communities through short events such as workshops, conferences and projects. However, research suggests that only little of this overall knowledge has been adopted effectively. We hypothesize that this is due to differences in lifestyle, expectations and motivation between urban researchers and rural communities. Therefore, this study aims to determine an approach to knowledge transfer that is appropriate for rural communities. The study is based on participation observation of a particular community project. In this, a series of short events grounded in local lifestyles was created as a research tool. In these, researchers adopted the position of role-models working to diffuse knowledge rather than directly influence local community life. Using this approach, the reaction and feedback from rural people about knowledge accessibility seems much improved. The result suggested that an appropriate approach to rural knowledge transfer should emphasize local “lifestyles” and researchers adopt a role model based on the diffusion of knowledge rather than direct influence. In this way, people in rural communities might be given the opportunity to sub-consciously adopt knowledge diffuse this effectively for use in rural community development.

Keywords: Community Development, Knowledge Diffusion, Urban Researcher, Rural Community

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## **Introduction**

King Mongkut's University of Technology Thonburi (KMUTT) is located in Bangkok, Thailand. KMUTT is involved in many rural community development projects in Thailand. The purpose of these is to convey knowledge directly to local communities. Researchers work as facilitator to find appropriate technologies to mainly increase agriculture productivity and also pull experts to help on social problems, such as drug abuse. KMUTT also indoctrinates the knowledge and mechanism of building co-operation of local organizations. It is coherent with the success factors of community development project mentioned by Akin (2009). Nongluck (2012) presented that the social worker should work as enabler in the community by stimulating via creating activities to pull co-operation from the community for basically maintaining security, development, and relationship between each organization in the community.

## **Problem Statement**

According to different contexts of urban and rural community, urban researcher and rural people lifestyles are different as well. Rural community is traditionally, patron-client system, where people focus on relative system and land ownership. It relates to an expressive friendship (Wolf, 1887, cited in Akin, 2009) formed between the persons or groups who have same form, characteristic, or attitude. It is totally different from the urban lifestyle which related to economics system and instrumental friendship that focusing on personal benefit (Akin, 2009).

The problem is, nowadays, many urban researchers still have stereotype of people in rural communities as uneducated, and credulous (Pracha, 2011). It is why many urban researchers use an "influence" approach for knowledge transfer projects. Influence is same as an approach that urban people in Thailand are influenced by western. In this case, it seems that urban researchers set themselves into the middle of western and rural people. They are influenced by western and, at the same time, they also influence rural communities. However, focusing on knowledge transfer approach which is naturally happened in rural community, it is diffusion approach instead of influence approach. Knowledge is normally diffused from one to one or one to group via the lifestyle activities.

During the study of Community Life Museum development at Nagnoy and Poneplaloh community, Sakolnakorn province, north-east of Thailand, where KMUTT has involved in

community development for more than ten years, it was found that only little of this overall knowledge has been adopted effectively. The hypothesis is due to changes and differences in lifestyle, expectations and motivation between urban researchers (KMUTT) and rural community (Nagnoy and Poneplaloh). Therefore, this study aims to determine an approach to knowledge transfer that is appropriate for rural communities.

## Methodology

The study is based on participation observation during one community development project. In this, paralleling with data collection of this project, a series of short events grounded in local lifestyles was created as a research tools. However, in traditional Thai culture, rural people pay much respect to urban researcher which showed the role of urban researchers, is always considered by rural people as an influencer. The study suggested that, as children in the rural community are considered as a non-leader in the rural community point of view. In this study, researchers trained a group of children to adopt the position of role-models working to diffuse knowledge rather than directly influence local community life.

The series of activity in religious ceremony preparation is considered as a local lifestyle activity. In the activity, new knowledge for solving problems, which were happened in religious ceremony preparation activities, was directly transferred to children by researchers. Urban researchers played as facilitators to ground the particular lifestyle activities encouraging children to diffuse knowledge to people in the community.

□

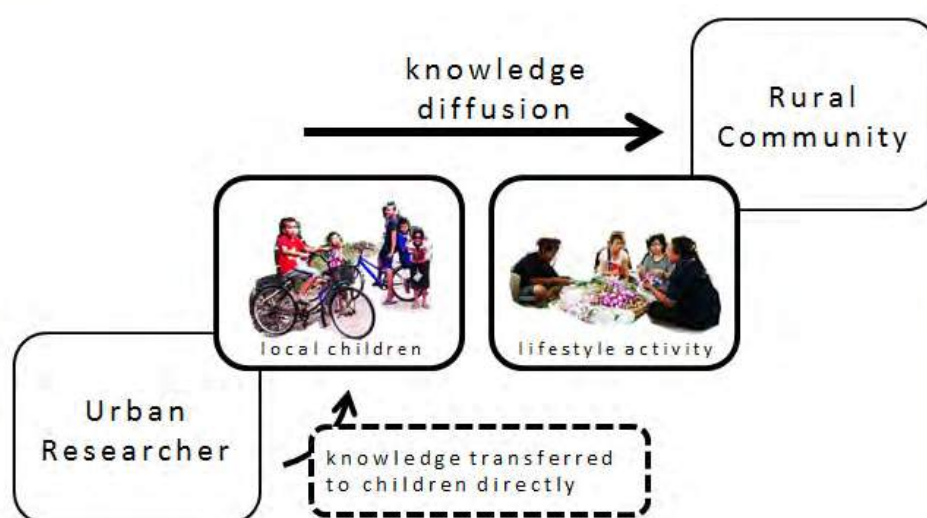


Figure 1: The conceptual framework at field work

## Result

From the observation, adults normally give children assignments. In this case, assignments are considered to be as immediate needs of social. However, when the children finished the assignments completely by using the computer (Represented as new knowledge), they did not accept children's competence immediately. Until a certain number of successes, they basically tried on computer (New solution and knowledge) by themselves. The observation showed that, in case they cannot use computer, the requests were sent to children indirectly. In this kind of situation, the knowledge was diffused from children, who are smaller, in term of social status, to adult sub-consciously.

After observation interview, the result showed that people did not note on helps from children. They think that children, as a new generation, must have this kind of knowledge (Computer). They also thought that if children can do it, they can do it too. Comparing to the previous situation, with the same content (Computer training), they denied training and knowledge provided from the social workers. The reasons, in that time, are such as "It is not necessary for my life" and "You can do it because you are from urban, I cannot do as you". So using diffusion approach, the reaction and feedback from rural people about knowledge accessibility seems much improved.

## Discussion

In 2009, Akin presented the story from his experience in one community: *When the rich person in community was interviewed by urban reporter, he told that "I am rich because I have been working very hard". On the other hand, when he was asked from the people in the same community, his answer is "I am rich because of the power from super natural"*. The case study showed that people in the rural community customize the contents following the characteristics and expectations of the interlocutors. This story explains why urban researchers think that people in the community can adopt the knowledge they provide.

It is same as the observation in field work. At the community meeting, the official village leaders and government officers always explain government policy to the community's members (rural people) by influence approach. It is the same approach that they were influenced by urban center. In this case, leaders and officers set themselves at the middle between urban center, who influence them, and community's members, whom they are

influencing. Community's members might act as Akin's story mentioned above. To maintain relationship and benefits, members might customize an answer to show their intention and understanding to outside.

Influence approach is mostly used for driving urban society to be "beyond their lifestyle". In the urban society, the relationship of members is depended on the purposes. Therefore "role-model" in the urban society represents as presenter influencing society members to be like him/her. By this approach, it seems that "beyond lifestyle" is presented by focusing on "semiology of culture". Instead of focusing on function, influencing of role-model tries to present the concept of social and culture value of objects or activities (Wanpimon, 2001). Tonnies (1887, cited in Akin, 2009) hypothesized the community movement direction. The traditional community which is formed naturally by the relative system is possible to be replaced by society, which is rationally depended on purposes. Akin (2009) presented that, in fact, a group of people in the real situation are between traditional community and modern society. It is depended on the level of *Gemeinschaft* and *Gesellschaft* in each group.

According to literatures, it can be compared to the present situation in Thailand. At rural communities, numbers of organization focusing on purposes such as, learning centers, small and micro community enterprises, one tumbon one product (OTOP), or even factories, are increasing significantly because of development policies of government. These kinds of organization are systematically set by the government (urban people). It normally works efficiently at the beginning because communities are forced by government. However, many organizations, in the rural communities, are not working as they should and knowledge is not adopted effectively at the communities as well. Communities might be influenced to accept things and their social values of them at the beginning, but they also can rationally cut unnecessary things which are not matched to their lifestyle. It is coherent with the suggestion from Weber (Cited in Akin 2009). He mentioned that in the history, the proportion of rational action, compared to non-rational action, of human has kept increasing significant. At the present, this change is not depended on agrarian transformation as in the past but it might be rural restructuring. The lifestyle of rural community has been changed especially, consumption. They do not consume just only food but also others such as satisfaction, meaning, knowledge, and ideology (Anan, 2009).

Nongluck (2012) suggested that social worker must understand the lifestyle of community members including culture and tradition. Carl Roger (cited in Nongluck, 2012) mentioned

that one of characteristics that everyone has is lifestyle, the combination of value, attitude, habit, and also the mechanic which is used to resist their worries. In the context of Thailand, at B.A.D. Award 1995, Panu (cited in Pracha, 2010) presented that the gap between urban and rural lifestyle was increased. However, lifestyle is not limited as visual. It should be included as feelings, or situations which can be understood and involved by only people who own that lifestyle.

Focusing on context of knowledge transfer in Thai rural communities today, the result suggested that an appropriate approach to rural knowledge transfer should more emphasize local “lifestyles” and researchers adopt a role model based on the diffusion of knowledge rather than direct influence.

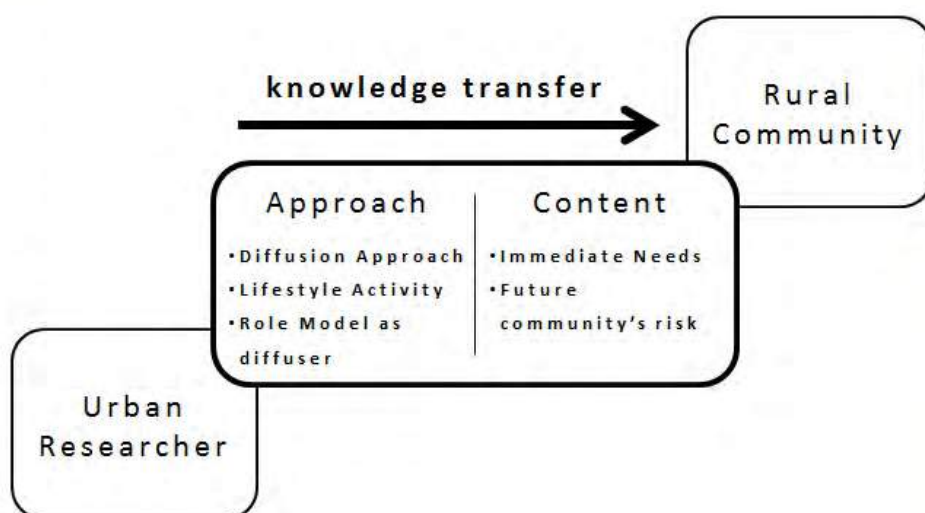


Figure 2: The conceptual of appropriate approach of knowledge transfer

In case of researchers are much respected from the communities' members, a role model based on the diffusion approach might be needed. In this way, people in rural communities might be given the opportunity to sub-consciously adopt knowledge diffuse this effectively for use in rural community development.

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*Effectiveness of Criteria for Pair Combination and Obstructive Factors of Pair Work in  
Computer Literacy Education*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

Since 2008, we have introduced a pair approach in the university's computer literacy education with the aim of establishing the pair work, which is effective in addressing computer literacy gap. The previous report focused on the pair learning effect from the amount of utterances, and it revealed that paired cooperative problem solving improved the overall task achievement level and suggested that mixed-gender pairs with similar academic ability were highly effective as the combination of criteria.

To affirm the suggested combination of criteria and to find the obstructive factors of pair work, this study shows the result of pairs in the problem-solving class conducted in a computer literacy program in two private universities in Japan, in 2011. A total of six classes and approximately 280 students were examined to see the effectiveness of the criteria for pair combination by comparing the experimental group (the criteria combination pair) with the control group (the random combination pair). The task achievement and the amount of utterances of the experimental group were overall higher than those of the control group. From the survey, it was observed that the criteria for pair combination were effective.

Conversely, high basic academic ability and male pairing were the factors that highly affected the negative effect of pair work.

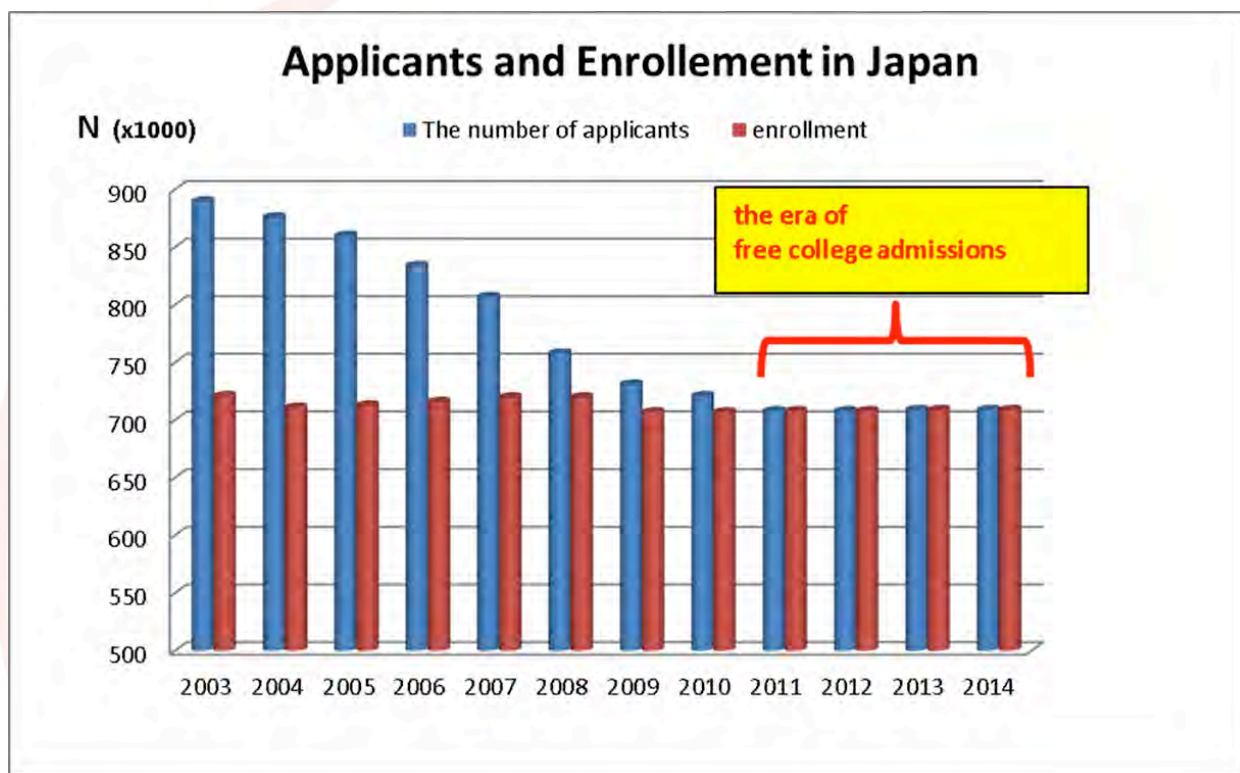
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## 1. Introduction

With As a movement in the educational field, there is a need to improve skills necessary for the 21st century, such as the ability to learn independently, problem solving skills, and communication (Iiyoshi, 2009). Higher education now emphasizes the importance of communication and cooperation skills, advocating a shift toward participatory approaches to instruction and, in many cases, practical studies to support these shifts. The cooperative learning approach, such as pair learning, particularly stimulates a desire for learning and is reported to correlate with improvements in communication and cognitive abilities, intrinsic motivation, and



**Fig.1 The era of free college admissions in Japan** ( after MEXT report ,2006 )

autonomy. However, newly enrolled university students show a growing computer literacy gap because of the rapidly changing environment in information technology and the great disparity between university computer literacy education and high school courses. Further, as the era of free college admissions will be arriving in Japan (Fig. 1), students have a weaker sense of purpose and less motivation to do coursework, thereby making traditional teaching approaches ineffective.

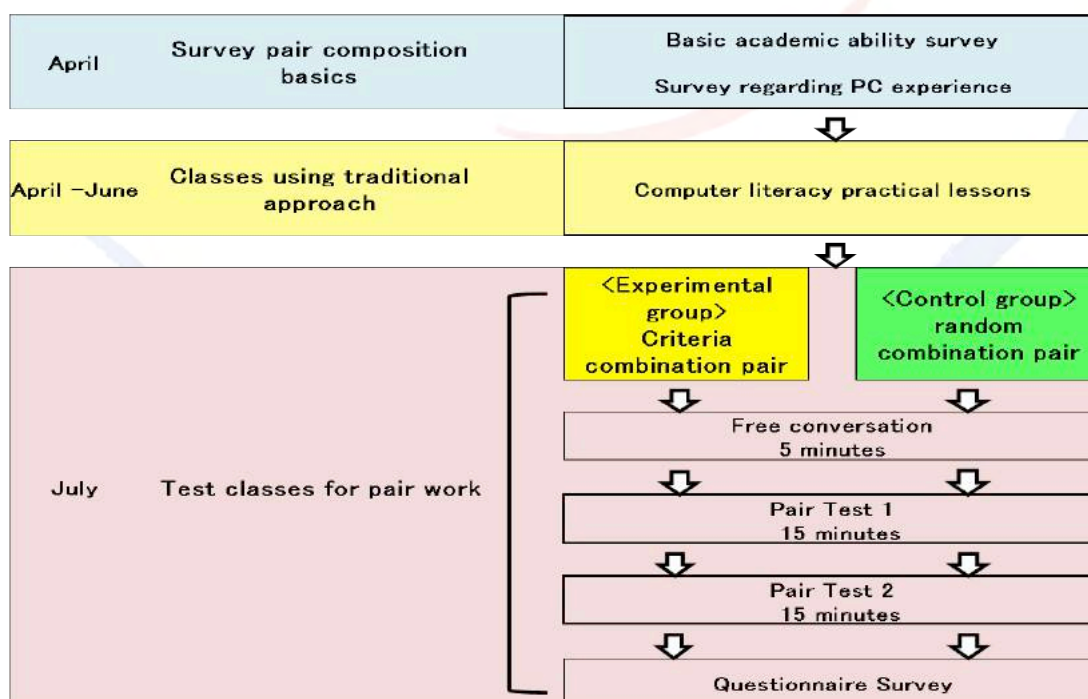
Given this educational context, we have made attempts to introduce pair work into university computer literacy education since 2008, conducting research to develop a pair approach adaptable to the expanding literacy gap. The reason for the particular focus on pair learning within group learning approaches is focused for the following reasons: 1) it is easy to build relationships with the first person to encounter; 2) it is less likely that the leader does all the work, a common problem with group approaches; 3) it is less likely that

participation varies between individuals; 4) it promotes active participation that develops one-on-one learning; 5) larger groups exhibit more complex groupings; and 6) pairs are generally more flexible because they are the smallest unit for a group learning approach.

Our previous study (Oya & Uchida, 2011) focuses on the communication process during pair work, analyzing the effects of the number of utterances, and the character count of the utterance. Although the results of that study demonstrated that pair learning approach is an effective solution to information processing problems, their effects were low or null, depending on the number and pattern of utterances, the percentage of correct responses, and time constraints. The present study validates methods that use pair combination indicators as a solution to address these issues. This study's results consider the relationship between the number of utterances and the learner's specific traits as moderated by the pair effect.

## 2. Method

The subjects of this study were enrolled in a computer literacy program in 3 departments of 2 private universities in Aichi Prefecture. A total of 7 classes and about 280 students participated in 2011. In April, students were surveyed on pair combination criteria, namely basic academic ability and PC experiences (Fig. 2). The basic academic ability survey consisted of 20 math and kanji (Japanese character) problems. The survey on computer experience before university had 20 multiple-choice questions about the Internet, software, and computer usage inside and outside the high school. The survey time lasted 5 minutes and



**Fig.2** Flow chart of the research process

surveys were collected individually for each participant. After 8–10 practical computer literacy classes, students were tested (Test 1 and Test 2) in pairs for 15 minutes (22 questions) based on word-processing proficiency such as, “please use ‘30’ characters and ‘35’ lines on one page,” and “please center align page numbers in the footer.” Before the pair test, students were given five minutes for free conversation to develop smooth communication for each pair’s first encounter. Thirty five minutes of conversation was recorded from the time free conversation began to the end of the pair test.

Pairs remained unchanged for both Tests 1 and 2. Therefore research, so far, has identified several obstructive factors to the pair learning effect: lack of communication between pair members, tendency toward lengthy conversations, and time constraints. The teacher warned the students about these obstructions before beginning the test and five minutes before its end. Immediately after the test, students responded to a five-minute survey about the pair test.

To evaluate the validity of the two indicators for pair combination, basic academic ability gap and gender, as identified in our previous study, the class was arbitrarily divided by each university class unit. The experimental group pairs were assigned according to matching characteristics based on the above indicators, the rest were randomly assigned to the control group.

To make pairs in the experimental group, we sorted the student in order to basic academic ability score at first (Fig.3). After that we combined pairs from top in order. At that time, if this happens the same sex, we tried to change the combination to make a mixed gender pair of as many as possible. Then the experimental group consisted of opposite genders having a minor gap in basic academic ability.



Fig.3 Method of combination for the experimental group

### 3. Results of the Analysis

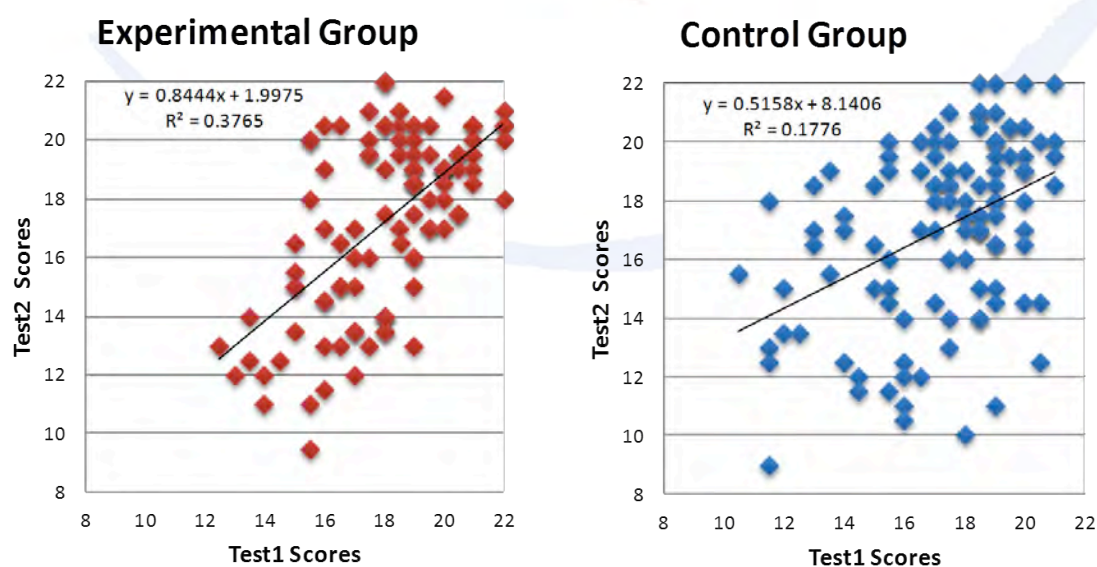
#### 1) Indicators for Pairs and the Pair Learning Effect

The analysis considers whether there was a divergence in pair test scores and the number of utterances between the experimental group, where pair combinations had been assigned with matching indicators, and the randomly assigned control group. Results reveal that the experimental group's average scores were higher than those of the control group by 0.79 for Test 1 and 0.30 for Test 2 (Table 1). Test 1 showed a significant difference between average scores with  $p = .01$ , but Test 2's result was not significant. The range of test scores between Tests 1 and 2 (Test 2 Score – Test 1 Score) differed significantly with  $p = .05$ .

**Table 1** Score and amount of utterances in each group

		Experimental Group			Control Group			$\rho$
		<i>ne</i>	<i>me</i>	<i>s.de</i>	<i>nc</i>	<i>mc</i>	<i>s.d.c</i>	
Test score	Test1	104	18.02	2.20	110	17.24	2.49	0.008 **
	Test2	109	17.22	3.08	116	16.92	3.03	0.233
Amout of Conversational Utterance	Test1	96	157.6	30.19	100	136.8	44.19	0.028 *
	Test2	96	126.0	32.00	102	121.2	43.78	0.266

Examining the score distribution of each pair for Tests 1 and 2, although there was a positive correlation between both tests' scores, overall, there was some variation in the experimental group, and a higher percentage of control group pairs had higher scores in Test 2 (Fig.4). The number of utterances was higher



**Fig.4** Distribution of scores in each group

for the experimental group in both tests, particularly for Test 1, with a significant difference of 5%, a similar outcome to that of the scores. The number of utterances' range (the number of Test 2 utterances – the number of Test 1 utterances) had similarities with the range of test scores; the experimental group made fewer utterances in Test 2. Further, two pairs in the control group failed to establish communication, whereas all experimental group pairs established communication. A significant difference of 1% was observed in six out of 11 questions between the experimental and control groups in the post-test questionnaire survey results. The question, “do you think the pair learning approach is good?” had the largest difference. The experimental group's significantly higher positive response suggests that the indicators for pair combinations were effective. For questions like “did you consult your partner?” “Were you able to interact with your partner on the pair test?” “Did you find consulting with your partner helpful?” and other questions relating to the exchange between partners, the experimental group responded with higher ratings (Table 2). This outcome is consistent with the experimental group's scores and number of utterances being higher than those of the control group. However, given that the survey did not show a significant difference in the number of utterances, nor did it in Test 2 scores, results suggest that the experimental group evaluated pair work as effective.

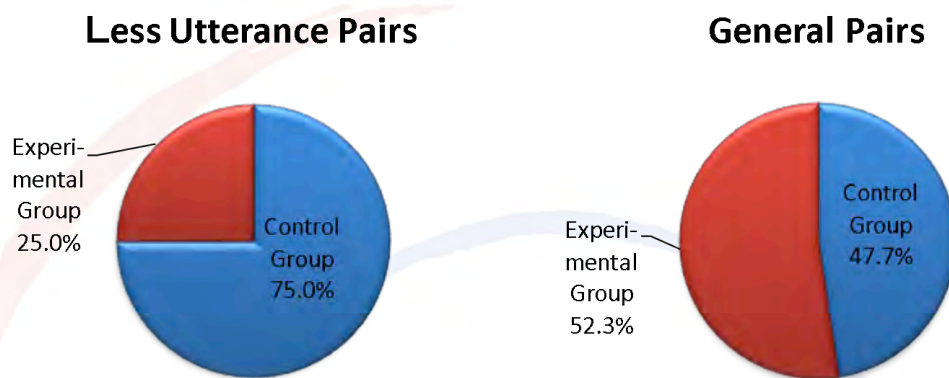
**Table 2 Results of questionnaire in each group**

	Experimental Group			Control Group			$\rho$
	<i>ne</i>	<i>me</i>	<i>s.de</i>	<i>nc</i>	<i>mc</i>	<i>s.d.c</i>	
Do you think the pair learning approach is good?	110	2.88	0.32	115	2.63	0.57	0.000 **
Did you consult your partner?	110	2.82	0.41	115	2.52	0.74	0.000 **
Were you able to interact with your partner on the pair test?	110	2.72	0.51	115	2.49	0.63	0.001 **

## 2) Relationship between pair learning effects and the number of utterances

As So far, research has demonstrated a correlation between the number of utterances and the pair learning effect. It has also shown that a decrease in the number of utterances has a significant impact on the pair learning effect. This study specifically targeted pairs with a low number of utterances in the pair learning approach. Specifically, analysis examined the relationship between each factor. Group L contained 12 pairs

with fewer than 100 utterances, considered to be low; Group G contained the remaining pairs with over 100 utterances. Group L composed of 75% of the control group and 25% of the experimental group (Fig.5), suggesting that the indicators for pair combination proposed by this study are effective in encouraging communication between pairs. Group L contained more male pairs, supporting the findings in previous studies that males converse less than females.



**Fig.5 Proportion of each group in less utterance pairs**

There was no significant difference between the groups' basic academic ability gap or PC experience before they joined the university; however, Group L exhibited a significantly higher basic academic ability (Table 3). This may reflect a learning attitude that is characteristic of students with a high basic academic ability, who attempt to solve problems independently. There was no significant difference in the test scores. However, Group L had marginally higher values for Test 2. This result is attributed to Test 2's greater difficulty level, wherein, Group L pairs having had to sacrifice conversation time to ensure having sufficient time to answer the questions. The survey results revealed a significant difference for seven questions for Group G. The amount of consultation scored the highest t value, presumably because the students in Group L realized that there was little communication between pairs. Moreover, a significant difference was recorded for factors like the effectiveness of pair interaction and the topics consulted, which clearly showed that they felt that the pairs were ineffective.

**Table 3 The values of pair combination criteria in less utterance pairs**

	Less)U tterance)P a irs			G enera lP a irs			p
	n	m	s.d	ng	mg	s.d.g	
<b>Basic Academic Ability</b>	23	<b>12.28</b>	2.92	171	<b>10.49</b>	3.35	0.008 **
<b>PC Experience</b>	22	<b>11.77</b>	4.34	168	<b>12.14</b>	4.24	0.351
<b>Basic Academic Ability gap</b>	24	<b>2.81</b>	1.24	170	<b>2.54</b>	2.55	0.303

#### 4. Conclusion

The Students were divided into two groups, a experimental group where pairs were assigned with matching indicators and a control group where pairs were assigned randomly. They were then given a pair test for computer processing in an experimental class setting. Analysis of the comparison of both groups' tests and surveys, particularly focusing on pairs with fewer utterances, yielded the following results:

- 1) The experimental group had higher test scores than the control group and a greater number of utterances, which suggests that the indicators for pair combination proposed in this study are generally effective;
- 2) When the results of the control and experimental group surveys were compared, the experimental group's responses were higher to the questions about preference for the pair approach, partner interaction, amount of consulting, and topics consulted, confirming the pair work effect based on the pair combination indicators;
- 3) In Group L, which had fewer utterances, 75% of mostly male members came from the control group. Furthermore, although Group L was not characterized as having computer experience before university level education, their basic academic ability was significantly higher; and
- 4) When comparing the survey results of Group L and Group G, for 7 out of 11 questions, Group L responded with significantly lower values than Group G, suggesting that Group L did not actively participate in pair work.
- 5) These results suggest that high academic ability and male pairing were the factors that highly affected the negative effect of pair work.

Further investigation will be conducted on the characteristics of pairs with fewer utterances and the utterances' content. Actionable items must be identified to improve the overall pair effect in education.

#### Supplementary Notes

This study received financial support from 2008 to 2011 scientific research grants and a Grant-in-Aid© for Scientific Research (Issue Number: 20500816).

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*Realisation of Changing Perceptual Qualities in Sculpture Produced Through Digital Processes*

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Official Conference Proceedings 2012

Abstracts

Digital technology has provided a very different outlook to sculpture, especially to those who are engaged in creation through technological processes as it offers and develops new possibilities for conception and experience of art. The role of the artist is to create a condition which leads to specific forms of expression and reception. The expressive quality of this condition is conveyed through the actualisation of the sculpture and the receptive quality through the analysis of perception of artwork by receivers. This methodology then outlines the conceptual and technological approach to trace the changing visual perception, cognition and evaluation in the process of shaping three dimensional forms.

Digital sculpture is categorised in three divisions: works that have been created and manipulated digitally and then produced in traditional manual process; works created without the use of digital technology and then produced through digital process and works created and processed through technology. Redefining contemporary sculpture has become necessary and it can only be done through an understanding of perception as a mode of enquiry in relation to aesthetics of presentation and judgmental discourse of the constitution of a sculpture- actual and virtual. This research reviews the basic elements of sculptures ascertaining what is seen and how it is seen and to expose the shifting patterns of visual understanding in digital technology. The research outcome thus presents the potential to integrate seeing with critical awareness from analysis of perception affected by cognition.

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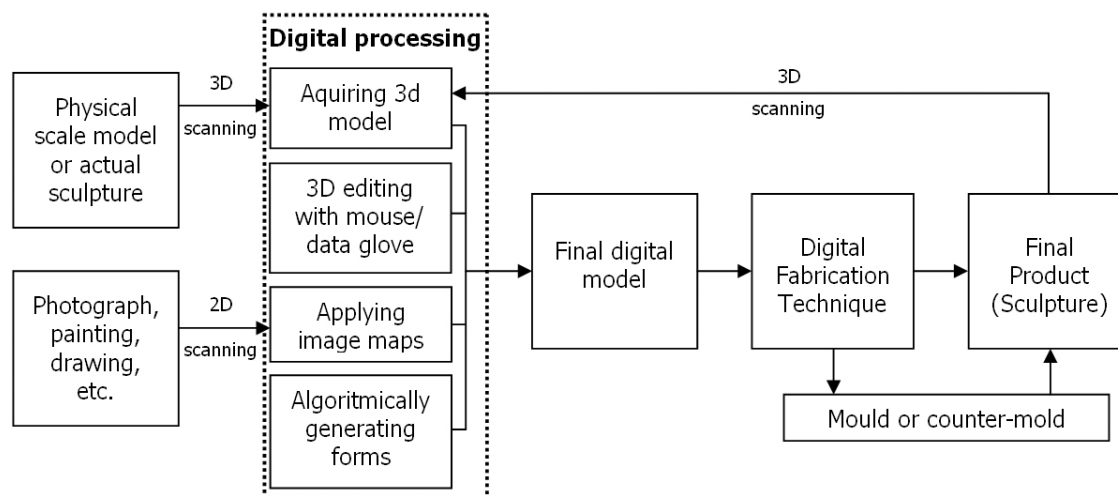
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## 1. INTRODUCTION

Since 1990, the range of creative works and artistic practices using digital technology gives us an insight into how technology has provided artists, designers, engineers, architects and craftspeople the tools to manoeuvre and new expressions to reveal (Callicott, 2001). Terms which have been used over the years for digital processes, specially associated with creative purposes both in Art and Design discipline, are Computer Art, Virtual Art, Computer Graphics, Multimedia Art, New Media Art, etc. and they all come under the umbrella of Digital Art. To determine the date (or even year) of birth of an art form or artistic technique is always problematic, if not a futile endeavour, but it might be safe to say that the 1990s are the decade when Digital or Virtual Sculpture officially began to exist- even if it had its roots in earlier experiments (Paul, 2000).

The term Digital or Virtual Sculpture has been broadly used for a variety of different forms and activities immersed in digital world (Ganis, 2005). The making of Digital sculpture is both a technological and a conceptual phenomenon. Technically, digital sculpture is a computer-generated process that either involves 3d modelling software to create forms or initiates from the digital inputting of real forms through scanning technologies, which are then manipulated using particular software, and ultimately produced through a computerised digital printing process. Simultaneously, at a conceptual level, digital sculpture originating from digital art, echoes elements from the art movements of Dada, Fluxus, Surrealism and Abstraction.

Gabriela Celani analyzed four points of view of using digital processing to produce artwork be it an architectural model or an artifact in a museum (Celani, 2008). In her diagram (Figure 1), she emphasized on the digital generation of form, which can combine digitization of physical objects, computational synthesis, digital manipulation and the combination of the above, covering all possible digital processing. On the other hand, it has in some way led to further investigation of presenting such digital artworks in public spaces.



**Figure 1: A diagrammatic interpretation of Digital processing.**

## 2. ARTISTS USING COMPUTER BASED TECHNOLOGY FOR SCULPTURE

Many contemporary artists have been exploring the conceptual and technical possibilities of digital technology to fit into their creative process more efficiently and effectively. Interacting and manipulating with the digital tools and helping in developing new software, these artists have not only contributed within the margins of virtual space but also in the actual physical space.

The issue of how a sculpture is made has diminished and the issue of what the sculpture is about has enlarged over the period. Digital technology has taken the meaning of sculpture to new levels

- beyond the known limits of form, scale, gravity and space. Dan Collins assessed the whole process as an artist would do and found that it places the artist in the center of an interdisciplinary conversation, not as a marginal agent peripheral to the dialog (Paul, 2000).

Both Robert Michael Smith and Dan Collins have used digital technology mostly receiving positive response considering the potential to encourage a broad interdisciplinary conversation involved in similar core issues (Paul, 2000). Dan Collin states, "My work is sourced, intended, produced, critiqued and hopefully understood in and for an interdisciplinary context apart from what normally passes for the history of art". His "Of More Than Two Minds" and later "Twister" show amicably his interest "in the gap between the virtual space of the computer and the tangible, body-felt reality of sculptural objects". Robert Michael Smith did crossover various disciplines as source for his images from "archaeology, anthropology, zoology, anatomy and scientific visualization to cosmic/microcosmic photography and sci-fi CGI special effects, Dada, Surrealism and Abstraction" (Paul, 2000). "Urchanticede" and the recent "Paradise Bird Burlesque" are fine examples to explain his belief, "Art is alchemy. Alchemy is the magic, observation, process and ritual of life...I build alien abstract worlds that become familiar through frequent immersion. These worlds are constructed to open exploration to the deepest regions of the human psyche for development within the landscape of the imagination" (Smith, 2010).

Michael Rees calls his virtual digital sculptures "meta-forms", meaning that the end result can take on a variety of forms or be produced in different media. He has rightly pointed out at the very beginning that the development of computer based technology and software do not play the pivotal role but significant credit has to be given to "Art and Language and conceptual art in general" (Paul, 2000). His creations can be considered a reconfiguration and expansion of scientific discipline. He borrows images from medical anatomy to explore "spiritual/psychological anatomy" to give new meaning to his work, few examples of his works are "Ajna Spine Series 2 over 1", "Putto 8 2.2.2.2" and "Foot S Curve to Toe, Equivalency Series".

Christian Lavigne created the words "Robo-sculpture, Tele-sculpture, and Cyber-sculpture" for computer sculpture materialized with rapid-prototyping devices and other digital techniques. It is very right when he states, "For a poet of shapes, new technologies give perfect tools to materialize the creative verb. It is the first time in human history that writing and describing an object turn from virtuality to reality" (Wands, 2006). This definitely makes it easier to understand Robert Lazzarani's "Skulls" which seems to defy resolution. In an interview with curator Harry Philbrick discussing his work "Guns and Knives", he said, "When it comes to the physical, the digital manifestation of these objects, it's all run through computer design programs. I start off with a non-verbal sense of what something should be, and then I slowly start to shape it and it becomes more verbal and more numerical until it becomes the final design, which is made up of extremely specific numbers". As the overall foreshortenings and elongations become more complicated in three dimensions, the forms remain warped from all angles (Ganis, 2005).

"Art should, in any case, transcend the medium" is Keith Brown's belief. His biomorphic forms with so many undercuts clearly denote the engagement of technical processes in creating relationships between the hollowness and solidity of his works. He says, "I explore the possibilities that are made available through manipulating forms in the cyber environment and because they don't behave in the same way as they do in actual world it is full of surprises" (Brown, 2007). His works like "Geo\_03", "Shoal" and others show his concept of sculptures moving within and passing through each other in a way that the physical world would not allow.

Bruce Beasley said in an interview regarding his work, "It's better to make mistakes in electrons, than in granite" (Smith, 2008). "Challenge" is a fine example of his work. Beasley believes the ability to design digitally is very liberating because it allows him to play with shapes and design in a way that's more freeing than working with a physical prototype. He manipulates overlapping geometric blocks within one another onscreen, creating a spatial assembly which would have an improbable physical balance if the center of gravity of the entirety was not verified by computer calculation (Lavigne, 1998). Kenneth Snelson's preoccupations encompass both the macro and micro realms. "Atom I" describes his interpretation of the atom's electronic architecture. His conceptualization of the Snelson Atom was based on his enquiry of the structure of atom and its many manifestations in two-and three-dimensional mediums as seen in his work "Atom Animations".

Bathsheba Grossman's exploration of mathematics and science in sculpture and popularizing direct-metal printing as an art medium have made her a successful name in both art and design discipline. She says in simple words, "My work is about life in three dimensions: working with symmetry and balance, getting from a zero point to infinity, and always finding beauty in geometry" (Grossman, 2005). Corinne Whitaker, aka the Digital Giraffe, was acclaimed for creating sensuous and organic shape virtually and physically and the simplicity of the forms with a strong touch of feminism (example of her work is "Lip Service").

### **3. RESEARCH QUESTIONS**

This section presents the key research question of the study, as well as a number of sub-questions related to identifying new approaches and perception of Digital Sculpture. It then introduces the methodology employed to answer these questions, giving details of strategy of work process and significance of interviewing and data collection and data analysis, as well as the possibilities of generalization beyond this study and finally its contribution to the shifting paradigm of digital sculpture theory.

The key research question of this study is:

How should we reframe our understanding of perception of Sculpture, mediated and produced through digital and technological processes exhibited online or in the physical space of a gallery?

Considering the process of artistic and technical exploration of producing 3dimensional forms in answering this key research question, this study raises the following sub-questions regarding changing perceptual qualities of Digital Sculpture:

- How to analyse the changing conceptual meaning connected with knowledge, experience and evaluation of Digital Sculpture by artists and audience?
- Which interdisciplinary aspect of the creative process of digital sculpture making should be considered as the basis of learning such process?

In order to answer these questions, the method of enquiry undertaken was in two stages. The initial stage was creating an effective working methodology through own practice in virtual and actual space and the final stage was a comprehensive explanation of the context of realisation of Sculpture and critical discourse of perception of viewers in an exhibited space.

### **4. FIRST STAGE OF METHODOLOGY - FROM VISUALISATION TO ACTUALISATION**

The initial stage of the research was an artist enquiry mainly seeking to develop new forms and develop new techniques as the basic exploratory nature of the pursuit. The process becomes a critical factor as a part of the creative work, be it from any resources, materials, tools or techniques which then influences the way it occurs. Therefore, the artists never aimed to create

new systems in the discipline of technology but new creative forms according to a variety of requirements for which digital technology was required. The digital technology was part of the method for making rather than an aim in itself. Hence expressing the work process is the intention and the forms created are the vehicles of communication which opens up an area of debate on perception. The process of transformation becomes necessary to be defined.

#### **4.1 Digital experimentation in virtual space: texture, materials and light arrangement**

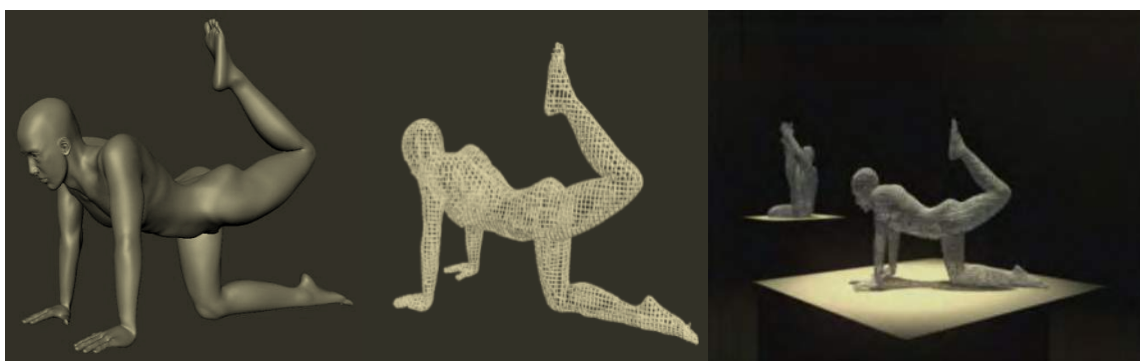
At the outset of studio work, forms were created in virtual space. Every step was intended to lead towards digitally generated images, as the modalities of digital technology not only become a vehicle but also a substance to be modeled, manipulated and juxtaposed in various ways. Firstly the two dimensional layouts were made and later three dimensional modeling of figurative formations and the interior of the gallery space were created. Simultaneous use of Autodesk Mudbox and Maya provided facilities to create human figure formations denoting a particular Yoga Asana literally meaning "posture" or "pose". The complete set of Yoga Asana covers the entire human anatomy, quite literally from the top of the head to the tips of the toes.

It is interesting to note here as a practitioner, the working process in comparison to traditional medium using traditional methods of sculpting, definitely adds a new dimension to realisation and exploration. A traditional sculptor incorporates a process that starts with defining the volume and refining the surface. While using 3d virtual tools, a sculptor uses volume modeling, by growing, extruding and manipulating edges, faces and vertices of a polygon. Virtual sculpture allows form to occupy a multiplicity of possible formations continuously within the same form. But actual sculpture involves traditional methods of modeling, casting, welding, etc., a certain kind of physical engagement.

The placement of eight figurative formations in a virtual gallery space was in accordance with the geometrical space division of the actual Studio3 Gallery at University of Kent, Canterbury. The floor space was divided by diagonal lines called 'Dishas' directing the cardinal points and inter-cardinal points and the center, 'Bindu', symbolizing primal point. When all these points were joined together, it formed a circle which is called 'Mandala', the mystic circle. Consideration for the material used for the models was a must in this research. Modeling and texturing of forms in wire mesh in virtual space is done in such a way keeping in mind the see through and reflective quality of the surface. Also the pedestals, walls, floors, ceilings, doors of the gallery space had to be exactly what was seen in the real gallery space.

The spot light effect in Studio3 Gallery had to be recreated in the virtual gallery space. The light falling on each sculpture and its reflection, the light passing through the surface texture of each sculpture, the overlapping shadow of lines of wire mesh falling on top of the pedestal, the reflected light falling on each wall and floor had to be rendered in the same way as it was seen in the real gallery space.

Therefore, working in virtual space three things were explored within the framework of the software - the modeling of figurative formation, the texture of the surface of the material of the model (fly screen wire-mesh) and other objects in the gallery space and finally the light arrangement in the space. These played a fundamental role in comparing virtual experiences with real world experience.



**Figure 2: The process of modelling, texturing of each model and placement of each sculpture with spot light effect in virtual gallery.**

#### **4.2 Digital Forms- from virtual to real**

There are various ways to produce any 3dimensionalforms in actual space using digital technology and some of the terms used for such digital printing technology that we come across are “digital fabrication”, “digital prototyping” or even “digital materialization”. Although these technologies are primarily driven by industrial design and manufacturing industries, developments in Rapid Prototype offers a lot more potential in terms of creativity for the artist (Sequin, 2005). For the production of the models of sculptures, Rapid Prototype manufacturing technology was the most suitable in comparison to Subtractive Manufacturing Technology like CNC Milling. Rapid Prototyping is the automatic construction of computer-generated three-dimensional model created rapidly from a CAD drawing using additive manufacturing technology. Manipulation of the technique and technology and stretching to such an extent to get the best result in production of material like wire mesh, gives an impetus to expound interest in the epistemology of current technologies.

Undertaking a technical evaluation of current Rapid Prototype techniques’ capabilities and emphasising on the latest development in Additive Manufacturing technology, there were few constraints which had to be dealt with. Three things became very important in this process. Firstly to execute the wire mesh texture on the surface of each figurative formation and maintaining the actual dimension and thickness all over and also keeping the inside hollowness to make it see through. Feasibility of manufacturing such sculptures and choosing the material for production directly affected the total cost of each artwork. Stratasys Prodigy Plus Fused Deposition Machine was used to produce the final sculptures in ABS plastic. Maximum build size measured 203 x 203 x 305 mm (8 x 8 x 12 in). Using the complex three-dimensional geometries of the sculptures as .stl files and creating actual models of the concept of the Yoga Asanas required lot of experimentation before the final sculptures were printed out in parts and then assembled together ready for exhibition.



**Figure 3: Sculpture showing ‘Vyaghrasana’ produced by Rapid Prototype Technology exhibited in Studio3 Gallery.**

### **4.3 Integration of virtual sculptures in real space**

Possibility of incorporating the virtual sculptures in such a way so as to be seen in real time real space was considered. Another way of displaying the virtual models was to use Augmented Reality Application on Android Tablet. For a sculptor, to engage with augmented reality applications that simultaneously display both the physical world and computer-generated images required special care and a different level of knowledge. This is a step further than just using existing software to create 3d models. This was considered to be part of the exhibition the reason being that it is very easy to visualise any virtual sculpture in real space. This is not only to enhance the viewer's current perception of real space but also to associate the virtual and real space. For a sculptor it is highly useful. If it is made user-friendly for artists then a virtual model of any sculpture can be shown on laptop, tablet and even mobile phone anywhere in the world in any surrounding. The problem of transporting very heavy, fragile or massive sculptures can be dealt with by first visualising its placement and its feasibility using this application. By placing a marker at the exact place of the sculpture, a sculptor now has possibilities of seeing the sculptures and making adjustments in terms of materials, colour and size.

### **5. A PUBLIC EXHIBITION**

The exhibition was showcased in Studio3 Gallery, University of Kent in Canterbury from 28<sup>th</sup> August, 2012 onwards. Three methods of display were highlighted in the exhibition space – display of the virtual sculptures in virtual space projected on wall screen, display of rapid prototype manufactured sculptures placed on pedestals and augmented reality experience on tablet placed in the center of the exhibition space which incorporated virtual sculptures in the real gallery space. Before the viewers entered the Studio3 gallery they were led to an enclosed space at the entrance where the virtual gallery was projected upon a wall screen mainly to show the conceptualization of the exhibits and positioning of the sculptures with spot light effect in the virtual gallery space. Then the viewers were led to the real gallery space where the physical sculptures produced through Rapid Prototype manufacturing technology were displayed on pedestals and the sculptor explained the process of making in detail emphasizing on the transformation of texture of wire mesh from virtual to real sculptures. Pointing out the similarities of the effects of spot light in virtual and real gallery space and the set up of the placement of sculptures on pedestals in the virtual and real space highlighted mainly the comparison of virtual experience with real world experience. Later the viewers were encouraged to use the Augmented Reality Application on Android Tablet to see each virtual sculpture and place it anywhere in the gallery space using the marker.

### **6. THE ROLE OF THE VIEWERS**

The final stage of the research was to be able to present a comprehensive explanation and critical discourse of perception of the viewers. Following were the main objectives of the purpose of interpretation:

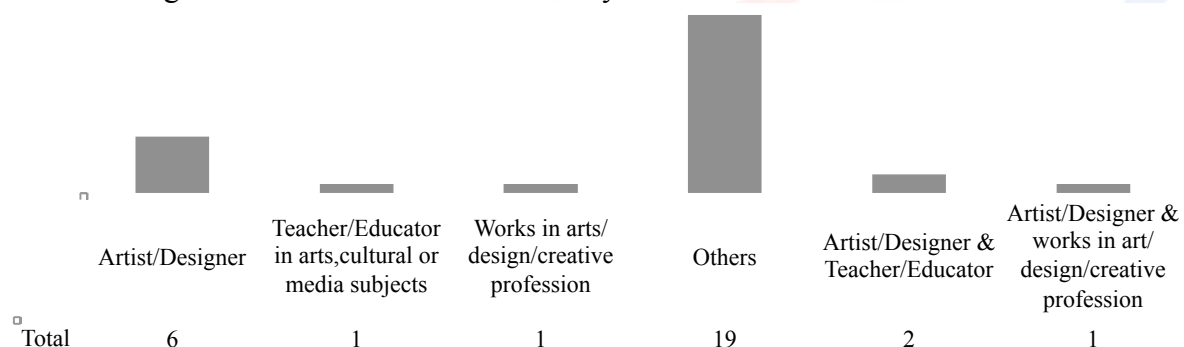
- To establish the level of knowledge of Digital Sculpture and related terms of the viewers.
- To investigate how viewers rate different display methods of Digital Sculpture.
- To identify suitable examples of display and explain the techniques and processes of sculpture and its creation.
- To establish which aspects of the exhibition were particularly liked or disliked by the viewers.
- To analyse the relationship between the knowledge of Sculpture and its interpretation on the one hand and learning experience on the other.
- To identify viewers interest to learn themes and narratives relating to the physical representation of sculpture.

The process which is highlighted in this exhibition involved the production, creation and display of sculptures in an exhibition space as an artist's enquiry to create a working methodology and then presented to viewers who had different vision, understanding, perception and also different background, in order to know about their perception and opinion. The invited viewers were from different professions- academicians, researchers, technicians, artists, art-lovers, critics and general public. The experience of the artist is definitely very different from the experience of the viewer and sometimes unexpected and different interpretation of viewers modifies the understanding of the whole process. There are three assumptions on which the reaction of the viewers in response to any art-form is ascertained. Firstly, the traditionalist view traces back to the history to justify any art work, the institutional theory relies on the definition of what should be art and the third view has its basis in decisions on perceptual qualities of the artwork. Document the responses and reactions of viewers who are either aware or unaware of the process of realising the sculptures, opens up the main relevance of this research in redefining art through perception as a mode of enquiry.

Viewers usually come under two categories: those who are "familiar with art and expect an exhibition to answer and broaden understanding of art within the confines of what is already understood" and those who are "more aware of what is going on in art scene and seek to find validation of this awareness or believe they are able to judge the quality of the exhibition on a deeper level" (Witkamp, 2007). Even though this distinction exists, the viewers have to undergo the art experience and become the ultimate judge of the work which directly or indirectly is enabled through cultural values, social context and personal state of mind. The attention and reception of viewers, and mixed perceptual experience challenges the unwavering line between object and subject. Perception involves information which is imparted to our senses and collected in our mind affecting individual's insight and viewer's response.

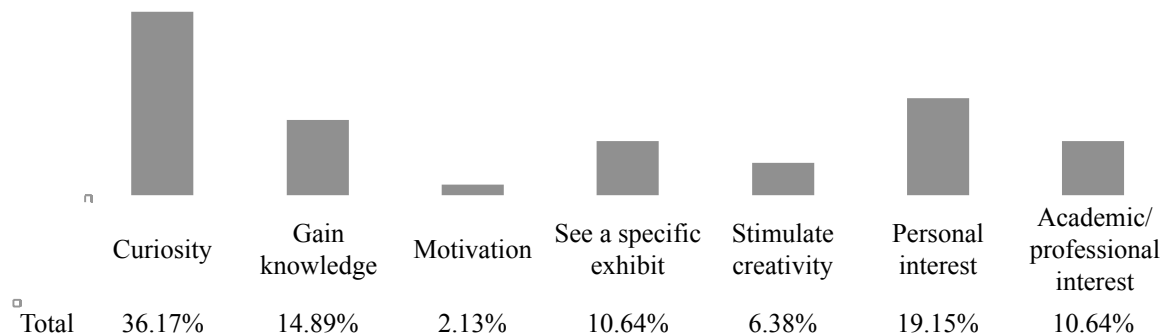
## 7. DISCOURSE OF PERCEPTION OF VIEWERS

The first group of viewers who visited the Studio3 Gallery at University of Kent in Canterbury and the first study for this paper was based on interviews of 30 people, out of which 16 were female and 14 were male. The majority of viewers, almost 36.6%, were in the age group of 25-45 years; 16.6% were in the age group of 19-25 years, 26.6% were of 45-65 years and 20% were over 65 years. The chart in Figure 4 shows 36.7% of the viewers were already engaged in art and creative profession either working or teaching in the field. The remaining 63.3% of viewers were those who had general interest in art and creativity.



**Figure 4: Background of viewers visiting Studio3 Gallery.**

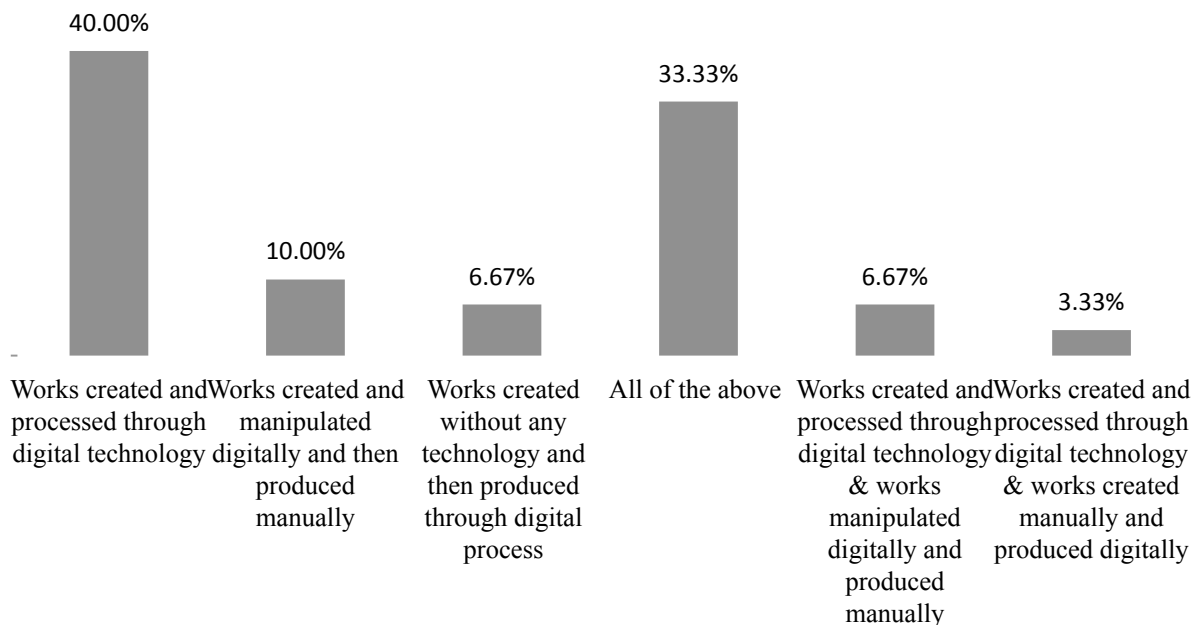
It was interesting to note from the chart in Figure 5, that maximum number of viewers wanted to see the exhibition out of curiosity. In a way it implies that the term 'Digital Sculpture' which was mentioned in the publicity of this exhibition attracted these viewers, because of being more aware of Digital Art as part of Digital Age, irrespective of having either some knowledge or no knowledge of the subject.



**Figure 5: Primary reason for visiting the exhibition.**

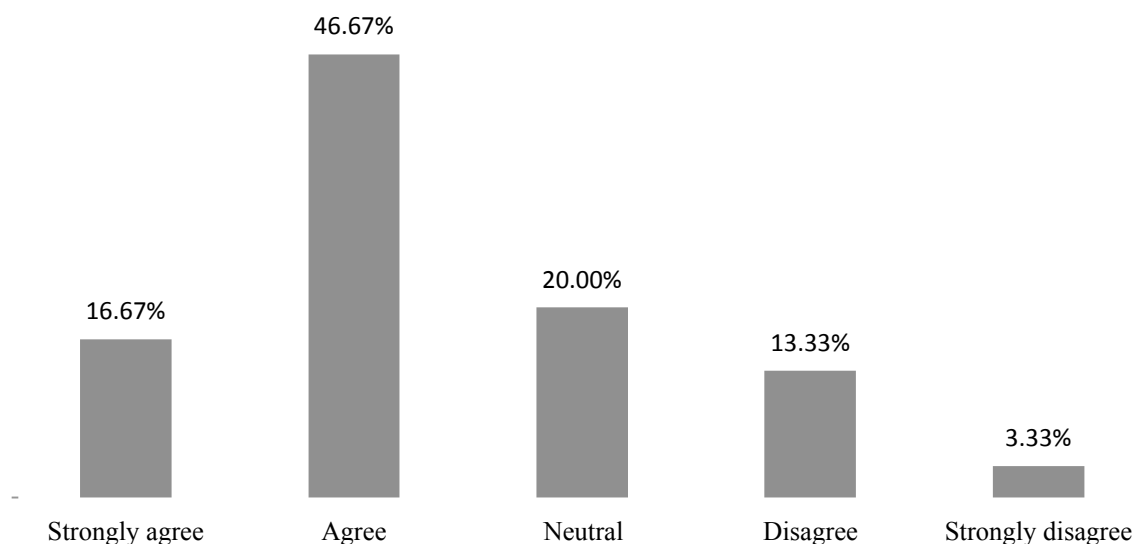
Determining the background of these viewers were important as the standard for judging digitally manufactured art forms cannot be the same as for the standard used to judge manually produced art since the latter is derived from 'non-technically informed perception'. 70% of viewers who visited the exhibition had little or no knowledge of digital technology used for processing and producing sculpture. 27% had very general knowledge and 3% had expert knowledge. The method of displaying the sculptures in this exhibition involved the preference of the process of Rapid Prototype technology over CNC Milling technology and the projection and display of 3d images using screen and android tablet. It was necessary to find out if the viewers had any prior knowledge of these technological processes. 63.3% of the viewers had no knowledge of Rapid Prototype technology and remaining viewers already had knowledge of the process not only being used for creative works but also for industrial purposes. Interestingly less people knew about CNC Milling manufacturing technology, almost 70% had no knowledge about this process being used. When asked about projection and display of 3d images, 83.3% of the viewers responded positively. Most of these viewers have seen commercial displays and projections of commodities in shopping areas mainly for promotion or sale purpose. 17% of the viewers knew very few artists involved in making digital sculpture. Anthony Gromley and Scott Snibbe's exhibitions have been seen earlier by most of these viewers.

It was the first experience of 87% of viewers to see an exhibition of digitally processed and manufactured sculptures. It was important to ask all the viewers what is digital sculpture according to them? They were given four options to choose: sculptures which are manipulated digitally and then produced through traditional manual process; sculptures which are created without the use of digital technology and then produced through digital process of production; sculptures which are created and processed entirely through digital technology or all of the options. Maximum viewers, about 40%, considered digital sculptures as works which are created and processed entirely through digital technology.

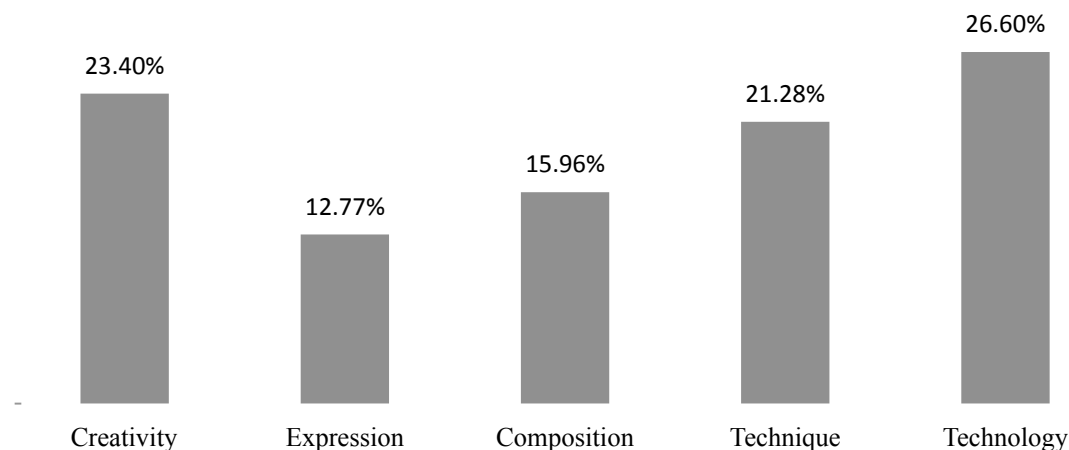


**Figure 6: Viewers' knowledge of what is Digital Sculpture.**

The next section of the interview questions was mainly to analyse the viewers' cognitive responses to the exhibition. Based on the three modes of display method and three processes of digital technology involved in producing and presenting the sculpture, viewers were asked for their preference. Besides the display of real sculptures in the gallery space where the viewers could actually see, feel or touch the sculptures, the other two display methods only showed virtual sculptures. 60% of the viewers preferred the display of virtual and real sculptures together, of the remaining 37% of viewers preferred to see the real sculptures and preference for virtual sculpture was only 3%. The chart in Figure7 very clearly shows that 63.34% either strongly agreed or agreed that traditional sculpture using traditional medium is different from digital sculpture.



**Figure 7: Viewers' response on difference between traditional and digital sculpture**



**Figure 8: Viewers' opinion on what the artist wanted to emphasise in the exhibition**

Viewers were given a choice of five options- creativity, expression, composition, technique and technology - specifically to find their opinion of what the artist wanted to emphasize in the exhibition. According to the answers to the interview question, technology seemed to be highlighted in the above chart followed by creativity, technique, composition and lastly expression. It is interesting to note that the artist's intention was to give equal emphasis on creativity and technology and subsequent emphasis on the value of expression, technique and composition.

Those viewers who had little or no knowledge of Digital Sculptures i.e. almost 70% of total number of viewers, 52.4% were interested to learn and practice Digital Sculpture, 28.6% were interested to learn traditional sculpture using traditional medium and 19% wanted to try both together. Out of 26.7% of the viewers who had general knowledge of Digital Sculpture, 50% were interested to learn and practice digital sculpture and the remaining 50% wanted to learn both. Those with expert knowledge were only 3.3% and they showed eagerness in exploring Digital Sculpture further.

Following are some of the interesting comments the viewers stated in their interviews giving preference to traditional sculpture:

- 'Would rather do a maquette and go through the process of engaging with the material'*
- 'Would want to work hands-on with materials, feeling how they behave, seeing how they balance'*
- 'Would like to go by the pace of making dictated by a particular medium e.g. stone'*
- 'Sculpture needs to be felt and touched as opposed to virtual sculpture'*
- 'Would better start from basics of sculpture making and then move to technology'*

Some of the comments of viewers who preferred Digital Sculptures are stated below:

- 'Already familiar and has background knowledge'*
- 'Interested in physical digital sculpture making'*
- 'Seems very engaging process and encouraged to try'*
- 'Like digital art, would like to try something digitally'*
- 'Will try digital technology as it is more accurate and also not good with traditional sculpting'*
- 'Would like to see how far it could go while experimenting'*

## 8. CONCLUSION AND FUTURE WORKS

This paper examined the different types of Digital Sculpture models, virtual as well as real, and their applications, within the framework of available digital platform. It presented a number of applications for study, presentation, evaluation of analytical models which included the use of

different technologies, from 3D modelling to Rapid Prototyping. The changing perceptual qualities of Digital Sculpture were further analysed by interviewing viewers alongside the artist's own experience of sculpture making. The next stage would be to create user friendly hands-on guides for artists and other people who would like to learn the process of making, presenting and exhibiting Digital Sculpture in any location - in virtual or real space.

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*Digital Knowing: E-Publishing and Student Text Book Usage*

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Official Conference Proceedings 2012

Abstracts

The advent of e-publishing not only clearly has ramifications for book consumption patterns generally, it may be post-secondary education that is one of the sectors of society where the impact of this technology is felt most. Textbooks tend to serve an apparently prosaic function. They are used by students and then discarded according to course requirements. As well, students tend to be acutely aware of text book cost. A technology that lowers these costs is likely to create a new status quo of text book consumption. Over the past six years, I have interviewed over sixty people working in the publishing trade, from people at the very top of immense multinationals to a variety of small houses. Over the past decade, publishing has gone through radical changes. It has also responded to the challenges posed by e-publishing with a variety of reactions ranging from anxious fear to uninhibited enthusiasm. At the same time, I have been teaching in South Korea for almost ten years and have observed the behaviour of students regarding purchase and use of texts. I have seen the rise of "smart phone culture". And I have repeatedly talked to my students about these phenomena and their reactions to them.

Key words: digital, education, textbook, publishing

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## INTRODUCTION

The idea that technologically “advanced” modes of teaching are ipso facto superior is not a new concept. The reasons for this are as often intuitively limned over as they are established as fact. As anyone who has spent time in a language lab engaging in rote-learning gap fill exercises to a cassette tape or entering a somewhat drowsy state in a darkened room while a documentary movie is being played can tell you, technological change in the classroom does not automatically spell improved teaching in the classroom. Good pedagogy, ultimately, has its source in good instruction with a communicative basis. What is paramount is an educator who pays active attention to the progress of students. Yet sometimes technological changes in the way instruction occurs are driven by the simple fact that technological change is inevitable.

Consider the following analogy: we use computers not because they produce manuscripts that are more legible than those produced by typewriters. Yet, among the many reasons why students (and virtually everyone else, for that matter) uses computers is because they are ubiquitous. Anyone wishing to use a typewriter (for example, because they hate digital machines) would find the task of purchasing one these days so arduous it is likeliest he or she would give up and buy a computer simply for convenience's sake. In a parallel sense, if e-books eventually catch on in the classroom, they will, for reasons, including some cited below, become prevalent.

But are all e-text books the same? And do students feel an unequivocal desire for them? Is the (apparently inevitable) digital revolution in e-texts understood in terms of its driving forces? To understand possible answers to these questions, we have to look at the broader publishing industry, and the radical changes in attitudes it has experienced the last decade, and continues to experience.

This paper will consider some of the ways in which change is both being forced upon and driven by the textbook publishing industry, and it will also consider the more nuanced ways in which university students – particularly in an EFL context – themselves view digital technology. For it is not necessarily the case that a general love (and here that noun is not excessive) for digital technology translates into a blanket preference for E-books over print books. At the same time, it will consider the ways in which “extra-cultural and extra-educational” factors such as economic forces can drive choices that appear to occur because of “natural” change.

### 1.

Change away from the traditional notion of a book being exclusively an object printed on paper is not new to the text-book industry; as “add-ons” such as cassettes, CDs, and additional online material show, textbook publishers have long been adapted to the educational text as being a hybrid in terms of its medium(s). But it is within the trade industry that the idea of a book published entirely in a digital medium that change – and anxiety – has had its focus.

The ideas of an e-book has been around for many years: in the 1980s, the idea that CDs placed in a desktop and read on the monitor gained a certain currency. Two inventions pushed the idea much further. The first was the Internet; the second the invention by Sony of “e-ink”, a screen with a resolution and lack of illumination that was much easier on the eyes than electromagnetic screens. The result was the internet-distributed e-book: a digital “object” which successfully mimicked paper but with very low production costs and extraordinary ease of distribution.

In a telephone interview with this author, Jonathan Burnham of HarperCollins observed in late 2008:

I think that if the right sort of device dash at the right price-point as well – comes along, this will lead to a major shift – quite a rapid shift – from the traditional book form. I know that I myself use my e-reader around 70% of the time. I think there is a very strong potential market for them. As with the iPod, there could be an explosion of use of that sort of medium which would be very sudden. The complication is that we're now in the middle of a recession. [Interview by phone, December 12, 2008, January 12, 2009]

This rapid evolution of technology did not lead, however, to a rapid evolution in the way publishers did things. Factors besides pure technology were at play: economics and social attitudes were determining rates of change. The “major shift” Burnham predicted approximately four years ago as of this writing still has not materialized. Nevertheless, Burnham's concern about and acceptance of the effects of digital technology on traditional print publishing are germane to all fields of publishing. And this is as true of textbook publishing as any other sector of the industry.

Thad McIlroy, a publisher and consultant with a specialty in textbook publishing, commented in a recent e-mail exchange with this author “publishers of successful legacy print products can milk them for a few more years but it would be foolhardy to launch a product primarily in print today”. [Interview by e-mail, September 5, 2012].

In other words, the entire print publishing industry is in a state of great uncertainty. Change, on the one hand, is coming more slowly than some pundits within the industry are predicting, yet on the other hand, change is viewed as inevitable. And given that any multinational industry will make its strategic choices on the basis of sound research and well thought-out business models, the textbook publishing industry is particularly poised for change since its primary audience –that of secondary and post secondary students –is the demographic most amenable to changes in digital technology. Students, above all university students, are a group whose perceived tastes and preferences will drive significant choices made by the textbook publishing industry.

Yet already a subtle contradiction reveals itself. If university students are perceived as having particular preferences, is it necessarily the case that these preferences exist in quite the form that textbook publishers –especially multinational ones –assume that they do?

## 2.

The textbook industry, while separate from what is termed trade publishing, does not exist in a vacuum that is untouched by major trends affecting the latter. Trade publishing is the term used to refer to the way average people understand publishing generally: the novels, celebrity biographies, cookbooks, travel books, self help books, and so forth that one finds in large commercial bookstores. Text publishing, in contrast, is aimed at the specific market of students enrolled in schools. University textbook publishing aimed at undergraduates in a more specific group yet: those students pursuing undergraduate degrees at universities and colleges, whose reading lists are assigned by instructors, and who then purchase their texts for classroom and study use.

In late 2006, when I first asked publishers about the role that e-technology (e-readers such as the Sony reader or Kindle) and audio books might play in altering book publishing, the responses I received were enthusiastic but guarded. Understandably, publishers often had an emotional attachment to the physical object of the book. They also saw the print book remaining a superior “platform” for text. As one publisher, Bev Daurio, remarked, “audio books will continue to be

used and useful, but e-books – it's hard to say – though on-line access to archive, historical and reference materials as well as specialty journals and the like is growing and seems appropriate" [Daurio, interview, 2006].

During the period 2006 – 2007, the author interviewed a wide array of people involved in publishing, from small press publishers such as Daurio. Richard Nash, Che Elias, Jordan Jones, Rolf Maurer, Cathryn Kilgarriff to mid-sized publishers such as Patrick Crean, Lorin Stein and Jack David to major publishers such as Adam Bellow, Jonathan Burnham and Peter Ginna. (The author also interviewed several arts journalists and writers.) Opinions, of course, varied. But all recognized the industry was going through an unusually turbulent period.

Then the recession of 2008/2009 occurred. It had a devastating effect on the sales of trade books. As journalist Alex Good observed, sales for HarperCollins Canada fell approximately 70%. Peter Ginna, publisher at Bloomsbury USA, commented in an e-mail to this author, "this is not the first recession I've seen, but it is the worst" [Ginna, interview, 2008]. The recession came after the dampening economic effects of 911 in 2001. A spate of articles appeared in magazines such as the London Review of Books, Harper's, New York magazine, and the New York Times predicting the "end" of publishing as people had traditionally known it. This generally pessimistic mood had its effect on textbook publishing.

Within the same approximate time frame, the cost of print text books was itself becoming an issue.

The major issue is the high cost of textbooks, mainly those used in higher education, where students must shell-out the cost directly, estimated, by the College Board at between \$805 and \$1,229 on books and supplies alone during the 2007-08 school year. The price of textbooks has never been dirt-cheap, but the last several years have seen the price of many texts climb to \$150 or more. Suddenly a range of individuals and groups have taken notice. "

<http://thefutureofpublishing.com/industries/the-future-of-educational-publishing/>

In short, students are very sensitive the price of their texts, and the texts themselves can sometimes be overpriced (on occasion, conspicuously so).

What frequently happens is students react to high prices by simply avoiding paying at all; they make illegal copies. While on the face of it, this may seem to put the onus of blame on students, there are co-factors contributing to this "too much or too little" mentality that the industry needs to remain sensitive to: prices can be very high (one writing book I know of – printed on relatively cheap paper, retailed for close to \$90 USD – an exorbitant mark-up). Educational publishers can counter their costs have increased not only because of the price of print publishing but all the "extras" that students are now coming to expect:

"While many factors affect textbook pricing, the increasing costs associated with developing products designed to accompany textbooks, such as CD-ROMs and other instructional supplements, best explain price increases in recent years. Publishers say they have increased investments in developing supplements in response to demand from instructors."

Annual Percentage Increase in College Textbook Prices, College Tuition and Fees, and Overall Price Inflation, December 1986 to December 2004

Students were responding to the increase in textbook prices by buying secondhand books or, in jurisdictions where it was feasible, photocopying them. This latter phenomenon is easily evident

in the country where this author works, South Korea. However, while on the one hand, this habit of producing samizdat editions of copyrighted books may seem to put the onus of blame on students, textbook publishers deserve some blame for creating a situation in which students saw themselves as being overcharged. One undergraduate writing book I know of – printed on relatively cheap paper dash now retails for close to \$90.00 U.S. This is an exorbitant markup.

Furthermore, textbooks are often sold in what can sometimes seem to be a dizzying array of new editions. Particularly in nations outside North America, this can create a double stress: it dampens the market in secondhand books, and creates confusion at the beginning of a semester when, for example, a bookstore orders copies of a book and finds that at the regional warehouse there is either a mixture of additions or the edition that the instructor prefers to use is not available.

3.

As mentioned earlier, the textbook industry has in reality producing books that are a hybrid of print and digital for some years now.

“While many factors affect textbook pricing, the increasing costs associated with developing products designed to accompany textbooks, such as CD-ROMs and other instructional supplements, best explain price increases in recent years. Publishers say they have increased investments in developing supplements in response to demand from instructors.”

Annual Percentage Increase in College Textbook Prices, College Tuition and Fees, and Overall Price Inflation, December 1986 to December 2004

The textbook industry, then, is already in a state of transition; arguably one significantly more advanced than that of trade publishing. However, recall that one major difference between trade and textbook publishing at the retail end is individual consumers make their own choices about which trade title they will buy and read, while university in college students have their titles assigned to them.

For obvious reasons, publishers expect and require reasonable profit margins. The challenges that face them are in no small measure the result of the singular relationship they have with their readers. Textbooks produced on a mass scale can be quite profitable when the titles prove popular with departments and instructors. In this regard, textbook publishers have an advantage over their compatriots in trade publishing. But at the same time, textbook publishers are acutely sensitive to the risk of piracy. Since this can take the form of a legal photocopying, digital technology, with its extraordinary means of copying poses a threat to the industry. What textbook publishers are looking for is a means of getting titles to students while protecting their profit margins. And what students (via instructors) are looking for, obviously, is good quality and reasonably priced material.

The question for the industry then becomes, what do students want? The underlying assumption of analyses of trends within the publishing industry tends to assume –as University of Calgary instructor Robyn read suggests –that students will naturally gravitate toward e-texts because students are so enamored of their digital phones, laptops and tablet computers. However it turns out that student preference for digital platforms is not as universal as one might initially assume, and that print books still possess practical advantages.

4.

Discussions with students at the university where I work on the topic of e-texts has led to a few

preliminary conclusions: the first is that digital technology is not loved in a whole-hearted way by students because of the same factor that tends to alienate students from print books that are overpriced: the digital devices are themselves quite expensive.

Unsurprisingly, however, given that e-books are digital devices and young people more than any other demographic are particularly comfortable with this kind of machinery, students certainly saw that e-books had advantages. What was unexpected in the research, however, was the ambivalence students expressed. Students offered opinions on e-books without any prompting from myself apart from an initial classroom discussion on the various topics one might think about. [For the sake of clarity of separation, even though some of these responses were written by two or three students working together, others were written singly; therefore, I refer to each statement in the singular followed by an identifying letter.]

\*

Students saw advantages to e-books in terms of portability:

First, e-books are lighter than paper books. Weight of paper books becomes much heavier if the book has a lot of content. On the contrary, e-books don't need any paper. Users don't have to worry about the weight of books because they only put the e-books device in their bags. [personal interview A, September, 2012]

Students also liked the digital search functions of e-books (one reason, incidentally, why students often prefer e-dictionaries over printed ones):

Third, it is easy to find specific words or phrases using the books there are some cases when people need to find the content they want to see again. In textbooks, finding words or phrases is not easy because we need to look through all the pages. It makes our eyes and brain so tired. However, the [e-]book users can solve this problem easily. [student A, interview]

Finally, it's easy to quote from. There's no need to re-type unquote in. When you want to quote, all you have to do is just copy and paste. [student C]

Some students thought the light of an e-reader with a back-light was advantageous but saw this as a Pyrrhic benefit because it added to eyestrain:

First, using E-booked can cause health risk to the users. People's eyes staring at the screen at close range longtime blink less then become stiff. The screen of tablet PC maintains regular amount of light. However, the eyes which absorb the light her strain to the limit constantly until he slashed she finishes using device. It causes decreased visual acuity. [Student D]

If people use E books for long periods of time, their cause will experience fatigue and may have their eye sight worsened. This will cause the user spies to feel extremely tired of a quick rate. Moreover, this affect can be significantly multiplied if the users read in the dark.

[student F]

Similarly, while some students saw digital readers as capable of offering a good medium in which to write notes:

... but I know that iPad have keyboard the can be attached a iPad so user can type words and iPad. Therefore, it could be possible that the book also have keyboard that have that function. This it makes student more convenient to write memos in class then hit the delete previous word handwriting on textbook. Of course, student also can use electric hand to mark or highlight text on screen. [student B]

Others did not::

Secondly, it's hard to write in E-books. Although you can jot down brief notes through some devices, this process cannot be as delicate and accurate as handwriting. [Student G]

One student pointed out in an essay (though others mentioned this verbally in class) that digital devices that are connected to the Internet (the medium of e-title distribution) also carry temptations; they easily provide their users with text, but also easily provide them with distractions.

First, there are many temptations in E books. I'm pretty sure that most of you guys have experience that surfing the Internet or playing game while studying on Internet. As you know, there are many distracting things when you enter Internet by E-book like game, face book etc. For instance, according to the local research by Seoul National University, one out of third of students are having difficulty on concentrating on class. [student E]

Ease of purchase via the internet was an advantage for one student:

First, helping users save the time is one of the reasons why people like e-books. If it were not for e-books, uses would have to go to a bookstore to get what they want. By using them, however, users can stay at home and easily access what they want. In other words, they can reduce the time and do other things. [student C]

But other Internet issues, such as piracy, raised concerns:

Third, there could be legal dispute with copyright problems. Typical characteristic of digital devices is that you can download any file you want. It can be both merits and demerits. Good for users, but bad for producers. [student E]

The last disadvantage of using the books is piracy. With the advancement of technology,

piracy and illegal downloading has become a big issue. This applies to almost any kind of file on the Internet, and the book files are not an exception. [student F]

Electromagnetic waves were a concern to many students:

Last, electromagnetic waves from the device are harmful to our bodies. It can be fatal and drive devastating results two are by side and the amount of sperm. According to the recent studies of Massachusetts institute of technology, MIT, it is found out that electromagnetic waves from Electronic Devices such as smart phones and E books are not friendly to our health. [student E]

Another health risk of it can become we're read to the users is the fact that Electronic Devices emit microwaves. Even though the amount may be little, a longtime of exposure to microwaves can become harmful to the users. [student F]

On a more prosaic level, the annoyance of recharging batteries was a concern.

[It] can be a hassle to constantly supply power for the device. Most devices compete in the performance of the tablet PC. The competition causes the deficiency of batteries. [student D]

Second, without better a comment you can't study. One of typical shortcomings of digital devices is that they need to be recharged. If he forgets a recharge, no way to study unless you recharge it. But studying while recharging can be uncomfortable because it gets hot when recharging. And you should handle it carefully not to disconnect jack that helps recharging. [student E]

Another disadvantage that e-books have is that they are too inconvenient to use. Some may argue that this is not true, however, I believe the books are inconvenient. The reason why I say they are inconvenient is because the books need constant supplies of power. But the books are run on batteries that is supposedly set to last for a long period of time, in the end, the batteries will eventually run out. [student F]

Of course, the main argument in favour of e-books is their economical benefit: the reduction in price of each e-title. Even here, however, students were skeptical – and perceptive. This was of particular interest to the author, since it is the economic argument that is most often used by e-book advocates within the publishing industry to promote this mode of publication.

Second, expecting the decline if the price of the device is absurd. The consumer who want to read the book, have to consider the price of the device first. None of them as economical. That is not over. After buying the tablet PC, the consumer must buy each of the E books here she wants to read. Except Amazon, all companies are not directly associated with publishing industry. If the company wants to publish of the e-book, they have to deal with copyright. The cost of buying copyright can be imposed on consumer and the price of the book will never decrease. [student D]

The second disadvantage that the books have is that they can be quite expensive. First of all, the prices of the devices are expensive. They use the cost over 100,000 won. This price far exceeds that of a single print book. This is a price that is not easily affordable for most people to spend so freely. In addition, once E readers are purchased, users must now buy the actual file of the book. However, these books are not much cheaper than the actual print versions. Due to the cost of the initial investment made in the device, using ee books can be extremely expensive in some cases. Therefore, due to its expense of cost, ee books have a great disadvantage when compared to print books. [student F]

5.

## CONCLUSION

Digital technology is certainly here to stay. And e-books in some forms – for example, the easy-to-read, colour-saturated, ever updated texts used in first and second-year university undergraduate EFL classrooms – are certainly moving in the direction of e-books. As noted earlier, referring to some of these texts as “print books” is becoming an increasing misnomer in any case, since they are becoming more multi-media with their CD and online exercise tie-ins.

However, other texts demanding longer attention spans or texts written by authors sensitive to the issue of piracy may not be as amenable to e-publication as proselytizers for tech-change like to argue; similarly, the audience of university level book buyers may not push for them with unequivocal eagerness.

Ultimately, text book publishing, being an industry, will follow consumer trends as well as try to set them. Some form of e-publishing is inevitable; it is already occurring. But the final form of the text-book publishing may not take a digital form, though it is doubtless the case that the majority of change which e-technology will afford is yet to be witnessed.

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*The Lesson Model Development of Science Concept Learning for Lower Secondary  
Students in Ban Phu Pittayasun School through Constructivist  
Paradigm and Science Camp Process*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

Science Camp Project is an educational initiative designed to provide students with opportunities to apply basic concepts in science and thereby develop their key competencies. Three study purposes were 1) to construct and develop lesson model of science concept learning for lower secondary students by negotiation in science camp. 2) to compare students' correct scientific concepts between before and after using the developed science learning stations, and 3) to study students' key competencies through science camp activities. The samples had attended in science camp were concluded of 75 students, levels 13 and 14. Three science learning stations were designed for each group through Predict-Observe-Explain task. Data collections were used two-tier multiple choice, student written work and interview. Data triangulation was used for interpreting and confirming students' concepts in science before and after operating in each station. The results of the study revealed the following: 1) students can construct 3 suitable science stations- physics, chemistry and biology- for individual challenging student's learning activities in science concepts, 2) percentage of students had correct science concepts in physics, biology and chemistry after operating were higher, and 3) students' key competencies after finishing camp process were high and very high levels.

**Keywords:** science concept, science station, constructivist, POE task, key competencies

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## Introduction

Following the announcement of the National Education Act B.E. 2542 (1999) and Amendments (Second National Education Act B.E. 2545 (2002), student-centred and constructivist educational approaches have been progressively implemented since 2002 in formal teaching and learning practice in Thailand. These approaches recognise and apply students' prior knowledge and understandings. In addition, from 2012 all schools in Thailand have been adopting a new approach to the school curriculum, each school developing its own curriculum based upon the Basic Education Core Curriculum B.E. 2551 (A.D. 2008) (Bureau of Academic Affairs and Educational Standards, 2008). The new educational policy features a complete change in approach to basic education in Thailand. Apart from curriculum changes, student-centred and constructivist approaches are widely employed in promoting five key competencies and eight desirable learner characteristics within the basic educational system. The study reported in this article investigated the possibility of modifying, where necessary, current conceptual scientific understandings of lower secondary students by presenting challenging alternative conceptions within the science camp process through activities at three science learning stations, each based upon a student-centred, constructivist approach.

Constructivism incorporates both psychological and epistemological principles, and advances the notion that knowledge is not merely received passively, but is progressively built up by the cognising subject. It holds that the function of cognition is adaptive, enabling the learner to construct viable explanations of experiences (Driver, 1989). Such constructivist ideas embrace many facets of Piaget's genetic epistemology and often serve as a reference position for discussions of constructivism in education (Treagust, Duit, & Fraser, 1996). Constructivist teaching approaches also consider students' beliefs and conceptions with respect to student-centred pedagogy in science instruction, by including a focus on the interests, learning skills and needs of students in actively constructing their knowledge (Duit, 1994).

Research applying student-centred and constructivist approaches, conducted within a 2-day and 1-night school science camp environment, involved 1) preparing students for the learning process, 2) assessing their present level of scientific conceptual understanding, 3) assessing the *validity* of their scientific conceptual understandings, 4) designing and conducting relevant science experiments, 5) having students construct science learning stations autonomously. The study adopted some common strategies for investigating students' understanding, including two-tier multiple-choice tests (Treagust, 1988), Predict-Observe-Explain (POE) sequences (Gunstone, 1995), interviews (Chen, Lin, & Lin, 2002), and written work tasks. In addition, the Learner's Key Competency Survey, a survey instrument compiled by the study author, school teachers and science camp mentors (as expert referees) was used to investigate students' key competencies with respect to evaluating science camp activities.

Congruent with principles of established validity as confirmed in a review of research on science concepts in physics, chemistry and biology, the study author constructed science problems based on information and concepts from standard textbooks and recent online websites. The first science station (physics), entitled *Free Falling* (Hewitt, Lyons, Suchocki & Yeh (2007)), describes an object falling freely with an acceleration of  $g$  ( $9.8 \text{ m/s}^2$ ), air resistance being negligible, and requires students to explain why two connected bricks do not fall twice as fast as a single brick. The answer is of course evident from Newton's second

Law of Motion: according to which the acceleration of an object depends not only upon the force acting (as weight, in this case) but also upon the object's resistance to motion-its inertial mass. Kapu (2009) employed the same experimental idea demonstrated by Galileo's famous experiments with falling bodies. The second station (biology), entitled *Tree Height*, integrates the disciplines of biology and geometry. This station used a simple clinometer (utilising the concept of relationship between two similar triangles) to determine the height of a tree in the ecosystem (a biological exploration). The Faculty of Engineering and Applied Science, Queen's University (2012) provided the instrument and procedural protocols used in estimating the tree height. Details of how to construct and use a simple clinometer were clearly explained. The third station (chemistry), entitled *Elephant Toothpaste*, demonstrates the relationship between a chemical reaction mechanism (the mixing procedure) and the overall reaction (products). Advice for making Elephant Toothpaste and the associated chemical reaction mechanism was provided by Helmenstine (2012).

The aims of the study were therefore to investigate the effectiveness of using constructivist-oriented science learning stations to modify students' understanding of various science concepts, using multiple investigation methods as part of a science camp of 2-day and 1-night duration. The study aimed to challenge students' present conceptual understandings in physics, chemistry and biology by consideration of alternative conceptions presented through participation in group activities within constructivist-oriented science learning stations (see Figure 1).

This article reports on the effectiveness of using the Predict-Observe-Explain (POE) task model for group activities, within constructivist-oriented science stations in a science camp environment, to enhance students' understanding of essential concepts in science. Learning outcomes were measured by means of two-tier (pre-test and post-test) questionnaire items triangulated with students' written work and interview results, combined with assessment of learners' key competencies using a learners' key competency questionnaire.

**Place Figure 1 about here**

## **Methodology and Research Design**

### ***Methodology***

The science camp process encourages students to prepare for learning and engage in continuous activities within a group environment. Each group adopted a name, group motto and performance identity, individual group member roles being decided through entertaining games organised by camp mentors, as well as through various group activities. Different forms of the two-tier test elicited students' pre-test and post-test understandings before and after attending each science station. A POE teaching sequence encouraged students to utilise their prior knowledge when participating in the learning activities in the science station experiment with a view to constructing their own knowledge pertinent to the activity.

The assessment techniques for group and individual activities in this study were based upon established assessment strategies, including the two-tier test, interview, written work and open investigation.

### ***Research Design***

The research design consisted of a series of case studies (Merriam, 1998) which informed the design of the three learning stations, using both quantitative and qualitative methods (Cohen,

Manion, & Morrison, 2000) for data collected from lower secondary (levels 13 & 14) students at Ban Phu Pittayasun School, Thailand. The students attended science stations at a science camp organised by Udon Thani Rajabhat University and the study author, and results from three of these form the substance of this report. The participant sample, numbering 75 students, was divided into groups of approximately 12, two groups being allocated to one science station. As the research was conducted within a science camp format, using a constructivist teaching / learning paradigm, the research protocols are therefore presented here in two parts: Part one explores changes in students' understanding of science concepts; Part two examines the quality of the science camp activities themselves.

*Part One: The use of the Predict-Observe-Explain (POE) task model within science learning stations to challenge students' science conceptual understandings*

Science camps, based on the National Education Act B.E. 2542 (1999) and Amendments (Second National Education Act B.E. 2545 (2002), are one of the select activities in Basic Education provided for school students. These camps are one of the principle means adopted for the development of students' personalities, key competencies and other desirable characteristics. Furthermore, students attending science camps have the opportunity to rectify any conceptual inaccuracies they may have with respect to science disciplines. In this research study, each of the two groups assigned to a particular science station followed the same four-phase design protocol outlined below.

**Phase 1: Orientation**

This phase introduced the science camp process to prepare students for learning via group activities within the science stations. Orientation consisted of three steps:

*Step 1:* The camp mentors 'warmed up' the camp participants and introduced themselves with a game ('Happy Birthday');

*Step 2:* The mentors then divided students into six groups, introducing themselves and the group's mentors with a game designed to promote group cohesiveness;

*Step 3:* Each group then decided upon their own group name, group motto, performance identity and individual member function within the group. All students were given science camp handbooks and individual work sheets.

**Phase 2: Eliciting of students' alternative conceptions: parallel activities within three science stations**

This phase used a two-tier diagnostic test for identifying inconsistencies in conceptual understandings students may have with respect to science disciplines. The test questions were adapted by the study researcher and previous camp mentors from published research studies, particularly with regard to science concepts elucidated in standard texts (Hewitt, Lyons, Suchocki & Yeh, 2007) and current websites (Kapu, 2009, Faculty of Engineering & Applied Science, Queen's University, 2012 & Helmenstine, 2012). The two-tier diagnostic test items were selected in conformity with the Plan-Do-Check-Action (PDCA) process. The content validity of the instrument (Creswell, 2008) was confirmed by University colleagues and school teachers.

Three steps were involved in the assessment process:

*Step 1:* Camp mentors demonstrated the required experimental procedures to the camp participants, using the two-tier diagnostic test within each station (for example: **do not** proceed with the experiment as suggested by questions);

*Step 2:* Each student completed a pre-test (a two-tier diagnostic item). Some students were personally interviewed;

*Step 3:* Proceeding from the results of diagnostic testing and the use of data triangulation for validating the assessment results, mentors then divided the students into two categories according to the accuracy of their conceptual understandings:

1. ***Students with Alternative Conceptions:*** These students proceeded to the group experiment with the POE tasks in Phase 3;
2. ***Students with Correct Conceptions:*** These students proceeded with the group experiment, acting as mentors.

The details of questions used in the physics, biology and chemistry stations are given in Figures 2, 3 and 4, respectively:

**Place Figures 2, 3 and 4 about here**

### ***Phase 3: Designing & exploring the science station group experiments***

This phase involved a group experiment based on the Predict-Observe-Explain (POE) task model. The students designed, tested and confirmed the results by themselves. Successful completion of the POE tasks required students' to independently recognise and modify their individual conceptual understandings, a process involving the following three steps:

*Step 1:* Groups of students developed the science station experimental objectives and designed POE scenarios (more than one) by themselves;

*Step 2:* Groups of students tested POE tasks (more than one) and confirmed the appropriacy of the concepts involved, based upon the POE task results;

*Step 3:* Each student completed an individual work sheet in accordance with the concepts he or she had learned in their experiments.

### ***Phase 4: Assessment and Discussion***

The purpose of this phase was to assess the extent of changes in students' conceptual understandings. Changes that had occurred were identified from individual diagnostic post-test, written work and interview results, and also through the use of descriptive statistics (means, standard deviations and percentages) derived from the diagnostic test results. Mentors divided students into two groups as before (those with accurate and alternative conceptions), according to the results of the post-tests. Some students who had alternative conceptions would be asked to repeat Phase 3. There were three steps in this process:

*Step 1:* Groups discussed the experimental results and the correct scientific conceptions underlying the experiment;

*Step 2:* All students completed a post-test questionnaire (a two-tier diagnostic item) and some were interviewed. Those who had alternative conceptions would be asked to repeat Phase 3 and reconsider their answers;

*Step 3:* From the results of diagnostic testing (validated by data triangulation), mentors divided students into three categories on the basis of correct, unclear or alternative science conceptual understandings.

Details of the post-test questions used in the biology and chemistry stations are shown in Figures 4 and 5, respectively. Physics station is used parallel question as the pretest.

**Place Figures 4 and 5 about here.**

### **Part Two: Construction of the science learning stations and science camp evaluation**

This, phase 5, is the final part of the study. After attending all science stations, the camp members constructed their own version of science learning stations for other school students in order to assess their conceptual accuracy in the three sciences represented. The stations were established within the relevant science laboratories or other suitable areas. Each station was equipped with pre- and post-test questionnaires, chemicals or instruments used in the experiments, instructions on how to use the station and the names of the members involved in the station construction. The Learners' Key Competency questionnaire was used to assess students' key competency levels before formal closure of the science camp project. This 10-item questionnaire was compiled by the study author and previous camp mentors via the PDCA process and was based on the five key competencies of the Basic Education Core Curriculum B.E. 2551 (A.D. 2008), (Bureau of Academic Affairs and Educational Standards, 2008). The content validity (Creswell, 2008) of questions used in this instrument and succeeding question scores were verified by experts comprising University colleagues and school teachers. The Lickert scale (Creswell, 2008) used in this instrument features a five interval scale (from strongly agree to strongly disagree). The following three steps were involved in the assessment process:

*Step 1:* Groups of students were selected to make their own science station;

*Step 2:* Each group designed the station format and determined its manner of use through appropriate group activities;

*Step 3:* Groups established their own science stations in the area provided, took photographs within the stations and individually completed the Learners' Key Competency questionnaire.

### **Results**

Results data and data analysis pertaining to the five-phase research design are as follows:

#### ***Phase 1: Orientation***

With reference to the introductory 'Happy Birthday' game, all students were surprised by the correct prediction of member's birth dates. They discovered that they could use such number charts for prediction, and learned how to make a number chart based upon the theory of numbers to the base 2. They had therefore become more receptive to the new experiences accorded by the science station activities. After completing the 'grouping game,' the 75 lower secondary students were subsequently divided into six groups, which then independently decided their own group name, motto, performance identity and individual member roles.

#### ***Phase 2: Eliciting of students' alternative conceptions***

The results from students' answers to the two-tier diagnostic pre-test questionnaire within the three stations were triangulated with data from their written work and personal interviews. The number and percentage of 'pre-instruction' students with correct, alternative or unclear science conceptions are shown in Table 1.

**Place Table 1 about here**

### **Phase 3: Designing & Exploring: Group Experiments within the Science Stations**

Within each station, each group of students designed the experimental procedures and interpreted the results in different ways. The following is an example of the work of student group A in designing and exploring experiments within science station 1 (*'free falling objects'*):

*Objective:* to determine which ball reaches the floor first when two balls are simultaneously released from the same height.

There were three steps in the experimental procedure:

*Step 1:* place two balls, a ping-pong and a tennis ball, on a book at around shoulder height;

*Step 2:* simultaneously release the two balls;

*Step 3:* observe which ball reaches the floor first.

POE2: use ping-pong and plastic balls, at around shoulder height;

POE3: use ping-pong and plastic balls, at around knee height;

POE4: use ping-pong and plastic balls, at around head height;

POE5: use ping-pong and earth (softer) balls, at around shoulder height;

POE6: use tennis and earth balls, at around shoulder height.

Each POE experiment should be replicated 3-5 times: observe and record the results in the work sheet.

*Mentor's comment:* always measure the height of the balls from the base. **Do not** measure height from the middle or top of the balls.

### **Phase 4: Assessment and Discussion: Analysis of Students' Conceptual Changes**

Students' answers to the two-tier diagnostic post-test questionnaires, obtained after completing the science station activities, were triangulated with data from their written work and personal interview. The post-test questionnaire results suggest that the number of students having correct conceptual understandings was higher than that of the pre-test results. The number and percentage of 'post-instruction' students with correct, alternative or unclear science conceptions are shown in Table 2.

**Place Table 2 about here**

Commensurate with the results of their post-instruction conceptual understandings, students were divided into three groups: those with correct, unclear or alternative conceptual understandings. Students who did not improve in this respect after completing the first cycle were required to reformulate their ideas in the second cycle of the station experiment. However, some of these students (from both science stations) continued to hold alternative or unclear conceptions even after proceeding to the second cycle.

### **Phase 5: Construction of Science Stations and Science Camp Evaluation**

Three science learning stations were established within the science laboratory of Ban Phu Pittayasun School by students who decided upon their own station name and experimental procedures. Accordingly, physics, biology and chemistry stations were named *Small or Big*;

*Which Size arrived First?, Determination of Tree Height by Simple Clino and How to Make Foam, respectively.*

The mean scores of the five point scale of the Learners' Key Competency questionnaire reflect students' personal satisfaction ratings with respect to perceived changes in capacity for key competencies after completing the science camp. These data appear in Figure 6 and Table 3.

**Place Figure 6 and Table 3 about here.**

Table 3 lists the key competencies which received an 'agree' response; namely Communication Capacity, Thinking Capacity, and Capacity for Technological Application. Responses of 'strongly agree' were received for Problem-Solving Capacity and Capacity for Applying Life Skills. These responses suggest that the science camp process, based on a constructivist learning paradigm, is useful for developing students' capacities, with respect to the relevant competencies, to a level commensurate with the questionnaire responses.

### **Findings and Implications**

The research findings indicate that, with respect to essential concepts pertaining to three scientific disciplines, students' understandings changed following participation in the science camp learning activities based upon a constructivist approach. The multiple case study design therefore served to enhance students' understanding of concepts in physics, biology and chemistry, and may serve as a promising means for investigating both the *process* of conceptual change and the *influence of conditions* generally supportive of such changes.

Constructivist-oriented activities within science learning stations, using a series of Predict-Observe-Explain (POE) tasks, appear to be a useful facilitator for the achievement of conceptual change. The group activities conducted via the science camp environment resulted in a significant degree of success in rectifying the alternative (inaccurate) conceptual understandings of science students. After completion of the learning activities within the three science stations, most of the students' understandings of science concepts and processes were found to be correct. Validation of the results through the use of triangulation (the use of multiple methods for obtaining data, such as written work, interview, and diagnostic two-tier tests in this case) was important in evaluating students' conceptual understandings before and after science knowledge construction within the context of the science activities, as inferred by the positive results obtained from different data sources. Students' key competencies, gauged from their responses to the five-point Lickert scale of the Learners' Key Competencies questionnaire, suggested that a high degree of students' satisfaction was derived from attending the science camp using a constructivist learning paradigm.

### **Conclusion**

The findings of this study have broad implications for the use of science stations employing constructivist approaches and relevant science camp processes in formal Thai basic education, by providing students with improved opportunities for developing their understandings of essential concepts in the various sciences.

## Acknowledgements

The authors wish to thank 1) the students participating in the Science Camp for Science Stations Project at Ban Phu Pittayasun School, Udon Thani, 2) the students acting as science camp mentors, Science Program students from the Faculty of Education, Udon Thani Rajabhat University for their participation, 3) the expert committee comprised of University colleagues and school teachers, 4) the School administration team, 5) the Head and Staff of the Science Teacher group in Ban Phu Pittayasun School, 6) the Dean of the Faculty of Education, Udon Thani Rajabhat University, 7) Iain Riach, my research editor from Faculty of Science, and 8) my wife and children who provided help and support for this research.

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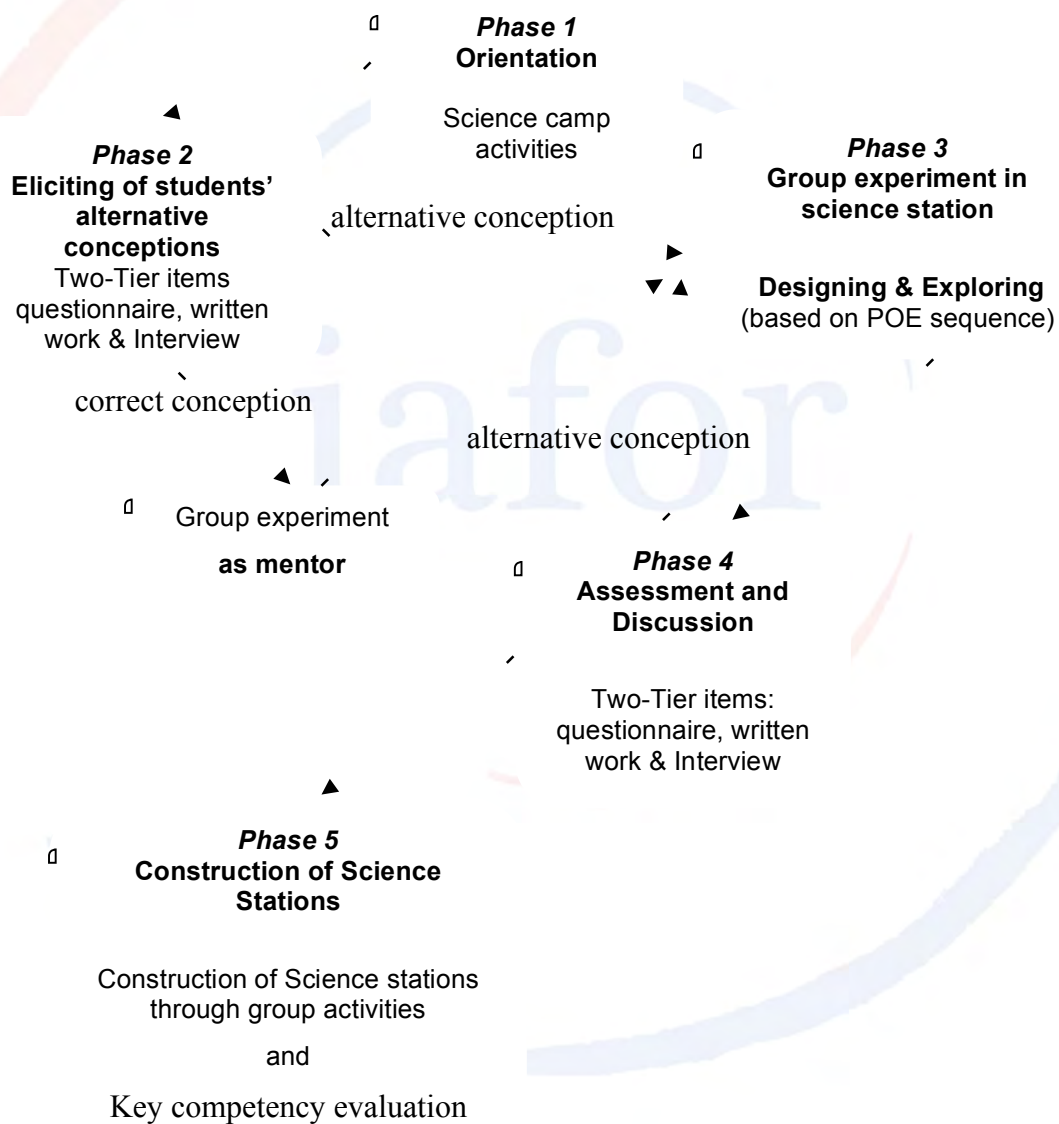
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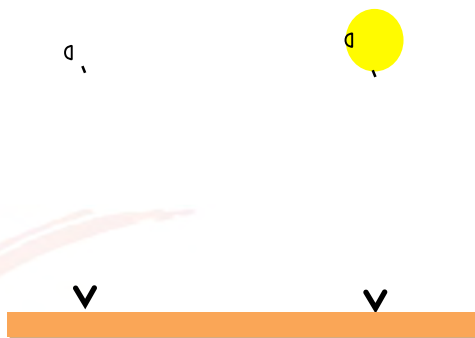


**Figure 1: Flow diagram showing group activities within science stations used to modify students' alternative conceptions**

## SCIENCE STATION 1

### Physics: Pre-test (adapted from Kapu, 2009)

• **Scenario:**



**Question 1:** If two different balls, eg ping-pong and tennis balls, are simultaneously released at the same distance from the floor, which ball reaches the floor first?

**Assertion**

- 1) ping-pong ball
- 2) tennis ball
- 3) \*simultaneous arrival
- 4) cannot conclude with *because* certainty

**Reason**

- a) The heavier material moves faster than the lighter material;
- b) The larger sized ball has more wind resistance than the smaller one;
- c) The softer material moves more easily against the wind than the more rigid one;
- d) \*The rate of free fall is independent of the mass of material.

Your descriptive details: .....

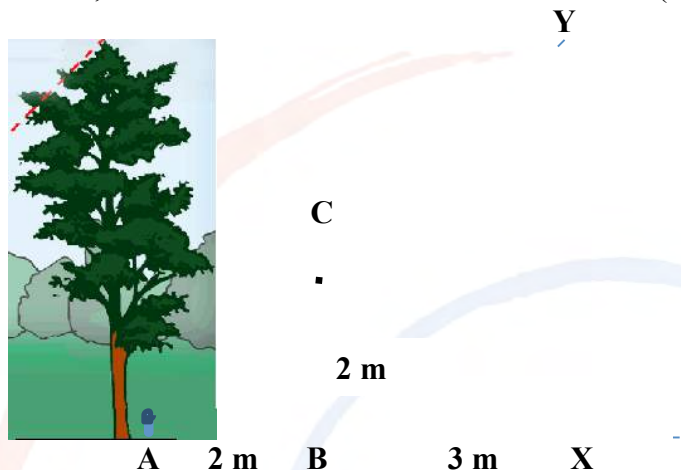
\* *Correct answer*

**Figure 2: Two-tier item question for free falling material: Physics (translated from Thai version)**

## SCIENCE STATION 2

**Biology: Pretest (adapted from** Faculty of Engineering and Applied Science, Queen's University, 2012)

• **Scenario:** In the figure below, the can (point A) is at the end of the two shadows formed by the top of the wall (point C) and the top of the tree (point Y). The height of the wall (BC) is 2 metres, the same distance from the wall to the can (AB).



**Question:** If the distance (BX) from the tree to the wall is 3 metres, what is the height (XY) of the tree in metres?

### Assertion

- 1) 4
- 2) \*5
- 3) 7
- 4) cannot calculate accurately

*because*

### Reason

- a) ABC is an isosceles triangle.
- b) \*Triangles ABC and AXY are related as 'two similar triangles.'
- c) Triangles ABC and AXY are related as 'two triangles equal in all respects.'
- d) Triangles ABC and AXY are not related to each other.

Your descriptive details:.....

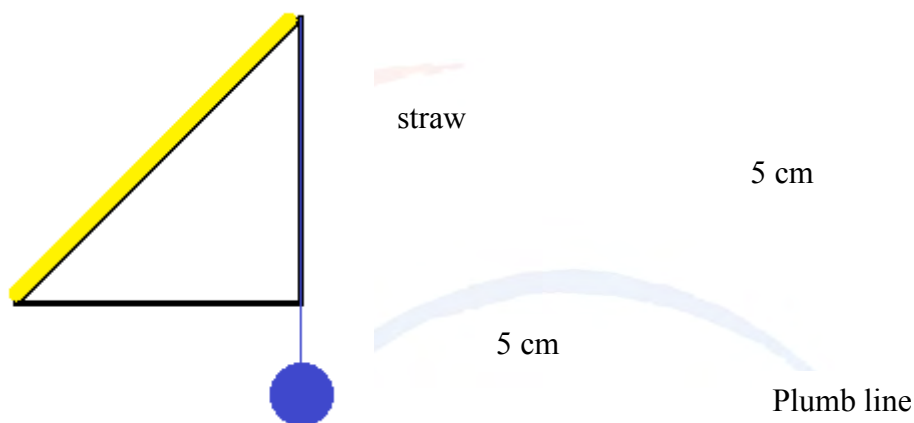
\* *Correct answer*

**Figure 3: Two-tier item question for the tree height: Biology (translated from Thai version)**

## SCIENCE STATION 2

### Biology: Post-test

• **Scenario:** Mr. Black determines the height of a tree with his newly- invented clinometer. A simple clinometer is shown in the figure below. The two sides of the right angle are each 5.00 cm in length:



**Question:** When Mr. Black looks at the top of the tree through the hollow straw, his feet are 5 metres from the tree. If the distance between his feet to his eyes is 150 centimetres, how high is the tree in metres?

#### Assertion

- 1) 5.0 metres
- 2) \*6.5 metres
- 3) 7.5 metres
- 4) cannot calculate accurately

*because  
the simple  
clinometer*

#### Reason

- a) is an isosceles triangle.
- b) \*is based on the rule 'The two triangles are similar.'
- c) has no relation to the tree height.
- d) is based on the rule that 'The two triangles are equal in all respects.'

Your descriptive details:.....

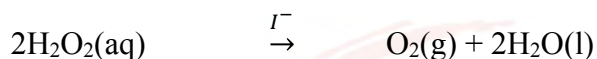
\* *Correct answer*

**Figure 4: Two- tier item question for tree height (biology): (translated from the Thai version).**

### SCIENCE STATION 3

#### Chemistry: Pretest and Post-test (adapted from Helmenstine, 2012)

- **Scenario:** A reaction is a process of change that forms new substance(s) which have properties different from the original substances, or reactants. For example, the decay reaction of hydrogen peroxide ( $\text{H}_2\text{O}_2$ ) in the presence of iodide ion ( $\text{I}^-$ ) as catalyst forms oxygen gas ( $\text{O}_2$ ) and water ( $\text{H}_2\text{O}$ ). The reaction proceeds as follows:



- **Scenario:** Given: Substance A consists of a 30%  $\text{H}_2\text{O}_2$  solution, 40 mL;  
Substance B is liquid dish washing detergent, 80 mL (for capturing gas bubbles);  
Substance C is crystallised potassium iodide (KI), 10 g (which acts as a chemical catalyst).

**Question 1:** If we conduct two experimental procedures inside 1000 mL cylinders as follows:

*Procedure I:* mix A and B, then C;

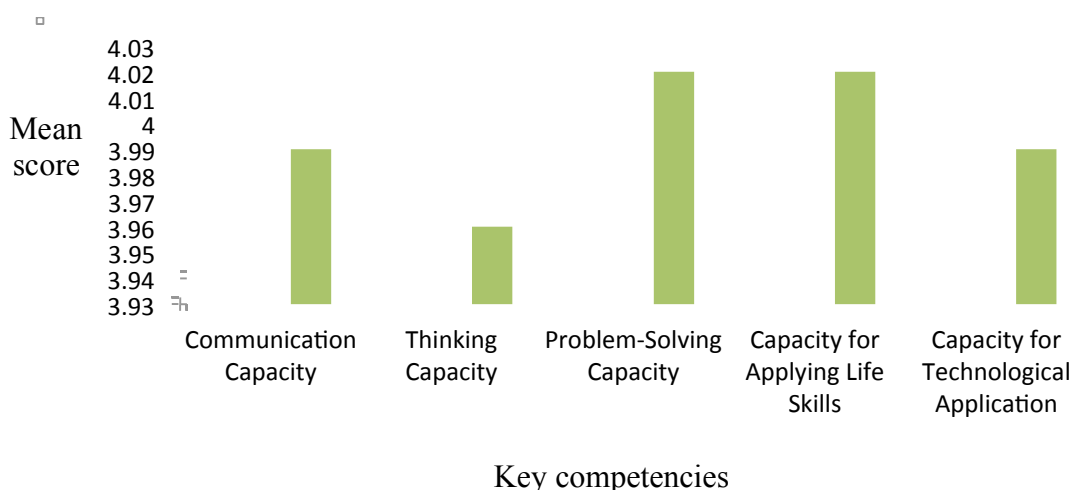
*Procedure II:* mix B and C, then A; what are the results of two reactions?

Assertion		Reason
1) the same results		a) the two procedures used the same reactants.
2) different results		b) when mixing reactants in each step, new product(s) are always formed.
3) *different results while reacting but the same end products	because	c) the reaction mechanism is not consistent.
4) cannot conclude accurately		d) *different mechanisms will be involved in the reaction pathways, but the final product is the same.

Your descriptive details: .....

\* *Correct answer*

**Figure 5: Two-tier item question for elephant toothpaste: Chemistry (translated from Thai version).**



**Note:** 1-strongly disagree, 2- disagree, 3-Neutral, 4- agree 5- strongly agree

**Figure 6: Comparison of mean scores for learners' key competencies (N=39)**

**Table 1: Results of students' pre-constructed conceptions, focusing upon level of understanding**

Level of Understanding	Science station 1		Science station 2		Science station 3	
	Number of students	%	Number of students	%	Number of students	%
Correct conception	1	1.78	19	37.25	18	40.91
Unclear conception	3	5.36	24	47.09	12	27.27
Alternative conception	52	92.86	19	37.25	14	31.82
Total	56	100.00	52	100.00	44	100.00

% = percentage

**Table 2: Results of students' post-constructed conceptions, focusing upon level of understanding**

Level of Understanding	Science station 1		Science station 2		Science station 3	
	Number of students	%	Number of students	%	Number of students	%
Correct conception	33	63.46	42	82.36	21	48.84
Unclear conception	5	9.62	4	7.84	8	18.60
Alternative conception	14	26.92	5	9.80	14	32.56
Total	52	100.00	51	100.00	43	100.00

% = percentage

**Table 3: Mean scores, standard deviations and personal ratings of students' key competencies (n=39)**

<b>Key Competency</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Rating</b>
<b>Communication Capacity</b>	3.99	0.90	agree
<b>Thinking Capacity</b>	3.96	0.99	agree
<b>Problem-Solving Capacity</b>	4.02	0.82	strongly agree
<b>Capacity for Applying Life Skills</b>	4.02	0.86	strongly agree
<b>Capacity for Technological Application</b>	3.99	0.90	agree

*Multicultural Aspects in Elementary School Textbooks, and Teachers in Japan: An Investigation of Living, Learning, School Activities and Community Life*

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Utsunomiya University, Japan

The Asian Conference on Education 2012

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## Introduction

The ultimate goal of Multicultural education is to enhance equitabilities in a diverse society. Moreover, critical multicultural education is a way to provide members of the society with equal opportunities regardless of religion, race, gender, etc. We believe that a democratic society must embrace critical multicultural education or fall behind other nations which do. This study investigates the way in which multicultural education has been provided for minority children in Japan by looking at diverse and equitable practical factors in *living* (abr., L1), *learning* (abr., L2), *school activities* (abr., SA) and *community life* (abr., CL), combined as LLSC.

In this study, we argue that educational policy writers, textbook authors, school administrators, teachers, minority parents and in fact the entire society need to work together to create a multicultural educational system. The purpose of this study is to critically analyze essential multicultural elementary school textbooks and teachers consciousness in order to provide the LLSC for minority children in a diverse society.

## Theoretical backgrounds

Every child has a different social background. In comparison to past decades, it is argued that the differences in living, learning, school activities and community life for a minority child are not as great as they used to be. However, many people are still concerned that differences in social context are confusing for minority children in non-inclusive societies. Bennett (1995) has pointed out: "Differences in communication methods, class participation, and world view enter the classroom when students and teachers represent different ethnic groups and/or different nationalities, although both cultural and racial differences might be an important source of transitional trauma, misunderstanding, and conflict in the classroom" (p.77). Grant and Sleeter have also studied the effects of differences in culture, language and gender in education: "A central idea behind the cultural difference orientation is cultural continuity. Anthropologies have documented that discontinuities between one set of cultural practices and another can be confusing to the individual who must make a rapid transition between the two different sets" (2003, p.49).

The development of children depends on diverse and equal contexts. Nieto (2000) argues: "Affirming diversity is not enough unless we also challenge inequitable policies and practices that grant unfair advantages to some students over others, moreover,

simply tackling issues of racism and discrimination at the school level does little to change the broader context” (p.345). Another theorist, Bennett (1995) also indicates that equity “is not only a matter of bettering our country’s educational system. It is required if we value this nation’s democratic ideals: basic human rights, social justice, respect for alternative life choices, and equal opportunity for all” (p.20). According to Bank (1993), a major goal of multicultural education, as stated by specialists in the fields, is to reform the school and other educational institutions so that students from diverse racial, ethnic, and social-class groups will experience educational equality. Do minority children receive advantages from majority children in a diverse society? Unfortunately, it has been argued that many children with majority social and cultural background still have stereotypes and prejudice toward to children with minority social and cultural backgrounds. Bank says, “An important factor that limits human freedom in a pluralistic society is the cultural encapsulation into which all individuals are socialized” (1994, p.1).

In this research, we employ the approach of critical multicultural education which takes place in diverse and equitable multicultural education, and research ways to provide equal opportunity and access to minority children not only in majority educational implementations but also in the majority society including living, learning, school activities and community life.

### **Conceptual framework**

Many ideas and concepts of multicultural education have been developed in various educational studies. Canada and the United States were known as a "melting pot" until the 1980s and a "salad bowl" from the 1990s onward due to their history of assimilating various cultures and ethnic groups. In addition, the European nations developed multiculturalism with cheap minority laborers and their families especially from African and Asian nations in past centuries. Therefore, most Western democratic countries developed their own multicultural education style earlier than Japan. The most important point is that in the future we need a larger variety of concepts and theoretical frameworks in the field of multicultural education. Since Japanese society is getting more diverse and dissimilar, simplification can not be applied as in past decades.

In this study, several new concepts appear, such as the environmental and human factors which were discovered in theoretical orientations of ICF (International Classification of Function, 2001, from World Health Organization).<sup>1</sup> ICF consist of body functions,

structures, activities, participation, environmental factors, personal factors, health condition, and functioning. We apply these factors to our study as living (abr., L1), learning (abr., L2), school activities (abr., SA) and community life (abr., CL), combined as LLSC. As the primary ICF functions are based on patients who need rehabilitation and disabled children/people, there is a need to further discuss, consider and examine from a critical perspective the effect of factors on multicultural education.

The concepts of ICF and LLSC are similar in their ideas of diversity, equity and difference. For example, “In order to achieve equality of educational opportunity, knowledge and understanding about differences, develop competencies in multiple ways of perceiving, evaluating, believing, and doing and reduce prejudice and discrimination” (Bennett, 1995, p.14). Sleeter and Grant also argued for “Main streaming and inclusive education with exceptional children who have mental and physical differences when teaching the exceptional and the culturally different” (2003, p.39).

According to Sleeter and Grant (1987), much of the existing literature addresses only limited aspects of multicultural education.<sup>2</sup> The literature has developed a taxonomy by which to define the term, to examine how the term has been used, and to criticize various approaches for their shortcomings and insights. The literature also address several categories, e.g. teaching the culturally different, human relations, single group studies (they mean an ethnic group in 1987), multicultural education, education that is multicultural and social reconstructionist by goal, language, culture, social stratification, gender, social class, handicap, history, political and legal issues, instructional modals, curriculum, instruction, teaching guide and project description. Thus, we would like to define human relation factors and social environment factors related to a critical perspective on multicultural education. Moreover, the LLSC factors are based on diversity and an equitable critical multicultural education which means that the knowledge is based on an understanding and acceptance of difference.

In this study, we refine my ideas from some of their approaches (categories) to LLSC of multicultural education. We believe that these factors are certainly helpful for rethinking prospective multicultural education since LLSC has the function to help ease understanding between different groups. In addition, both the research of Sleeter and Grant (1987) and LLSC possess similar views on concepts such as diverse and equitable supports for minority children, school teachers, parents, local governments, etc. Moreover, it is concerned with social formulations such as culture, history, policy,

curriculum design and pedagogies. This study seeks to rethink multicultural education in Japan. The definition of LLSC is as the following.

**a. Living (L1)**

The factor of L1 focuses on personal factors of minority families, e.g., cultural background, family history, as well as the comparisons of these factors with majority families. Moreover, L1 includes psychologies approach such as self-consciousness, self-expression, self-determination, and the problems of living in Japan.

**b. Learning (L2)**

L2 focuses on language problems, bilingual and capacity of academic skills at school. Some minority children can easily solve language problems in the classroom by actively communicating with teachers and friends while some minority children have difficulties not only in communication but also writing, especially in learning Japanese characters.

**c. School activities (SA)**

The factor of SA focuses on events and activities hold by the school, including communication between teachers and parents, teacher parent conferences, and participation of after school activities. In SA, We deal with how to make a good cooperate program between parents, teachers and minority/majority children in a class or school.

**d. Community life (CL)**

The factor of CL focuses on the communication within local communities. We asked participants about a number of factors related to CL, including the need for a multicultural center, and local Japanese language lessons. The primary concern of CL is: How can ethnic minority people easily communicate within local community and gather information from the local government? It is important for minority families to join the local community and get information from the local government.

**Multicultural aspects in elementary school textbooks**

Students are rarely invited to reflect critically on their own schooling and learn to accept inequality as normal and textbooks and school curricula fail to encourage students to ask an assortment of critical questions (Bigelow, 2004, p135). Especially, East-Asian students strongly influenced from nationalism, homogeneous, and non critical thinking from their education system in past decades. Since its earliest

conceptualization in the 1980s, ideas about international education, global education, inclusive education, human right education, ethnic education have been spreading in East-Asian nations. With the rapid increase of the number of immigrant children in schools and Japanese society, more support for international children and families communities is needed (e. g. using two languages in education or the presence of a multicultural education coordinator in school and in society) to help children into the critical local multicultural education system. Japan has recently experienced important shifts in what was once seen as a stable, homogeneous, and orderly social environment, foremost among the challenge facing Japanese society are those involving the educational system, educational concepts, and educational philosophy (Willis and Yamamura, 2002, p1).

### **Data procedure**

The first type of methodology is a critical textual analysis. A critical textual analysis is different from a narrative textual analysis, which tends to trace a series of events. The critical textual analysis in this study involves first collecting a large number of texts which describe multiculturalism and multicultural education for foreigners in the Japanese elementary school textbooks mainly three published companies in 2011. A detailed methodology showed in Table 1.

Table1.Categories for LLSC analyzed by elementary school textbooks

<b>A, Syogakusyakai</b> <b>Published by Kyoiku Syupang, Tokyo</b>	<b>B, Atarashiisyakai</b> <b>Published by Tokyo Syoseki, Tokyo</b>	<b>C, Syogakusyakai</b> <b>Published by NihonBunkyo, Osaka</b>
A, Syogakusyakai was compiled under the supervision of 2 professors. 31 professors and 6 elementary school leaders wrote on each subject in the textbook.	B, Atarashiisyakai written by 29 professors and 11 elementary school leaders and school teachers.	C, Syogakusyakai written by 18 professors, 4 school leaders and 1 member of the educational center.
The main contents of the 3rd and 4th year books include: "Our Town", "Our shopping", "Production of goods" and "Traditional living style" (303/304). The main contents of 5th year books are: "Daily Life and Country", "People Who Make Food", "Living and Information", and "People Who Protect the Environment" (503/504). The main content of the 6th year books is: "Living Policy in Japan and the World" (603/604).	The main contents of the 3rd and 4th grade textbooks include topics such as: "My Machi", "Our Machi", "Working People in Our Society", and "Our Prefecture" (state) (301/302). The main topics in the 5th grade textbooks are:) "Our Living and Factories", "Living and Information", "Living and the Environment" (501/502). The main topics in the 6th grade textbook are: "Japanese History", "Policy, the World and Japanese Rules" (601/602).	The main contents of the 3rd and 4th grade textbooks include topics such as: "Living Area" (city), "Old Times and Today", "Better Living and Safe Living", and "People Who Help to People" (307/308). The topics of the 5th grade text include: "Living in Japan, "Our Food and Food Products", "Our Living and Developed Factories", and "Information about the Environment" (507/508). The main contents of the 6th grade textbooks are: "Japanese History" and "Policy and the World" (607/608).

LLSC ANALYZING

$$L1 = r^1, e^1, g^1, r^2, p^1, \dots, L2 = 1^1, b^1, a^1, s^1, \dots$$

$$SA = c^1, p^1, s^1, t^1, t^2, \dots, CL = c^1, c^1, n^1, s^1, \dots$$

$$LLSC = L1+L2+SA+CL$$

<b>Living (L1):</b>	<b>Community Life (CL):</b>
<ul style="list-style-type: none"> <li>➤ Food from where? (64,65,89p, K-303)</li> <li>➤ Let's introduce Japanese food to foreigners (101p, K-503)</li> <li>➤ Interviews with Japanese workers abroad (131p, K-503).</li> <li>➤ Disabled people and old people in factories (147p,K-503)</li> <li>➤ Japanese and European (61p, K-603)</li> <li>➤ Japanese immigration (115p, K-603)</li> <li>➤ Why Korean and Chinese came to Japan? colony problem (121p, K-603)</li> <li>➤ The variety housing in other nations (51p, N-507)</li> <li>➤ The laborers in Japanese factories (35p, N- 508)</li> <li>➤ Human rights (a discrimination about Ainu and Korea (N-608)</li> </ul>	<ul style="list-style-type: none"> <li>➤ Fukuoka city and many nations (159,161p, K-304)</li> <li>➤ The world map (K-503)</li> <li>➤ Kobe city and the world (154-155p, T-302)</li> <li>➤ Okayama prefecture and the world (153p,N-308)</li> </ul>

In table 1, we analyzed by LLSC data processing. For the first step of LLSC analysis, we established each symbol, which is easy to understand and analyze such as L1 = r1 (race and human rights), e1 (ethnic), g1(gender and disability), r2 (related to living, food, building, and so on), p1 (psychology such as self-expression and self-determination)....., L2 = l1 (language), b1 (bilingual), a1 (academic skills), s1(socio-cultural learning)....., SA = c1 (curriculum), p1 (pedagogy), s1 (school system), t1 (teacher and classmate), t2(textbooks)....., CL = c1(communication between minority and majority society), c1(cooperation between majority society and minority society), n1 (network and partnership), s1(sharing and understanding between majority and minority society)....., The following step was to divide LLSC into collections for the setup of categories.

## Results

According to the MEXT website (Japanese national Ministry of Education, Culture, Sports and Technology hereafter, MEXT), especially in the document of 2007, *Chuokyoiku Simgikai* (The Central Council for Education, hereafter CCE) organized a discussion time for social studies in elementary school and junior high school. In their paper, they examined the general outline of social studies in elementary schools. According to arguments in the CCE paper, there exist a lot of differences in the world, and therefore "Japanese children must be curious about the differences." They go on to suggest actively teaching these differences in social studies class in the 3rd and 4th grades of elementary school.

However, according to our data, these activities only appear in only 11% of the textbook contents (LLSC analysis of 16 Japanese elementary text books, 14 times. Sum total: 126). Multicultural aspects are focused on especially in L1 and CL. For example, in L1, Food is from where? (p. 64, 65, 89, K-303), Lets introduce Japanese food to foreigners (p.101, K-503), Interview with Japanese worker in abroad (p.131, K-503), Disabled people and old people in factories (p.147, K-503) Japanese and Europeans (p.61, K-603), Japanese immigration (p.115, K-603), Why Korean and Chinese moved to Japan? (p.121, K-603), The variety housing in other nations (p.51, N-507), The laborers in Japanese factory (p.35, N-508), Human Rights (discrimination about Ainu and Korea) (N-608). In CL, Fukuoka city and many nations (p.159-161, K-304), The world map (K-503), Kobe city and the world (p.154-155, T-302), Okayama prefecture and the world (p.153, N-308).

As you can see from table 1, this LLSC analyzing is based on several sub-categories (keywords) and analysis was implemented 3 times. Moreover, table 1 showed that A, *Syogkusyakai* (*Kyoiku Syupang*) > C, *Syogakusyakai* (*NihonBunkyo*) > B, *Atarashiisyakai* (*Tokyo Syoseki*). It clearly shows which publisher has more multicultural aspects included in the contents. However, each textbooks series has common textbook aspects such as knowing about *Machi*, kinds of working, visiting factories, and so on. Also, table 1 shows that the editorial committee of each book series includes only university professors and school leaders (c has one member of and educational center).

We analyzed elementary school textbook contents and noticed the following. Firstly, there are plenty of times where the words 'we', 'our' or 'us' (*minnano, watasitachi*) are used rather than 'I', 'my' or 'me' (*watashi*). For example, our street and our city, our shopping, our living and so on. Secondly, the focus is on pride in Japanese culture, for example, Japanese food is claimed to be healthier than other nations as well as higher quality (concern about whether international products are safe or not), Japanese industry is praised ("made in Japan", famous Japanese car industries) and so on. Thirdly, international contents are divided three ways: image, relationships between countries, and roles in the world. The contents are focussed on what Japanese culture gives a good impression to foreigners, which nations have good a relationship with Japan today and what the Japanese role is in the world (UN).

Lastly, Japan is in the midst of school reform (Komatsu, 2002), and their curriculum and school textbooks are seems to emphasize the principle of developing more international awareness. We hope all schools have these goals and move toward diversity, difference and equity.

### **Multicultural aspects in teacher's consciousness**

In Japan, the elementary school standard curriculum (from MEXT) established an intercultural class time and they have been using so-called '*Gaigokugo katsudo*' (Time for Foreigners language) and '*Sogotekina Gakusyuno Zikan*' (a synthetic time) and/or society class. According to the Japanese elementary school standard curriculum, they planned to gain intercultural experience and understanding to Japanese children who do not understand different cultures (2008, p107).

The interesting part of the standard curriculum was that the main activities are learning English and they are still not using terminology such as 'multicultural', 'diversity', 'equity' and 'difference' in their teaching contents. They are using only 'a term of international understanding' from 1980 in their curriculum, although there are more than 80,000 minority children living in Japan today. With this attitude, the Japanese government acts as an outsider who does not consider multicultural education as one of its responsibilities. The Japanese school standard curriculum contains a dubious attitude in its contents. We believe they should seek to critically explore a multicultural education system in Japan for teachers and minority families/children to have a multicultural society in the future.

### **Survey data**

This article is intended as an investigation of LLSC of multicultural education in public Japanese elementary schools. The methodology proposed here is a questionnaire which consists of four parts (LLSC) with 43 questions (with scores from 2 to 4). These were distributed to public elementary school teachers in Japan. We sent 500 surveys (questionnaire form) to elementary schools attached to teaching training colleges in *Hokaido, Tohoku, Kanto, Kitasinsyu, Tokai, Kinki, Chugoku, Sikoku* and *Kyusyu* prefectures. The participants were 80 elementary school teachers and the data was gathered from December, 2011 to January, 2012. The aggregate rate of the survey was 16% (80 out of 500 surveys were returned).

The basic profile information of the participants is shown as following. This questionnaire was a qualification survey item. 72.8% were male elementary school teachers and 26% were female elementary school teachers (1.2% no answer). The age groups were, 4x years old (46.4%), 3x year old (35.2%), 5x year old (15.4%) and 2x year old (3%). More than 40% of the Japanese elementary school teachers (hereafter referred to as J teachers) are interested in multicultural education, however nearly 10% of the J teachers answered that they are not interested in multicultural education.

Moreover, 40% of J teachers did not understand exactly what the meaning of multicultural education is. Only 20% of teachers understood the meaning of multicultural education. Also, only 18% of J teachers had participated in a multicultural education seminar. About 45% J teachers had no positive thoughts of multicultural seminars, conferences, books and such. As a more inclusive and accepting multicultural environment is needed for minority children, we believe that teachers have to try to gain

more information and knowledge of multicultural education, as otherwise minority children have no equal chance to go to elementary schools attached to teaching training colleges.

#### **a. Living (L1)**

In L1, we asked 10 questions related to personal information, minority identity, culture, living style and others to J teachers. Most J teachers had a lack of personal information about the minority children's background. The results of L1 are the following: J teachers think that minority children need some support from them. Also, 47% of J teachers answered there were no problems with the identity of minority children in their classroom. On the other hand, they answered that the minority children have problems with social relationships, self-expression and others.

Also, they marked that the biggest problem of minority children is communication for daily life. They say, although the minority children learn to speak Japanese language very quickly; reading and writing of *Kanji* (Japanese characters) is difficult up to a point where some children cannot acquire this skill. They wrote that minority children have different living styles at home, different food and a different language. That is why it is too difficult to teach a different living style for them as a Japanese teacher.

#### **b. Learning (L2)**

In L2, we asked 10 questions related to language and academic skills to J elementary teachers. Most J teachers answered that the biggest issue is language, especially writing Japanese characters. According to J teachers, generally young minority children learn Japanese very quickly. However, they have problems writing Japanese characters. 65% of the J teachers hope to have a personal J teacher for minority children in a special classroom. From our aspect, the most interesting answer was that only 20% of J teachers answered the bilingual question, such as what is the meaning of bilingual or have you ever heard the term bilingual? Moreover, the important thing they answered is that they do not need a new political system for bilingual education in their country.

#### **c. School activities (SA)**

In SA, we asked 10 questions related to the need for school activities, counseling with minority parents, sharing information with classmates, problems in the Japanese standard curriculum, school system for minority children and others. Through SA we hope for active cooperation between minority and majority children, teachers and parents. According to J teachers, they had difficulties connecting with minority

children; however they do not know how to deal with this problem, how to understand each other and/or what their needs are. Only 4 J teachers answered that they could deal with this problem. Besides, only 7.5% J teachers took time for counseling with minority parents. Most J teachers answered that there is no need for counseling time with minority parents.

#### **d. Community life (CL)**

The factor of CL is related to how to connect in social communities, partnership programs between minority families, local government and school teachers. In CL, we asked 10 questions to J teachers and the results are as follows: 61% of the J teachers do not exchange or share information with local education centers or local multicultural centers. Also, 70% of J teachers hope to make a community education program that unites minority parents, teachers and local government. The most interesting point of CL is that the majority of J teachers (70%) hope to make a multicultural society. However, they do not consider it absolutely necessary to make a new multicultural education law and a political system for the future, as indicated by the results, 'we do not need any new system' (22%) and 'we need a slightly new system' (32%). Finally, we asked the reason 'why multicultural education does not progress in Japan today?' 50% of the J teachers answered that 'it is the recognition of the Japanese society', 19% of J teachers answered that 'it was because of the social system such as nationalism laws and the social environment'.

#### **Conclusion and discussion**

As survey data in 2010, a lot of elementary school teachers wrote that 'the needs of multicultural education research for social studies. According to the their answers the main reason were "Because with increasing of international social studies textbook, they want to teach with view of international awareness, however, it is too difficult to teach international ways" , "It was difficult to explain their country (the minority children`s country) because their country was not good in the history"

In this article, we attempted to analyze the LLSC (living, learning, activities at school, and community life) with diverse and equitable support as one of the methodologies. Using the LLSC we found it easy to understand the needs of multicultural education for elementary school teachers. Moreover, also it was easy to discover the big questions and main issues related to multicultural education in their school textbooks.

The limitations are as follows. Our investigation was based on a survey which was answered by 80 Japanese elementary school teachers and only 16 school textbooks. Furthermore, we would like to point out that there is ambiguity in the four factors of the LLSC. One could argue about whether certain aspects should be in one of the factors (for instance living) or in another factor (e.g. learning).

Finally, a global and local perspective of multicultural education enables us to create a diverse and equitable society that respects each individual. In other words, critical multicultural education is based on a diverse and equitable society. Japanese multicultural education has not progressed in laws, curriculum, textbooks and teacher's understanding compared with other democratic developed nations due to the factors mentioned in this article. We have learned that we to consider a more diverse and equitable methodology for multicultural education, it is absolutely necessary to cooperate with teachers, policy writers, textbook authors, parents and all children.

### **Acknowledgements**

We are sincerely grateful to the Japanese teachers of elementary schools attached to teaching training colleges, some public elementary schools and officials who cooperated with the present research from 2011 to 2012.

### **Notes**

1. WHO established the ICIDH (International Classification of Impairments, Disabilities, and Handicaps: A Manual of Classification Relation of Disease) from 1980. Especially ICF (2001), ICFCY (2007) (International Classification of Functioning, Disability and Health) is revised to use not only health but also, education including curriculum, right, living, inclusion, diversity and equity. ICF model consist of body functions/structures, activities/participation, environmental factors, personal factors/ health condition/ functioning and these factors. In this research, ICF and LLSC are one kind of methods achieve way of understanding and communicating between two comparative groups with diversity and equity. (You can check more ICF related research such as model and checklist from [www.who.int/classification/icf/en](http://www.who.int/classification/icf/en))
2. Two authors review literature which claims 'multicultural education' as its subjects; they argue that much of the existing literature addresses only limited aspects of multicultural education from Sleeter & Grant .(1987). An analysis of multicultural education in the United States. *Harvard Educational Review*, Vol.57, No.4

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*Learning and Physical Environment Relationship Explored Through Primary Schools  
in Pune*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

In the globalization, Schools are changing their images with the change in socio-economic scenario, change in materials & technology. School buildings are second home for children at age group of 3-9 years. School environment quality matters especially physical environment .it is an important component contributing to quality of learning environment. It is our responsibility to create conditions for advancement of the intellectual and psyche growth.

The pilot study carried out is organized in three parts .The first part is research review identifying physical environment characteristics and second part gives information about school in Pune municipal area .In this paper, we wish to find out the relationship between spatial characteristics of built environment and students learning. The paper concludes by suggesting that understanding of contribution of architectural design and students learning process is important.

Key words: -- *child psychology, school spaces, interrelationship.*

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## INTRODUCTION

Primary school is an educational and social place that children experience and enjoy during school hours, they interact with educational and related space along with transitional space. Learning at school is formal with systematic teaching; but learning also occurs even in places that are not designed especially for structured learning.

There is continuous research going on related to physical environment; the same with research into teaching pedagogies but research into learning and physical environment needs more attention.

Physical environment or architecture affects learning; this has been researched with a single variable – the environmental factors such as noise, temperature, air quality, heating, ventilation and lighting (Higgins et al. 2005, C. Weinstein 1979). There is also part of research focuses on significance of colour, interiors and physical environment, making learning environment conducive to learning (Dudek 2001, Nair 2007). Researchers and planners have demonstrated that use of daylight also increases students outcome (Tina Haghighat and Aziz Bahauddin)

Surveys regarding current school environment have not been so specific about inter relationship between physical environment and learning specially in Indian context; Reggio Emilia's notion for physical environment as a third teacher needs more attention from this point of view.

Dutch architect Herman Hertzberger whose contribution regarding school architecture is valuable puts it as;--a thing exclusively made for one purpose suppresses the individual because it tells him exactly how it is to be used. If the object provokes a person to determine in what way he wants to use it, it will strengthen his self identity. Merely the act of discovery elicits greater awareness. Therefore a form must be conditioned to play a changing role (ref)

### Environmental Psychological Approach

Environmental psychology focuses on people, place i.e physical environment in learning and people using it and development of the same. It's universal assumption/belief among educators that physical environment has an effect on behaviour, achievement and performance of student (J. Lackney). Research findings were summarized according to six major categories of school building environment. The first three categories are concerned with basic interface between educational program, its basic philosophy and the physical design of building –nontraditional instructional space, school size, density (J. Lackney, C. Weinstein, King & Maran 1979)

Environmental psychologists have been more concerned about interaction between children and teacher with each other within the context of physical environment but environmental design approach talks about the comfort of users issues related to physical dimensions.

The learning environment can be conceptualized as a series of relations between educational administration and administration procedures, teacher –student interaction, student –student interaction and school building within which all these happens.

## SCHOOL ARCHITECTURE IN INDIA---AN OVERVIEW

School architecture India display a variety as far as physical environment is concerned from ancient era –Gurukul system, pre independence education system up to education for all as a government policy today. India is progressing in 21<sup>st</sup> century. Primary education has been declared as a right for

every child under government funding a special move is undertaken as Sarva Shiksha Abhiyan (SSA) along with many private schools started offering primary schools.

Primary educational education comprises learning of child from age 3-12 years .attempts are made throughout India that every child must have elementary education so number of schools have increased noticeable .This planned expansion raises a question about the quality of physical environment and its role in learning, shaping child behaviour, increasing social interaction .Undoubtly role of teacher, teaching methodology is important but physical can be ignored

Education is an investment so governments of India along with state government of India fund the primary school schools for building infrastructure, development of same, additional facilities like labs, library and midday meal. In 11<sup>th</sup> five year plan, www crores are allotted only for building schools, no. of classrooms. Therefore this relationship if studied in detail will improve a primary school making a comfortable and friendly second home; where they spend almost eight hours a day .there is difference still exists but with communication facilities improving.; this gap will be soon less .so studies regarding both types need special attention .not just classification schools are further categories per their management (stakeholders) and funding schools are categorized as below:--

#### PRIMARY SCHOOLS



#### PUNE

Pune is Ninth largest metropolis in India and second largest in the state of Maharashtra .also referred to as cultural capital of Maharashtra .Pune is an educational hub with almost www primary schools to nine universities, largest number of higher educational campuses referred AS Oxford of East .first school for girls started in Pune way back in 19 th century, pioneering this primary education movement. Public schools (locally known as municipality schools) are run by Pune Municipal Corporation; private schools are run by educational trust or individual .they are usually affiliated to state board of education (SSC) or national board of education (CBSE).Pune municipal corporation admeasures about 243 sq.km with its core area and surrounding 35 villages merged into it .in PMC area there are approximately ww schools.

#### Schools in Pune

This pilot survey conducted by researcher with few basic indicators of school building s which are described as per local byelaws the basic component of physical environment if assessed needs few quality indicators .this is been done with reference to following:--

- 1) General ideas and elements of building emerged from architectural evaluation
- 2) Opinions expressed by CABE (British commission for architecture and built environment) OECD centre for efficient learning environment CELE) and Prakash Nair J.Lackney at design share
- 3) Common Wealth Assessment of Physical Environment (CAPE)

This data collection gave insight into a useful list of quality indicators of physical environment satisfying needs for all, providing health, safety and also satisfying educational norm. Researchers also indentified few indicators regarding 21<sup>st</sup> century's development, any sustainability measures changing social conditions flexibility with reference to teaching methods.

	Elements	Urban School--Aided	Urban School—Non Aided
<b>Physical Context</b>	School location	Majority city core	Within suburban area
	Distance from home	6 kms max– travelling distance.	6-8 kms – travelling distance.
<b>School Context</b>	School size -- Density	1000-1500	500-1500
	Student -teacher ratio	Varies from 1:30 to 1:65	Minimum 1:25 to maximum 1:50
	Girls: Boys ratio		
<b>Social Context</b>	Friendship		
	Sense of belongingness		
<b>Building age</b>	School as a whole	Pre-independence and After independence	1980 onwards
		Permanent housed in old colonial buildings	Permanent
<b>Spaces</b>	Learning spaces	As per norms.	As per norms at times excess.
	,Non instructional spaces		
	Transitional spaces		
<b>Space dividers</b>	walls	Natural texture due to materials	Smooth & glossy
	floors	Rough shahabad flooring	Granite, marble, ceramic flooring
	Doors, openings	Traditional two leaf paneled doors ,	Two leaf paneled doors with colour codes
	steps		
<b>Environmental</b>	Light & Ventilation	Widows are only on one side, some schools need artificial light & ventilation due to recent buildings in periphery.	Ample light& ventilation, some buildings are air-conditioned.
	sound	Busy commercial areas & traffic zone are posed problems of changing land-use with high noise levels. 50% of students are not able to listen.	Less disturbance of noise due to landscape barriers & side margins though located in commercial zones.
<b>Interior</b>	colour	Majority white washed Decoration by student's own work in form of charts.	White washed or grey colour preferred Decoration by artificial paints & murals, student's project work
	Furniture in class	Formal arrangement	Formal arrangement ,Modular

<b>Building maintenance</b>	Overall school	Maintained but care to be taken considering hygiene	Well Maintained
	classrooms	Maintained but needs more frequency–no separate dining area	Maintained –no separate dining area
	Transitional spaces	Maintained	Maintained
	toilets	Enough needs maintenance.	Enough

There are eminent educators who discovered child psychological development parameters one of them is Howard Garner whose multiple intelligence has had an impact on child development thinking and education .in his theory he formulated seven intelligences –linguistics ,logical –mathematical ,musical ,bodily –kinestics ,spatial interpersonal ,intrapersonal with special focus on bodily kinesthetic –using one’s whole body or parts to solve problems ,seen as mental and physical activity related allows people to work with each other and spatial involves the potential to recognize and use of patterns of wide space and more confined area .few educators ,child psychology researchers and principals of schools were asked to rank the /identify a relationship the fifteen indicators who have influence of learning considering above mentioned intelligences and development related to it .still considering the academic achievement ,linguistics and logical mathematical ,musical intelligence is yet to be explored .

## OBSERVATIONS

		20	40	60	80	100
	School with historical ,cultural ,educational reference					
<b>Building age</b>	School building age					
	School building as an expression					
<b>Spaces</b>	School with clear spatial structure					
	School with clear ,controlled entry, parking					
	School open to outdoor environment at least on two sides					
	Ample natural elements grass ,play ground					
<b>Space dividers</b>	Easy access to classrooms					
	Easy access to non instructional areas					
	Easy access to transitional areas, ground					
	Flexibility of arrangement in classroom					
	Adequate work space for staff					
<b>Environmental</b>	Class rooms facing light direction and less noise					
<b>Building maintenance</b>	School building is well protected from hazards					
	School building is well maintained					
	Access to physically handicapped					
<b>Interior</b>						

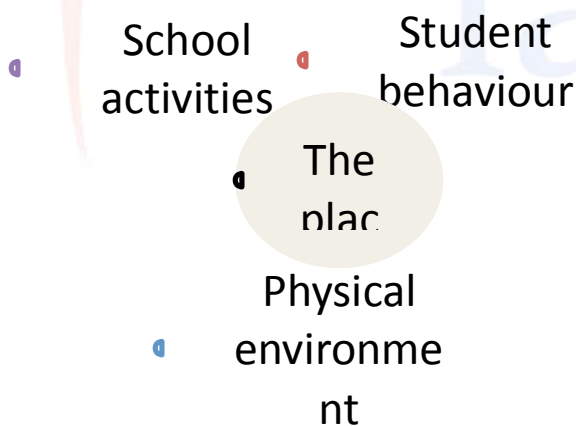
Purpose of this analysis is to find out the important indicators of physical environment which have strong relation to learning.

## DISCUSSION

Considering school size on average classrooms are as per norms with other specified facilities. School entry points though abutting a main road are controlled. Yearly maintenance as well as daily maintenance need more monetary provisions but points 5,6,13,14,15 are lacking in most of the schools regarding health and safety, use of transitional spaces which can be more interactive, need more attention from management (stakeholders) light and colour is equally important, this is similar to findings of (www).

Being in tropics and schools have summer vacation for about 8 weeks less attention is paid on ventilation, mechanical ventilation needs improvement.

Considering time spent, school environment should provide opportunities for play and learning. School is also a working place and learning place if seen from a spatial intelligence perspective, physical environment indicators do matter. Learning place where ever children encounter with space, materials, finishes and flexibility in space need strategic planning. So it can be concluded that more attention should be given to physical environment. This plays an important role in developing years of child.



Although solid proof remains a distant goal, a picture of the environment's role in the educational process is gradually taking shape. It is a picture that is likely to please neither those who advocate minimally decorated, no nonsense classrooms, nor those who advocate minimally decorated, no nonsense classrooms, nor those who call for softer "more humane educational settings." Carol Weinstein 1979.

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*Integrating Global Competence into the Japanese University Curriculum*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012



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## 1. Introduction

Leaders in business, government, and education sectors throughout the world recognize intercultural communication skills as vital to the success of our nations' futures. The demand for graduates who are multilingual, knowledgeable of other cultures, and have been educated or trained in an international context is higher than ever before and continues to grow. Within higher education discourse, this has been articulated as a need for graduates who are *globally competent*.

The term global competence crops up in virtually every domain related to higher education – academic studies, university mission statements, course syllabi, etc. – but a clear definition defies consensus among educators and researchers. Whereas educators have been reported as favoring a more broad definition of global competence (Deardorff, 2004), intercultural experts have expressed the need for greater specificity, intimating the concern that reliable assessment of global competence is only possible provided a clear definition of its component parts.

### **What is global competence?**

Broadly speaking, the term global competence means “having an open mind while actively seeking to understand cultural norms and expectations of others, leveraging this gained knowledge to interact, communicate and work effectively outside one’s environment” (Hunter, White & Godbey, 2006, p. 6).

Institutions employ different terminology to refer to the knowledge, skills and attitudes associated with global competence. They may refer to cross-cultural competence, intercultural competence, global citizenship, international competence, global awareness, or cross-cultural understanding, to name just a few.

Intercultural competence, for example, is often placed within the broader context of intercultural communication competence, which is defined as the ability to “interact with people from another country and culture in a foreign language” (Byram, 1997). Although for Byram intercultural competence does not necessarily entail proficiency in a foreign language, he is careful to point out that intercultural competence most likely

derives from an individual's experience of studying a foreign language. For most, ability to communicate in a foreign language forms a cornerstone of global competence because it equips one with the skills to associate and interact with people of diverse nationalities and cultural backgrounds. Moreover, because language is inextricably rooted and interactive with culture, study of a foreign language entails exposure to and familiarization with the culture that forms its historical and modern context.

Global literacy, or familiarization with issues that transcend national boundaries, is also considered an important component of global competence. This may be demonstrated through knowledge of current international news and awareness of major trends of global change, knowledge of global organizations as well as knowledge of world history and geography.

In Deardorff's (2004) study, a panel of intercultural experts was asked to rate 31 items in response to the question: "What constitutes intercultural competence?" The specific components of intercultural competence rated as most highly relevant were:

1. skills to analyze, interpret and relate
2. flexibility
3. cultural self-awareness and capacity for self-assessment
4. ability to tolerate and engage ambiguity
5. adaptability – adjustment to new cultural environments
6. willingness to withhold judgment
7. deep knowledge and understanding of culture – one's own and others'
8. respect for other cultures
9. cross-cultural empathy
10. skills to listen and observe

In the decades over which the term global competence has gained currency within scholarly studies on internationalization, it has come to encompass so vast a range of meanings as to render it effectively meaningless in the eyes of some researchers. Contrastingly, amenability to a wide range of interpretations allows educators to use the term flexibly, molding it and adapting it to fit each institution's unique objectives. No

matter the particular terminology an institution's adopts to describe its institutional goals, it is nevertheless imperative that global competence (or any of its variants) as an expected output of internationalization efforts be articulated in terms of explicit program objectives, which are then linked to specific learning outcomes.

### **How do university students acquire global competence?**

The challenge of equipping students with global competence has been charged to universities and other institutions of higher education, which have responded by ramping up internationalization efforts. Some of the internationalization strategies that have implemented to date include adding an international major or minor to the curriculum or within specific disciplines, adding foreign language or area studies, infusing courses with international content, increasing international relations degree programs, increasing international students, faculty and scholars, providing opportunities for study abroad and international internships or research, and encouraging faculty involvement in international research, teaching and consulting (Herrera, 2008).

In order to launch such initiatives, universities are obliged to look for outside sources of funding. In addition, regardless of whether internationalization efforts are financed through the government or private sector contributions, investors require proof that the students who participate in such programs are, in fact, globally competent as a result. Reliable assessment of global competence as an outcome of internationalization efforts is therefore crucial to maintaining high quality programs as well as providing education quality assurance.

Thus far, we have seen that global competence involves a complex combination of knowledge, skills and attitudes. Therefore, the road to cultivate global competence must be similarly diverse, as should be the opportunities universities provide students for doing so. Some of the inroads to global competence will naturally have significant overlap, such as foreign language learning and study abroad. This paper is part of a larger report that looks closely at three specific strategies: 1) foreign language learning, 2) study abroad, and 3) infusing existing courses with international content, discussing each in terms of how it uniquely contributes to the goal of producing globally

competent students, if and how it is assessed by universities, and finally how its implementation and assessment may differ between American and Japanese contexts. The present paper highlights study abroad with respect to the criteria outlined above and offers several precautions as well as suggestions for how assessment tools and methodologies might be modified to better suit the circumstances particular to Japanese universities.

## **2. Study Abroad and Its Role In a Globalized Japanese Society**

As increasing numbers of Japanese manufacturers shift their productions bases overseas,<sup>1</sup> the recent decline in Japanese young people's interest in working abroad, tagged in the media as *uchi muki shiko* or "inward-looking" Japanese, has given many Japanese companies cause for concern. In a related trend, the number of Japanese students studying abroad has steadily declined since 2004, decreasing markedly from 2007 to 2009 by approximately 20 percent.<sup>2</sup> Among the factors speculated to have influenced this trend is students' desire to gain a head start in the fiercely competitive job hunting process, now beginning in the third year of university, the so-called "study abroad year" of American and European students. "Japanese students who study overseas often find that by the time they enter the job hunt back home, they are far behind compatriots who have already contacted as many as 100 companies and received help from extensive alumni networks. And those who spend too long overseas find they are shut out by rigid age preferences for graduates no older than their mid-20s." (Tabuchi, 2012)

Nevertheless, the notion study abroad is instrumental in improving students' intercultural sensitivity is widely acknowledged in Japan, reflected here in a statement from the Japan Business Federation's 2011 proposal "Toward the Promotion of Global Human Resources":

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<sup>1</sup> Overseas production among domestic manufacturing firms accounted for 17% of total production in fiscal year 2008, up 5 percentage points from the previous decade.

<sup>2</sup> Data compiled from Japan Student Service Organization (JASSO).  
<<http://www.jasso.go.jp/statistics/index.html>>

In addition to the improvement of communicative competence in a foreign language, study abroad is a particularly effective means of nurturing the qualities required of today's global workforce, including intercultural competence and the spirit to take on challenges abroad.<sup>3</sup> (p. 8)

The Japanese government provides support to universities sending students abroad through various funding schemes. The Japanese Ministry of Education, Science, Sports and Technology (MEXT) included a 60% increase in expenditure on funding for study abroad in fiscal year 2011. According to MEXT, 2,845,908 Japanese students were enrolled in university in 2009. That same year, 59,923 Japanese students studied abroad, representing just over 2 percent of the total (MEXT 2012b). One of MEXT's primary goals as a part of its plan to promote internationalization of Japanese universities is increasing the annual number of Japanese students who study abroad to 300,000 by the year 2020, reflecting 10 percent of the total university student population (MEXT 2012a).

JASSO, Japan Student Services Organization, also offers scholarships to Japanese students studying abroad as well as international students studying at Japanese universities. JASSO's Student Exchange Support Program provides monthly scholarships in the amount of 80,000 yen for Japanese students enrolled in university, junior college, technical college or vocational school as part of its Short-Term Visit Program<sup>4</sup>. After reviewing applications submitted by Japanese universities, JASSO determines the number of students who will receive the scholarship for the upcoming academic year. In 2011, JASSO awarded Short-Term Visit Scholarships to 6,683 students at 137 schools, representing 59 percent of JASSO's total expenditure on international student exchange for that year (JASSO 2012).

### **3. Study Abroad as an Internationalization Strategy**

The following table, featured in an article in *Nihon Keizai Shimbun* titled "Universities

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<sup>3</sup> My translation.

<sup>4</sup> "Short-term" is defined as lasting less than three months.

push study abroad: Will they make inward-looking students go overseas?”, outlines initiatives taken by nine prominent Japanese universities to stimulate participation in study abroad.<sup>5</sup>

Waseda University	Established 4-year special program to study abroad in the United States. 15 individuals selected per year, with travel expenses subsidized.
Hitotsubashi University	Newly established 1-year study abroad program at Oxford University. Maximum annual scholarship of 3,500,000 yen.
Meiji University	Study abroad pre-departure, for-credit courses added to the general curriculum. Leaders in industry invited as lecturers.
Keio University	Expanded study abroad scholarship system for academic year 2011. Advising office offering support from permanent staff representing U.S. study abroad organizations.
Reitaku University	Newly established study abroad scholarship system offering a maximum monthly stipend of 300,000 yen. Plan to increase the number of study abroad participants four-fold to 190 students.
Ritsumeikan University	New program established in coordination with universities in Korea and China to create student exchanges between the three countries.
Doshisha University	Offering 4 types of study abroad scholarships with a maximum monthly allowance of 300,000 yen. Plan to send

<sup>5</sup> Article title and table contents are my translation.

	470 students abroad in 2011.
Kyoto University	IELTS administered on campus.
Hiroshima University	Established 2-week study abroad training courses for first-year students for a participation fee of 50,000 yen.

As mentioned earlier, in return for their support of universities' internationalization efforts, including study abroad programs, investors are requiring that universities provide proof of their programs' effectiveness. Universities, thus, are left with the burden of accountability. In other words, how do universities show that students who participate in study abroad actually become globally competent as a result? Methods for evaluating whether study abroad programs achieve their stated goals are absolutely essential to the design and implementation of such programs, not only to remain accountable to investors but also to build international credibility in promoting education quality assurance. Methods of evaluating the effectiveness of study abroad programs are referred to as *assessment*.

Despite the clear enthusiasm exuded by institutions of higher education to formally express their commitment to "prepare...graduates to be active and critical participants in society" (Forsey, Broomhall & Davis, 2012, p. 129), few of those who have included some aspect of globalization or internationalization in their mission goals are actively assessing global competence as an outcome of internationalization efforts (Punteney, 2012).

Deardorff (2004) posed the question to administrators at U.S. institutions of higher education as to how their institutions currently measure intercultural competence as a student outcome of internationalization. The most commonly reported forms of assessment were student interviews (89%), student papers/presentations (79%), and finally other forms, including observation, student portfolios, professor evaluations, pre/post tests, custom/adapted self-reporting instruments, and commercial self-reporting instruments. In fact, institutions engaged in assessment of intercultural competence as a student outcome of internationalization reported using a variety of assessment methods,

on the average of 5 per institution.

Naturally, the tools and methods used to assess global competence will vary according to, among other factors, 1) how a given institution chooses to define global competence, as well as 2) particular program characteristics. The following presents a framework for organizing study abroad learning into three categories for which specific learning outcomes can be developed and ultimately assessed.

#### **4. Study Abroad Learning Outcomes**

In their article “Research design in assessing learning outcomes of education abroad programs”, Sutton, Miller and Rubin (2007) distinguish three categories of expected learning outcomes for students studying abroad: Cognitive, affective and behavioral. The act of breaking down study abroad learning outcomes into three general categories allows for more targeted assessment. Thus, the three types of learning, expressed in three categories of expected learning outcomes, will be assessed using different means.

Anticipated learning outcomes for students studying abroad

Type of learning	Anticipated learning outcome
Cognitive	Knowledge and skills
Affective	Attitudinal development
Behavioral	Resultant life choices

##### **Cognitive dimension**

The cognitive dimension of learning that takes place during study abroad corresponds to the acquisition of knowledge and skills. Study abroad participants are expected to achieve higher levels of knowledge of course content and assimilation of associated skills than their peers enrolled in an identical course at the home institution. Within the domain of knowledge and skills, language proficiency is the most commonly addressed type of learning targeted by assessment tests. These tests can take a number of different forms.

### **Quantitative assessment**

- Pre-test/post-test (optionally with an additional, mid-program administration)
- Interviews in which students are given hypothetical scenarios and asked to select the most appropriate linguistic response
- Computer-based assessment (e.g., SOPI)
- Self-evaluation reports and surveys

### **Qualitative assessment**

- Conversation analysis of students interacting with host family members
- Analysis of audio taped recordings of class interaction
- Evaluation of journal writing in the target language

### **Affective dimension**

The affective dimension of study abroad learning relates to attitudinal development, which translates to gains in intercultural sensitivity. Learning outcomes reflecting participants' attitudinal developments are notoriously more difficult to reliably and accurately assess.

Research studying the effect study abroad has on attitudinal development has relied almost exclusively on self-report satisfaction scales, used, for example, in questionnaires asking participants to rate the impact study abroad has had on their goals and personal growth or development. For example, exit questionnaires may ask students to rate their satisfaction with various aspects of the program, such as *My home-stay family was friendly and helpful*, or *I would recommend this program to other students at my college*. Instruments designed to target specific skill sets may offer a slightly more objective alternative to satisfaction questionnaires in assessing the affective outcomes of study abroad. These paper and pencil instruments are typically administered pre-program departure and post- program completion, then compared with the results from students who enrolled in an identical course on the home campus. Some examples of these types of assessment instruments are given below.

### **Intercultural Development Inventory**

The Intercultural Development Inventory (IDI) is based on the Development Model of Intercultural Sensitivity, a theoretical framework proposed by Milton Bennett. Bennett identifies six stages that mark an individual's progress toward intercultural competence. "The underlying assumption of the model is that as one's *experience of cultural difference* becomes more complex and sophisticated, one's potential competence in intercultural relations increases." (Hammer, Bennett & Wiseman, 2003, p. 423)

### **Cross-Cultural Adaptability Inventory**

The Cross-Cultural Adaptability Inventory (CCAI) identifies four skill areas that predict success in cross-cultural adaptability and intercultural communication:

- ① Emotional Resilience
- ② Flexibility and Openness
- ③ Perceptual Acuity
- ④ Personal Autonomy

### **Global Competency and Intercultural Sensitivity Index**

The Global Competency and Intercultural Sensitivity Index (ISI) developed by Olsen and Kroeger (2001) measures the relationship between an individual's experience abroad and global competency, which is said to comprise the following knowledge, skills and attributes:

- ① Substantive knowledge (knowledge of cultures, languages, world issues, etc.)
- ② Perceptual understanding (open-mindedness, flexibility, resistance to stereotyping)
- ③ Intercultural communication (skills relating to adaptability, empathy, and cultural mediation)

In addition to these instruments, assessment of the affective dimension of study abroad may rely on student written accounts of cross-cultural experiences, as well as structured interviews.

### **Behavioral dimension**

The third, behavioral, component of study abroad relates to resultant life choices as a consequence of having studied abroad. These learning outcomes may be expressed as

new or different interpretations on world events, increased interest in other cultures, or increased likelihood to pursue careers with an international scope.

Assessment of the behavioral dimension of study abroad learning may be accomplished through longitudinal studies, which, while requiring institutional commitment and dedication of resources, may help determine the impact of study abroad programs on students' intercultural sensitivity in the months and years after they return home. For example, do study abroad participants view world events differently following graduation? Are study abroad participants more likely to accept job offers that place them overseas? What kind of careers do study abroad participants pursue after graduation? How long do they remain at each company or organization where they are employed? This type of assessment may be achieved through the distribution of exit questionnaires coupled by follow up interviews and surveys which track students after graduation through the first few steps of their careers.

#### **4. Discussion**

As we have seen, study abroad constitutes a major internationalization strategy utilized by Japanese universities to provide students with more opportunities to gain the knowledge, skills, and attitudes that will then enable them to take active roles in an increasingly globalized Japanese society. However, the methods for assessing whether study abroad positively contributes to this end will necessarily differ from methods used among American institutions of higher education. This is primarily due to three factors that will be examined briefly in the following subsections.

##### **Differences in the foreign language education landscape**

There is no question that English dominates foreign language education in Japan. Partially due to lack of clarity in national policy (see Butler and Iino's discussion of MEXT's definition of international understanding, pp. 40), in combination with the particular historical circumstances and social mores that have shaped Japan's role in the international community and world economy, the rhetoric behind internationalization and globalization has become conflated with that of foreign language education.

It is often assumed that foreign language proficiency constitutes an important aspect of global competence, presumably in order to foster communication with diverse members of an international community. The perception of international community, however, in Japan, tends to overlook those cultures and nations who do not belong to the economic and military powers of the West (Kubota, 2002, p. 19). Consequently, although in Western academic discourse foreign language education is considered a tool for building global competence, due to its equation with English (and moreover, specific varieties of North American or British English) in Japan, it could potentially work counter to the purported goals of internationalization by reinforcing attitudes promoting English hegemony (to the detriment of minority languages) and its reactionary counterpart: Japanese nationalism.

Perhaps there needs to be a more clear distinction between foreign language learning as a dimension of study abroad and English language education, both of which are considered important for global competence. With regard to the cognitive dimension of study abroad learning, which has traditionally dealt primarily with evaluating foreign language proficiency, instruction and assessment by Japanese universities must take into special consideration the following if study abroad is to truly serve the goal of helping to instill global competence in program participants.

1. Promote the study of foreign languages other than English, in particular languages of Asian countries that provide Japanese universities with the majority of their international students.
2. Raise awareness of other varieties of native and non-native English.
3. Incorporate content into foreign language courses that reinforces more realistic representations of the international community.

### **Global competence as an individual attribute versus interpersonal relationship**

Transcending the dichotomy of general versus specific, competence has alternately been characterized as relating to inter-personal relationships rather than individual attributes, in essence, “a social judgment that people make about others” (Lustig & Koester, 2003, p. 64-65). This has prompted some to regard the approach to defining intercultural, international and communication competence in Western societies as engendering

serious limitations when it is uncritically applied to non-Western societies, where the unit of analysis may reside in the network of one's interpersonal relationships rather than the individual per se. In fact, Miyahara (2004), echoing Ho (1998), suggests that "Western ideological presuppositions, such as individualism, are alien to the Asian ethos" and should not be employed to frame psychological phenomena in Asian societies (2). Thus, it may be particularly important to establish structured activities for intercultural exchange during Japanese students' sojourn abroad in order to ensure ample opportunity for developing the skills to create, manage and maintain the type of inter-personal relationships that form the basis of global competence in this approach.

### **Gap in actual hiring processes**

A third factor warranting reevaluation of the methods used to define, operationalize, and assess global competence as an outcome of study abroad is the inconsistency arising between the skills and attitudes MEXT uses to characterize "global human resources" and the skills and attitudes expected of new graduates entering most Japan companies. As one recent graduate from Oxford explained to the *New York Times* (Tabuchi, 2012), "I really wanted to gain experience at a Japanese company, but they seemed cautious. Do Japanese companies really want global talent? It seemed to me like they're not really serious."

In order to ensure that government and university resources dedicated to creating globally competent students are allocated effectively, assessment of study abroad learning should not be targeting those skills and attitudes that characterize global competence in *theory*, that is, theories developed with particular regard for the circumstances of American students studying at American institutions, likely looking for jobs in the U.S. Rather, Japanese universities' assessment of global competence should determine whether or not participants in study abroad gain the appropriate perspectives and attitudes that enable them to work effectively in Japanese companies striving to compete in the global marketplace.

## **5. Concluding Remarks**

MEXT defines global human resources as individuals who possess the following

attributes:

- I. Linguistic and communicative competence
- II. Independence and assertiveness, determination to challenge oneself, cooperativeness and flexibility, sense of responsibility and duty
- III. Understanding of foreign cultures and identity as a Japanese

At first glance, this definition appears consistent with many of the definitions offered for global competence in Western scholarship. However, if MEXT defines the global human resources that industries are calling for as having characteristics such as *individualism* and *assertiveness*, there is clearly a gap in the actual hiring processes of Japanese companies (Tabuchi, 2012). Rather than assessing whether or not participants in study abroad programs come back globally competent in the Western research paradigm-developed sense of the term, assessment should be asking the question: Does (short-term) study abroad positively impact students' desire to seek out intercultural experiences while reinforcing the behaviors and attitudes that enable them to integrate and thrive within Japanese companies? This may require redefining the term global competence, or global human resources, or both; ultimately, however, Japanese universities looking to provide accountability for outside investment in their study abroad programs must evaluate success measured against actual labor market conditions, while taking into consideration the reality of Japanese corporate culture and the ability or failure of graduates to meet the expectations of what global human resources truly implies.

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*Primary Students' Perspectives on the Use of Multiple Languages in Learning Science*

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Official Conference Proceedings 2012

Abstracts

The Philippines is a multilingual country with at least 170 languages in 17 regions. This created an endless debate over which language should be used in educating Filipino students particularly in science and mathematics education, which are taught in English. Recent studies reveal that primary students perform better when using their first and second languages.

This research supports the advocates of first language in teaching and learning science concepts in primary education.

The study aimed to know the students' extent of use of the local language and of the academic language in learning science concepts, as well as to identify in which language they comprehend best.

The study involved elementary Bicol-speaking Filipino students from one of the six provinces of Region Five (V). To achieve the objectives, the researcher developed and incorporated the use of modified survey questionnaires which were translated into the national language to determine the students' language preference in learning science concepts. Each item in the survey questionnaire solicited responses from the students regarding their use of the local and academic language in science learning.

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## **Background of the Study**

The Philippines is an archipelagic, heterogeneous society. It has at least 170 languages in 17 regions. Of these, eight are major languages – Tagalog, Pampango, Bicol, Hiligaynon, Waray, Cebuano, Ilocano, Pangasinan - with Filipino as the national language, and English the official language.

The language diversity in the Philippines became a constant problem on the utilization of the medium of instruction which led to the implementation of the Bilingual Education Policy (BEP) in 1974 which specified Filipino and English as medium of instruction (Gonzales, 1987).

Even so, the existence and implementation of the language policy in education did not stop the never ending dispute over which language should be used in educating Filipino students. Educators and policy-makers have been divided in which language is most appropriate in teaching content subjects, such as science and mathematics.

## **Debates on Which Language is Appropriate as Medium of Instruction in Science Education**

The quandary in the medium of instruction in science education is due to the unsatisfactory performance of Filipino students in school tests, the national achievement tests in science and in TIMSS which may indicate their comprehension in science.

Some educators posit that Filipino, as the national language, can be effective as a medium of instruction in science. The proponents of teaching science in English claim that it is tested and feasible, economical and universal in science education. While others argue that the vernacular of students should be used as medium of instruction since English and Filipino are considered foreign language and/or second language in other provinces of the Philippines.

Several educators and curriculum developers supporting the use of the students' mother language argue that it should be used as medium of instruction since students learn to read more quickly and English and Filipino are considered foreign language and/or second language in other provinces of the Philippines.

Brock-Utne (2001) stated that students learn to read more quickly when the mother tongue is used as medium of instruction. It is also best used as bridge in learning main languages of instruction (Sibayan 1994). In the same light, it will enable the students to think and process their experience in logical and rational way (Gonzales 2003).

## **Researches, Advocacies and Educational Programs that were Developed and Implemented which Utilized the Students' Mother Language**

In the province of Kalinga, an experiment called the Lubuagan Experiment was administered to the students using the local language in teaching Science, Math and English, students' test scores indicated greater gains (Dumatog & Dekker 2003).

The PCER (Presidential Commission on Educational Reform) recommended the use of vernacular in the primary grades, at least, in Grade I as it seems the practical thing to do. UNESCO's stand in favor of the use of mother tongue instruction is worth mentioning. UNESCO Regional Director for Asia Victor Ordoñez (1998) has stated that "it is part of our [UNESCO's] task to protect and celebrate the diversity ... between cultures and not

homogenize it to the point that we lose our individual identities." UNESCO has been known to be a staunch supporter of the idea of developing functional literacy through the vernacular.

The Philippine Community School Movement and the Vernacular experiments in Iloilo in the early 1950's, are but some of the Philippine studies whose results favored the use of vernacular instruction in the primary grades.

Learning is meaningful and productive if the incoming ideas, concepts and activities are relevant, and is best administered using the language that students are familiar and can comprehend with.

### **Language Used in Science Education in other Countries**

TIMSS 1995, 1999 and 2003 results indicate that a number of top performing countries in science achievement tests are those who use their own language in their educational system or in science education notably Japan, Korea, Finland and Hong Kong SAR. As an example, Japan a highly industrialized country, has been using its own language in teaching science to Japanese students from primary to tertiary level. Kawasaki (1996) specified that a large percentage of scientific concepts were translated into Japanese language and several scientific concepts were also given equivalent Japanese terms.

Rollnick (2000 cited in Ong 2008) conducted a research on the use of Bahasa Malaysia as medium of instruction in teaching and learning science. Results show that there was no setback in using the national language in learning and teaching science.

In South Africa which has 11 official languages, Ferreira (2011) stated in her research that students in grades 1, 2 and 3 are taught using their first language and afterwards learn English and Afrikaans. She further stated that a number of students from the rural areas only encounter English at school and not in their own home or community. This situation affects the learners' comprehension and performance at school.

### **Students' Performance in Science**

The low performance of Filipino students in the national and international achievement tests in science triggered arguments and disagreements among educators, experts and policy-makers on which language is appropriate for students in teaching and learning science concepts.

It can be concluded that the low performance of students in the tests reflects their comprehension in science, and students are only able to comprehend science concepts and apply it in real life situations if classroom environment provided them the adequate atmosphere for learning. Part of that classroom environment is the use of proper medium of instruction in teaching scientific concepts.

At the 1999 TIMSS (Trends in International Mathematics and Science Study) for 8<sup>th</sup> graders, the Philippines ranked third (36<sup>th</sup> overall out of 38 countries) to the last, garnering an average score of 345, the international average was 488. In the 2003 TIMSS for 4<sup>th</sup> graders, the Philippines

again placed low in ranking at 23<sup>rd</sup> out of the 25 participating countries with an average of 332, compared to the international average of 489.

Many factors that may have affected the students' performance in the national and international achievement tests in science have been mentioned, such as lack of books, teaching materials, shortage of qualified teachers, classrooms, funds and many others. But the medium of instruction which is very vital is often set aside.

Research and tests conducted by Vela (2010) between 2009 and 2010 indicated that Bicol-speaking students performed well in science tests using the Filipino (national language) and Bicol (vernacular language) languages.

### **Objectives of the Study**

To have a further understanding on the appropriate medium of instruction in science education in the local areas of the Philippines, this study investigated the students' language preference as well as their extent of use of the local and academic languages in learning science concepts.

### **Delimitation of the Study**

The study was conducted on grade three Bicol speaking students and focused on determining the language in which they comprehend best in learning science concepts by administering modified survey questionnaires, soliciting response on their language preference in learning science in and outside the school.

The venue of the study was in an island province in the Bicol region. It was chosen due to its accessibility and familiarity with the researcher. The Bicol language is one of the eight major languages in the country. In education, its achievement in science is ranked 14<sup>th</sup> out of 17 regions. ([http://www.pcij.org/blog/wpdocs/Quality\\_of\\_basic\\_education\\_NSCB\\_2006.pdf](http://www.pcij.org/blog/wpdocs/Quality_of_basic_education_NSCB_2006.pdf))

The researcher developed testing materials as well as the translation into the Filipino language in consultation with Filipino teachers, college professors and science education specialists.

### **Significance of the Study**

The study aimed to:

- ♦ Provide information on the extent of use of the languages based on students' perspective.
- ♦ Impart ideas in facilitating students' understanding of science concepts and enhance science process skills in the language they are familiar with.
- ♦ Support the earlier studies and the current MLE-MTB program of the department of education in the Philippines which use local languages in teaching students.

## Methodology

The study was conducted in one of the six provinces of the Bicol region between December 2011 and March 2012 in four public schools located in the northern and southern part of the province. The schools follow the regular public elementary education program implemented by the Department of Education. The participants of the study were 318 grade three students from three sections. Students are usually assigned to a section based on their performance in the class. Those who perform well are sent to the first section. On the other hand, students whose performance are average are sent to the second or middle sections while those who perform below average belong to the third or lowest section possible.

The study primarily used a 20-item questionnaire with multiple choices to obtain information on students' language preference in the classroom and in learning science concepts and skills from various science activities. It also elicited the students' preference on the use of their first language, national language and the academic language in the classroom, and in learning science concepts and skills in various science activities.

The questionnaires were written in Filipino. Each item and procedures for answering were also explained by the researcher to the students in the Filipino language.

The questionnaire consists of two parts. The first part asks respondents about their background information such as name, age, sex and parents' job. The second part comprises the main questions which pertain to the respondents' use of the three languages (Filipino, Bicol and English) at home, outside home, at school and inside the classroom. Subsequent questions are about the language their teachers use while teaching science and what language they prefer during class activities. The concluding part of the set of questions refers to the respondents' language preference in studying science.

## Findings

Table 1  
Characteristics of the Grade Three Respondents

Age	Male	Female	Total	Percentage
8	22	23	45	14.2%
9	104	112	216	67.9%
10	25	18	43	13.5%
11	3	5	8	2.5%
12	3	2	5	1.6%
13	1			.3%
<b>Total</b>	<b>158</b>	<b>160</b>	<b>318</b>	<b>100%</b>

Of the 318 student respondents, 160 (50.3%) are female while 158 (49.7%) are male. The age of the respondents range between 8 and 13 years old, with 216 (67.9%) 9 year olds comprising the largest group of respondents.

Table 2  
Language students understand

<b>N=318</b>	<b>Yes</b>	<b>Slightly</b>	<b>No</b>
<b>Do you understand the Bicol Language?</b>	<b>270</b> 84.9 %	<b>47</b> 14.8%	<b>1</b> .3%
<b>Do you understand the Filipino Language?</b>	<b>284</b> 89.3%	<b>27</b> 8.5%	<b>7</b> 2.2%

The first two questions asked the students if they understand Bicol and Filipino languages. 84.9% of the respondents answered that they understand the Bicol language while 14.8% replied “slightly” and 1 answered “no”. 89.3% of the respondents confirmed that they can understand the Filipino language whereas 8.5% chose “slightly” and 2.2% respondents chose no.

Regarding the means of transportation to school, forty-one percent (41%) of the respondents walk to school every day, thirty percent (30%) use the public transportation while twenty-eight percent (28 %) of the respondents use private vehicle in going to school.

Table 3  
Language used at home, outside home, at school and in the classroom

<b>At home</b>	<b>Outside home</b>	<b>When talking to friends</b>	<b>At school and in the classroom</b>
<b>76.7% Bicol</b>	<b>73.9 % Bicol</b>	<b>66.4% Bicol</b>	<b>41.2% Filipino</b>
19.8% Filipino	25.2% Filipino	31.8% Filipino	36.8% Bicol
3.5% English	9% English	1.6% English	21.7% English

Majority of the students from the schools used Bicol at home, outside their home and while talking with friends. 41.2% chose Filipino as the language they normally use in the classroom.

Table 4

Language students and their teachers use during science class and while studying science

Students	Teachers	Other languages used when studying science on their own
<b>84% English</b> 7.9 % Filipino 7.5% Bicol	<b>39.3% English and Filipino</b> 32.1% English 24.8 % Bicol, Filipino and English	<b>58.2% Filipino</b> 31.8% None 7.5% Bicol

On the other hand, 84% of all the respondents chose English as the language they use while studying science in the classroom. Regarding the language their teacher use when teaching science, 39.3% responded that their teacher uses both English and Filipino, while 32.1% confirmed that their teacher uses only English.

When studying science on their own, 58.2% of the respondents said they use the Filipino language while 31.8% answered they only use English.

Table 5

Language students prefer to use in science activities and in studying science

While Science	Studying	During Recitations	Class	While Science	Reading	While teacher's instructions	following
<b>62.3 % English</b> 23 % Filipino 14.2 % Bicol		<b>64.8% Filipino</b> 21 % Bicol 13.8 % English		<b>40.6 % Filipino</b> 34.3 % English 25 % Bicol		<b>40.9% Filipino</b> 35.8% English 23.3 % Bicol	
While the teacher is discussing science lessons	During exams	science	While during classes	thinking science	While homework	doing	
<b>50% Filipino</b> 30.5 English 19.5 Bicol		<b>56.6 % Filipino</b> 29.2 % Bicol 14.2 % English		<b>40.9% English</b> 39.3% Filipino 19.8 % Bicol		<b>54.1 % Filipino</b> 26.7% Bicol 19.2 % English	

62.3% percent of the respondents chose English as the language they are comfortable with studying science, however, 64.8% said they are more relaxed during class recitations if they use the Filipino language.

40.9% of the respondents prefer their teacher to use the Filipino language in giving directions during science class activities. 40.9% replied they are able to think well during science class when they use the English language while 39.3% selected Filipino.

40.6% of the respondents answered that the Filipino language is easier during reading and understanding science, while 34% chose English.

50% of the student respondents selected Filipino as the language they can understand better if utilized by their teacher in science class, while at least 30% chose English.

49.1 % stated that they can understand the science lessons in English, while 46.2 % answered “slightly”, and 4.7% of the respondents said “No”.

Subsequently, respondents were asked which language they find difficult in science exams, 74 % affirmed that English is difficult to use in science examination, 56.6% chose Filipino as the language they find easier in answering exams. Lastly, 54.1% indicated Filipino as the language easiest to use when doing their homework while 26.7% chose the Bicol language, only 19.2 % respondents chose English.

## **Conclusion**

The results show that most of the students feel comfortable and can comprehend better if both Filipino and Bicol language are used in various science class activities.

The research also revealed that most students prefer both the Bicol and Filipino languages as medium of instruction in learning science concepts. It can be a positive instructional medium for motivation and interactive learning since students are familiar with the language. Students will be able to relate science concepts well with real life situations and build self confidence, especially in expressing their ideas in the language they know best. Furthermore, the study strengthened the premise that learning takes place in the language that students are familiar with.

The results of the study indicated that both the Filipino and Bicol language are suitable mediums of instruction in science education for Bicol-speaking students. Furthermore, this study provided significant information regarding the use of local language as medium of instruction and broadens the standpoint of contemporary theories in education (such as the behaviorist, constructivist or cognitivist approach) and sets aside old traditional methods and practices in classroom instruction.

## **Implication of the Study**

The goal of science education is to develop and nurture students' functional understanding of natural systems and their ability to utilize the methods of scientific inquiry and principles linked with real life situations which should prepare them to make responsible decisions on various social issues which are science-related. Learning comes in many forms, not only inside the classroom but also from the immediate environment and everyday life experiences of which one of the imperative aspects in any learning environment is the instructional medium,

which is the carrier of message. Hence, concerning the points mentioned, this study provides relevant information regarding the use of local language as medium of instruction.

The study supports the premise that learning takes place in the language that students are familiar with. The results of the study determined that both the Filipino and Bicol language are suitable mediums of instruction in science education for Bicol-speaking students.

Finally, this study opens possible areas of concern in relation to the development of medium of instruction that facilitates science learning and teaching.

### **Recommendations for future Studies**

Based on the results of this study, the following is recommended:

1. Conduct more in-depth research on the use of the local language as medium of instruction in science education especially in other regions of the country.
2. Develop instructional modules using the language students are familiar with.
3. Encourage the use of students' mother language in both formal and non-formal education especially to far-flung communities.

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*Using Rough set to Investigate the Structure of the Misconception Order*  
– Dual Linear Equations for example

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

This paper uses the reduct and core in the rough set as a screening tool in the important property or factor of the system. The paper adopts the rough set which does not need to provide a subjective assessment of knowledge or data. That bases on the students' test data to delete the redundant information. The paper focuses on two classes of junior high school students in the Dual Linear Equations unit. The use of the clustering results of the students' tests compares the roughness of the knowledge of each group. We can define the importance of learning Misconception point, decide the structure of the Misconception order and then provide the reference of the remedial teaching.

**Keyword :** Reduct, Core, Rough Set, Misconception Point, Misconception Order

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## **1. Introduction**

Misconception is also known as “Alternative Conception.” Many scholars pointed out that before the students acquire knowledge, they have already had the system structure of explaining the phenomenon of knowledge. The knowledge structures of these courses are basically different. The difference leads to students’ learning obstacles (Brown & Burton, 1978). Hewson and Hewson (1983) pointed out that if we want to change students’ misconceptions, we must first identify misconceptions which students have. In recent years, the diagnostic teaching has generally been accepted in science education. In both foreign and domestic policies, there are a great number of teaching experiments which are performed in accordance with the concept of diagnostic teaching (Bell, 1993; Kerslake, 1987).

Item response theory is frequently used by people. However, the basic assumptions of item response theory are limited in the harsh, which needs a lot of samples. It is very difficult to operate this way in the teaching site because teachers can not timely receive the feedback after having the students measured. In order to overcome the reasons above, this paper is quite different from the previous psychometric research methods in the analysis. We use rough set theory to analyze the reactions of the student's answers. Rough set theory is a very practical discipline, proposed by Pawlak in 1982. It is a mathematical tool which mainly deals with the problem of Vagueness and Uncertainty. It is able to identify some of its related and has the advantages which other theories do not have. Under not losing any information, rough set theory can gain the same knowledge with the original decision-making system. But at this time the state is for the minimum condition attribute, which maintains the simplest form of the sub-types of the ability with the original decision-making system.

In this paper, rough set combined with the Interpretive Structural Modeling to analyze students’ misconceptions. The experimental objects focus on a class of junior high school students in a central country. The experimental subject is mathematics unit of simple equation with two variables. By using rough set theory to analyze the different misconceptions, and combining ISM chart to set the appropriate remedial teaching. We expect to be able to provide teachers an objective diagnosis and effective tool.

## **2. Theoretical Framework**

### **2.1. Interpretive Structural Model (ISM)**

J.N. Warfield in 1976 proposed Interpretive Structural Model. This mathematical analysis changes the relationship between the different types of elements into the associated constructor class diagram in a complex system. Among analyses, he used “Graphic Theory” in order to clarify the structure of the complex events (Warfield, 1982).

In education applications, Sheu, Tzeng, Tsai, Chen, & Nagai, (2012c) all begin with the ISM to analyze the structure of the teaching content and is considered as a teaching reference. In this paper, by combining the misconception structure analyzed from GSP and the ISM concept chart each other, we got an innovative approach to the concept of learning path. This method can clearly pointed out the learning sequence and the difficulty of the concept.

## 2.2. Student-Problem Chart.

The so-called SP chart (Student-Problem the Chart) refers to the two letters of Student and Problem in English. SP chart is proposed by the Japanese scholar Takahiro Sato in 1969. SP chart can be used not only to show the diagnostic assessment of learning but also give full play to improve the effectiveness among the formed curricula.

**Definition 1:** Establish student number  $S_i, i = 1, 2, \dots, m$ , Problem number  $P_j, j = 1, 2, \dots, n$ , and item response  $Y = (y_{ij})$ , for  $i = 1, 2, \dots, m, j = 1, 2, \dots, n$ , where  $y_{ij} = \begin{cases} 0, & \text{if ans is wrong.} \\ 1, & \text{if ans is right.} \end{cases}$  (1)

Student Problem	$P_j$ Problem Number $j = 1, 2, \dots, n$	Total Score
$S_i$ Student Number $i = 1, 2, \dots, m$	$Y = (y_{ij})$	▲ High Score ▼ Low Score
Avowal People	More ◀ ▶ Less	

Figure 1. S-P Chart (Sato, T. 1974)

## 2.3. Grey Relational Analysis.

Gray system theory is put forward by Deng Julong in the year 1989. The theory is for the uncertainty or incompleteness of Relational Analysis of the system model. With “Prediction”, “Decision” and other methods, then investigate the overall system. Gray system theory is the study of gray system analysis, modeling, forecasting, decision-making and theory-controlling, which combines with mathematical methods and develops a set to solve information which is not complete.

In this paper, reference to the GRA procedures is shown as follows:

**Definition 2:** Establish the reference vector  $y_{0k}$  and comparative vector of the raw data  $y_{ik}$ ,  $i = 1, 2, \dots, m, j = 1, 2, \dots, n$ , listed as follows: (Yamaguchi, Li, & Nagai, 2005, 2007)

$$\begin{aligned}
 y_{0k} &= (y_{01}, y_{02}, \dots, y_{0j}, \dots, y_{0n}) \\
 y_{1k} &= (y_{11}, y_{12}, \dots, y_{1j}, \dots, y_{1n}) \\
 y_{2k} &= (y_{21}, y_{22}, \dots, y_{2j}, \dots, y_{2n}) \\
 &\vdots \\
 y_{ik} &= (y_{i1}, y_{i2}, \dots, y_{ij}, \dots, y_{in}) \\
 &\vdots \\
 y_{mk} &= (y_{m1}, y_{m2}, \dots, y_{mj}, \dots, y_{mn})
 \end{aligned} \tag{2}$$

Generations of Grey Relation: To normalize the data of reference vector. The comparativeness of establishing series has to meet three conditions: non-dimension, scaling, polarization. To begin generation and data standardization uses the way of larger-the-better.

**Definition 3:** Larger-the-Better: The expected goal is bigger, the better.

$$y_{ik}^{\max} = \frac{y_{ik} - \min_{\forall i} y_{ik}}{\max_{\forall i} y_{ik} - \min_{\forall i} y_{ik}} \tag{3}$$

$\max_{\forall i} y_{ik}$  is the maximum data of the  $j$ ;  $\min_{\forall i} y_{ik}$  is the minimum of the  $j$ . This paper use rule of the Larger-the-Better, because the grade of standard is the higher the better.

$$y_{0k} = \max \{y_{ik} \mid k = 1, 2, \dots, m\} \tag{4}$$

The calculation of GRA: This paper uses Nagai's GRA to calculate the grey relation in which the reference vector is  $y_{0k}$  and the comparative vector is  $y_{ik}$ . When  $\Gamma_{0i}$  is close to 1, it means that  $y_{0k}$  and  $y_{ik}$  are highly related to each other. On the other hand, if  $\Gamma_{0i}$  is close to 0, the relationship between  $y_{0k}$  and  $y_{ik}$  is lower (Yamaguchi, Li and Nagai, 2007).

**Definition 4:** Localized GRA

$$\Gamma_{0i} = \Gamma(y_{0k}, y_{ik}) = \frac{\bar{\Delta}_{\max} - \bar{\Delta}_{0i}}{\bar{\Delta}_{\max} - \bar{\Delta}_{\min}} \quad (5)$$

$\bar{\Delta}_{0i}$  is the absolute difference of the two comparative series.

$$\bar{\Delta}_{0i} = \|y_{0k} - y_{ik}\|_p = \left( \sum_{k=1}^m [\Delta_{0i}(k)]^p \right)^{\frac{1}{p}} \quad (6)$$

Grey Relational Ordinal: The whole decision-making is made by the comparison of the grey relation  $\Gamma_{0i}$ . Through the ordinal, different causes can be identified, and the most important influent cause can be found, becoming the relational standard in the system.

**2.4. Rasch Model GSP Chart.**

Rasch Model GSP chart is a theory which is created in the year 2010 by Nagai. The grey relational theory the S-P chart shows the GSP chart, which can make the analysis of the problems more specific. Rasch Model GSP can identify students' discrimination toward test  $\alpha$ , the average of the item difficulty  $\beta$ , and the lowest rate of answering correctly  $\gamma$  according to the condition when students are answering the test items (Tzeng, Sheu, Liang, Wang and Nagai, 2012a).

**Definition 5:** Grey Student-Problem Chart

Student Problem			$P_j$ Problem Number $j = 1, 2, \dots, n$	Total Score	LGRA-S
$S_i$ Student $i = 1, 2, \dots, m$	Number		$Y = (y_{ij})$	▲ High Score $SS_i$ ▼ Low Score	$GS_i$ $i = 1, 2, \dots, m$
Avowal People			More ◀ ▶ Less $PP_j$	$\sum_{i=1}^m SS_i = \sum_{j=1}^n PP_j$	
LGRA-P			$GP_j \quad j = 1, 2, \dots, n$		

Figure 2. The Matrix of Rasch Model GSP Chart

$$GS_i = \Gamma_{0i} = \Gamma(y_{0k}, y_{ik}) = \frac{\bar{\Delta}_{\max} - \bar{\Delta}_{0i}}{\bar{\Delta}_{\max} - \bar{\Delta}_{\min}}, \text{ where } i = 1, 2, \dots, m \quad (7)$$

$$GP_j = \Gamma_{j0} = \Gamma(y_{k0}, y_{kj}) = \frac{\bar{\Delta}_{\max} - \bar{\Delta}_{j0}}{\bar{\Delta}_{\max} - \bar{\Delta}_{\min}}, \text{ where } j = 1, 2, \dots, n \quad (8)$$

**2.5. Misconception Oeder Analysis Method**

**2.5.1. Misconception-Student Chart (M-S chart).**

**Definition 6:** Misconception- Student Chart

LGRA-S \ Student	Misconception-Student Number $\hat{S}_i \quad i = 1, 2, \dots, \hat{m}$
$\gamma$	$X_\gamma = (x_i)$

Figure 3. Misconception- Student Chart

The so-called M-S chart is abbreviated from two words: Misconception and Student. Let  $x_\gamma = (x_\gamma(1), x_\gamma(2), \dots, x_\gamma(\omega), \dots, x_\gamma(\hat{m}))$ , where  $x_\gamma(\omega) \in \{0, 1\}$ , if  $x_\gamma(\omega) = 1$ , it displays that  $\omega$  person by measuring the LGRA-S =  $\gamma$  for GSP chart choosing misconception student; otherwise, if  $x_\gamma(\omega) = 0$ , it don't show the  $\omega$  person by measuring the LGRA-S =  $\gamma$  for GSP chart choosing misconception student. The data matrix of misconception- student chart measuring the LGRA-S =  $\gamma$  of person,  $x_\gamma(i) = x_i, i = 1, 2, \dots, \hat{m}, 2 \leq \hat{m} \leq m, \hat{m} \in N$ , is shown in Fig. 3.

### 2.5.2. Misconception-Problem Chart (M-P chart).

This paper selected the students whose Gamma value near  $\gamma$ , then selected those students' at the same time answer with the wrong and correct answers, that show the students' misconception problems, defined as misconception problems  $\hat{P}_j$ .

**Definition 7:** Misconception Student-Problem Chart

Student Problem	$\hat{P}_j$ Problem Number $j = 1, 2, \dots, n$	Total Score	LGRA-S
$\hat{S}_i$ Student Number $i = 1, 2, \dots, m$	$\hat{Y} = (\hat{y}_{ij})$	▲ High Score $SS_i$ ▼ Low Score	$GS_i$ $i = 1, 2, \dots, m$
Avowal People	More $PP_j$ ◀ ▶ Less		
LGRA-P	$GP_j \quad j = 1, 2, \dots, n$		

Figure 4. The Matrix of Misconception Student-Problem Chart

$$\hat{P}_j = \begin{cases} \bigvee_{i=1}^m \hat{y}_{ij} = 0, & \text{for } i = 1, 2, \dots, \hat{m} \\ \bigvee_{i=1}^m \hat{y}_{ij} = 1, & \text{for } i = 1, 2, \dots, \hat{m} \end{cases} \quad \text{where} \quad \bigvee_{i=1}^m \hat{y}_{ij} = \hat{y}_{1j} \vee \hat{y}_{2j} \vee \dots \vee \hat{y}_{ij} \vee \dots \vee \hat{y}_{mj}, \quad \text{for } i = 1, 2, \dots, \hat{m} \quad (9)$$

### 2.5.3. Problem-Concept Chart (P-C chart).

The so-called P-C chart is abbreviated from two words: Problem and Concept, the ordinate axis of P-C chart is series of questions, and horizontal axis is the concept of the test.

Let  $z_j = (z_j(1), z_j(2), \dots, z_j(v), \dots, z_j(\xi))$ , where  $z_j(v) \in \{0, 1\}$ , and  $z_j$  show the  $j$  question test the concept. If  $z_j(v) = 1$ , that shows the  $j$  question test the concept of  $v$ ; otherwise, if  $z_j(v) = 0$ , that shows the  $j$  question don't testing the concept of  $v$ , shown in Fig. 5.

**Definition 8:** Problem-Concept Chart

Problem	Concept	$C_k$ Concept Number $k = 1, 2, \dots, \xi$
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$P_j$ Problem Number $j = 1, 2, \dots, n$	$Z = (z_{jk})$
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Figure 5. Problem -Concept Chart

#### 2.5.4. Misconception-Concept Chart (M-C chart).

$$U = X \times \hat{Y} \times Z$$

(10)

**Definition 9:** Misconception - Concept Chart

LGRA-S	Concept	$C_k$ Concept Number $k = 1, 2, \dots, \xi$
$\gamma$		$U = (u_k)$

Figure 6. Misconception - Concept Chart

Let  $u_\gamma = (u_\gamma(1), u_\gamma(2), \dots, u_\gamma(v), \dots, u_\gamma(\xi))$ , where  $u_\gamma(v) \in N \cup \{0\}$ ,  $\mu$  display the numbers of misconception testers whose LGRA-S value near  $\gamma$ . Now  $\rho = \hat{m}$ ,  $u_\gamma(k) = u_k$ ,  $k = 1, 2, \dots, \xi$ , display the matrix of misconception-concept chart, shown in Fig. 6.

#### 2.5.5. Misconception Rate.

**Definition 10:** Misconception Rate

$$M = (\mu_\gamma(v)) \quad (11)$$

M shows the matrix of misconception rate,  $\mu_\gamma(v) = \frac{u_\gamma(v)}{\lambda}$ , shows the misconception rate of the concept  $v$ , where  $\lambda = \max\{u_\gamma(1), u_\gamma(2), \dots, u_\gamma(v), \dots, u_\gamma(\xi)\}$ ,  $\mu_\gamma = (\mu_\gamma(1), \mu_\gamma(2), \dots, \mu_\gamma(v), \dots, \mu_\gamma(\xi))$ , where  $0 \leq \mu_\gamma(v) \leq 1$ .

#### 2.5.6. Misconception Order.

The misconception order compares with the misconception rate in accordance with  $\mu_\gamma(v)$  value. Through the sorting, we can discern the degree of the misconception.

**Definition 11:** Misconception Order

$$\hat{\mu}_\gamma = (\hat{\mu}_\gamma(1), \hat{\mu}_\gamma(2), \dots, \hat{\mu}_\gamma(i), \hat{\mu}_\gamma(j), \dots, \hat{\mu}_\gamma(\xi)), \text{ for } 0 \leq \hat{\mu}_\gamma(j) \leq \hat{\mu}_\gamma(i) \leq 1, \forall i < j \quad (12)$$

### 2.6. Rough Set Theory

Rough Set Theory is put forward by Pawlak in the year 1982.

#### 2.6.1. Students' answers reaction Chart

**Definition 12:** Students' answers reaction Chart (SR)

Student Problem	$P_j$ Problem Number $j = 1, 2, \dots, n$
$S_i$ Student Number $i = 1, 2, \dots, m$	$\tilde{Y} = (\tilde{y}_{ij})$

Figure 7. The Matrix of Students' answers reaction Chart (SR)  
(The present study derived.)

$$\tilde{Y}_j = \begin{cases} \tilde{y}_{ij} = 0 & , \text{ for } y_{ij} = 1; i = 1, 2, \dots, m; j = 1, 2, \dots, n \\ \tilde{y}_{ij} = 1 & , \text{ for } y_{ij} = 0; i = 1, 2, \dots, m; j = 1, 2, \dots, n \end{cases} \quad (13)$$

### 2.6.2. The Matrix of Students with Condition Attributes

$$\hat{U} = \tilde{Y} \times Z \quad (14)$$

$$\hat{u}_{ik} = \sum_{j=1}^n \tilde{y}_{ij} z_{jk} \quad , \text{ for } y_{ij} = 1; i = 1, 2, \dots, m; k = 1, 2, \dots, \xi \quad (15)$$

**Definition 13:** Students with Condition Attributes Chart (SC)

Student Record	$C_k$ Condition Attributes Number $k = 1, 2, \dots, \xi$
$S_i$ Student Number $i = 1, 2, \dots, m$	$\hat{U} = (\hat{u}_{ik})$

Figure 8. The Matrix of Students with Condition Attributes Chart (SCD) (The present study derived.)

### 2.6.3. The Matrix of Students with Condition and Decision Attributes

$$D = X_{\gamma_{cs}} = (x_i) \quad , \quad \text{where} \quad i = 1, 2, \dots, m \quad (13)$$

$$\tilde{U} = \begin{cases} \tilde{u}_{ik} = 0 & , \text{ for } 0 \leq \hat{u}_{ik} \leq \rho \times \sum_{j=1}^n z_{jk}; i = 1, 2, \dots, m; k = 1, 2, \dots, \xi \\ \tilde{u}_{ik} = 1 & , \text{ for } \rho \times \sum_{j=1}^n z_{jk} \leq \hat{u}_{ik}; i = 1, 2, \dots, m; k = 1, 2, \dots, \xi \end{cases} \quad (14)$$

In this paper  $\rho = 1/3$

**Definition 14:** Students with Condition and Decision Attributes Chart (SCD)

Student Record	$C_k$ Condition Attributes Number $k = 1, 2, \dots, \xi$	$D$ Decision Attributes
$S_i$ Student Number $i = 1, 2, \dots, m$	$\tilde{U} = (\tilde{u}_{ik})$	$x_i \quad i = 1, 2, \dots, m$

Figure 9. The Matrix of Students with Condition and Decision Attributes Chart (SCD) (The present study derived.)

### 2.6.4. The Matrix of Students with Condition and Decision Reduct Attributes

$$C_k \times D = \{(\hat{u}_{i1}, \dots, \hat{u}_{i\xi}, x_i) \mid \text{for } (\hat{u}_{i1}, \dots, \hat{u}_{i\xi}, x_i) \neq (\hat{u}_{i+11}, \dots, \hat{u}_{i+1\xi}, x_{i+1}), 0 \leq i \leq \hat{m} \leq m\}$$

**Definition 15:** Students with Condition and Decision Attributes Reduct Chart (SCDR)

Student Record	$C_k$ Condition Attributes Number $k = 1, 2, \dots, \xi$	$D$ Decision Attributes
$S_i$ Student Number $i = 1, 2, \dots, m$	$\hat{U} = (\hat{u}_{ik})$	$\hat{x}_i \quad i = 1, 2, \dots, m$

Figure 7. The Matrix of Students with Condition and Decision  
Attributes Reduct Chart (SCDR) (The present study derived.)

**Definition 16** : Information System (IS) :

$W = IS(S, R, T, f)$  is a knowledge system (information system). In which,  $S$  is finite set.  $R$  is a rough set,  $R = C \cup D$ ,  $C$  is condition attribute set,  $D$  is decision attribute set,  $C \cap D = \emptyset$ ,  $D \neq \emptyset$ .  $T$  is the attribute's values set,  $T = \bigcup_{r \in R} T_r$ .  $f$  is the mapping (information function)  $f: S \times R \rightarrow T$ ,  $\forall x \in S, r \in R, f(x, r) \in T_r$ .

**Definition 17** : Equivalence relation  $ind(C)$  :

For every attribute subset  $C \subseteq R$ , the equivalence relation  $ind(C)$  is defined as :

$$ind(C) = \{(\bar{u}_i, \bar{u}_j) \in S \times S, \forall c \in C, c(\bar{u}_i) = c(\bar{u}_j)\}$$

$ind(C)$  can be abbreviated as  $C$ .

For every subset  $X \subseteq S$  and an equivalence relation  $C \in ind(S)$ , the lower approximation of  $X$  can be definite as  $\underline{R}X = \bigcup \{\tilde{X} \in S/R \mid \tilde{X} \subset X\}$ , and the upper approximation of  $X$  can be definite as  $\bar{R}X = \bigcup \{\tilde{X} \in S/R \mid \tilde{X} \cap X \neq \emptyset\}$ .

Then, the positive region and the negative region of  $X$  can be denoted as  $pos_R(X) = \underline{R}X$  and  $bn_R(X) = S - \bar{R}X$ .

Reduct and independent :

$R$  is a set in equivalence relation. If  $ind(C) = ind(C - \{c\})$ , when  $c \in C$ ; then we say  $c$  is reduct in  $C$ . On the contrary, If  $ind(C) \neq ind(C - \{c\})$ , when  $c \in C$ ; then we say  $c$  is indenpent in  $C$ .

**Definition 18** : dependents :

Let  $C, D$  are two equivalence relation in the set  $S$ , then  $C$  is depended by  $D$  with the dependency degree of  $\gamma_c(D)$ . Define dependents :

$$\gamma_c(D) = \frac{|pos_c(D)|}{|W|}, \text{ where } pos_c(D) = \bigcup_{X \in S/D} C(X) \quad (15)$$

$D$  can be derived completely by  $C$ , when  $\gamma_c(D) = 1$ .

$D$  can be derived partially by  $C$ , when  $0 < \gamma_c(D) < 1$ .

$D$  can't be derived completely by  $C$ , when  $\gamma_c(D) = 0$ .

**Definition 19** : Significant

$$\sigma_{(C,D)}(C_i) = \frac{\gamma_C(D) - \gamma_{C-\{C_i\}}(D)}{\gamma_C(D)} = 1 - \frac{\gamma_{C-\{C_i\}}(D)}{\gamma_C(D)}. \quad (16)$$

**Definition 20** : Reduct

Let  $C \subseteq C$ , if  $ind(C) = ind(C)$ ,  $C$  can be called  $a$ -reduct relative to  $C$ , denoted as  $red(C)$ .

**Definition 21** : Core

The intersection of all  $red(C)$  is called  $a$ -core.  $core(C) = \bigcap red(C)$

### 3. Research methods

#### 3.1. The data reliability test

In this paper, take the seventh grade of the same school on a math paper test data for example. The numbers of the students in 104 classes are twenty-nine, the numbers of the questions are fifteen, and the numbers of the concept are ten. Before the analysis, the researchers firstly carried out a reliability test for the answers of this class. The result showed that the Cronbach's  $\alpha$  value of the class 104 is about 0.823, which means the credibility of the information is quite high.

#### 3.2. Implementation steps

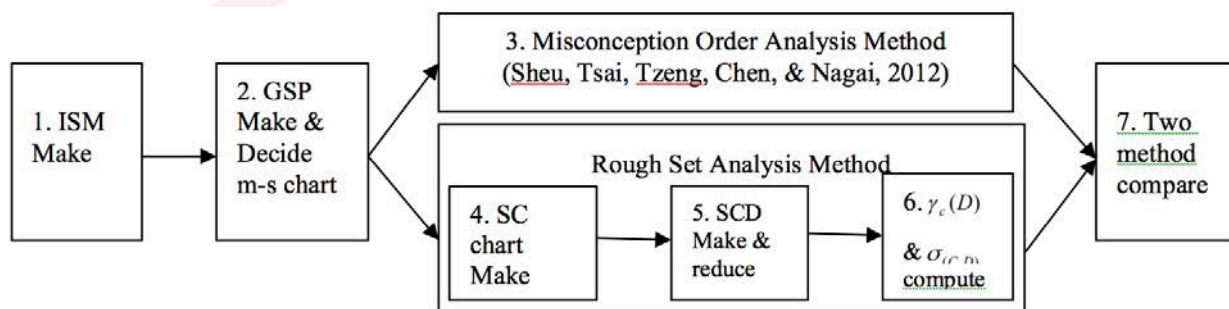


Figure 8. Implementation steps

### 4. Results and Discussion

#### 4.1. The production and analysis of the ISM conceptual structure diagram

In this paper, we use of mathematics first equation unit, “solving a Dual Linear Equations” for example, is divided into three units, ten kinds of concepts, such as shown in Table 1.

In table 2 “Concept - Concept Chart”, teachers’ evaluation is a direct way of the pairwise comparison to judge if it is associated among the concepts, and then fill “1” in the corresponding field. If it is not associated with each other, and then fill in “0” in the corresponding field.

Teachers developed Concept - Concept Chart (Table 3) through the ISM software for matrix computation to obtain the structure of ISM. (Figure 9.)

It can be find from Figure 2, it has three layers conception structure, the lowest level is the basic conception of this unit, the top is the most difficult conception. Teachers teach this unit, there are four teaching path, respectively

$C1 \rightarrow C2 \rightarrow C3 \rightarrow C4 \rightarrow C5 \rightarrow C7 \rightarrow C8$ ,  
 $C1 \rightarrow C2 \rightarrow C3 \rightarrow C4 \rightarrow C5 \rightarrow C7 \rightarrow C9 \rightarrow C10$ ,  
 $C1 \rightarrow C2 \rightarrow C3 \rightarrow C4 \rightarrow C6 \rightarrow C7 \rightarrow C8$ ,  
 $C1 \rightarrow C2 \rightarrow C3 \rightarrow C4 \rightarrow C6 \rightarrow C7 \rightarrow C9 \rightarrow C10$ .

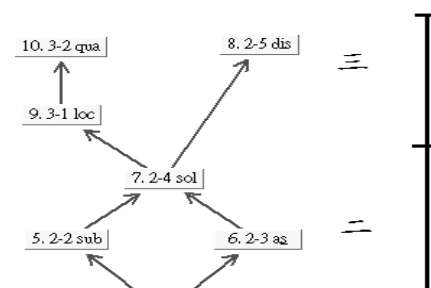
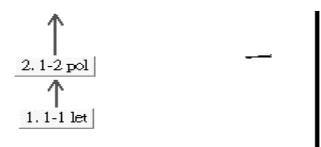


Figure 9. ISM Structure Figure



#### 4.2. Make Problem-Conception Chart

In accordance with the correspondence between the teachers’ evaluation questions and concepts, if the concepts and the questions are associated, and then we enter ‘1’ in the corresponding field. If they are not associated with each other, in the corresponding field, then we enter ‘0’, such as the question-concept chart (P-C chart) in Table 3.

### 4.3. Make SP Chart with LGRA-S and LGRA-P

The sample of this paper focuses on the seventh-grade students. The research analyzes the answering reaction of the students for mathematics first equation unit. The subjects are encoded and then respectively filled in the longitudinal coordinates of the GSP chart. And then will fill the result in the abscissa. When the answer is correct, we should fill in 1. On the contrary, fill in 0. As shown in table 4.

Based on the number of the students' correct answers, from the lower left to the right side, we can draw the same grid number equal to the same correct answer's number, such as the red line of table 5. That shows the S-curve of the students' answering questions. Then review the difficulty of the questions. According to the number of the students whose answers are correct, from the bottom left to top right, we can draw the same grid number equal to the same correct answer's number. As shown in the Blue Line of table 5, which represents the reaction of the problem in P curve.

### 4.4. The formation of Rasch Model GSP chart

Adopting LGRA-S and LGRA-P in Table 4, then sorting by Matlab software calculate to plot the Rasch Model GSP chart in Fig. 10.

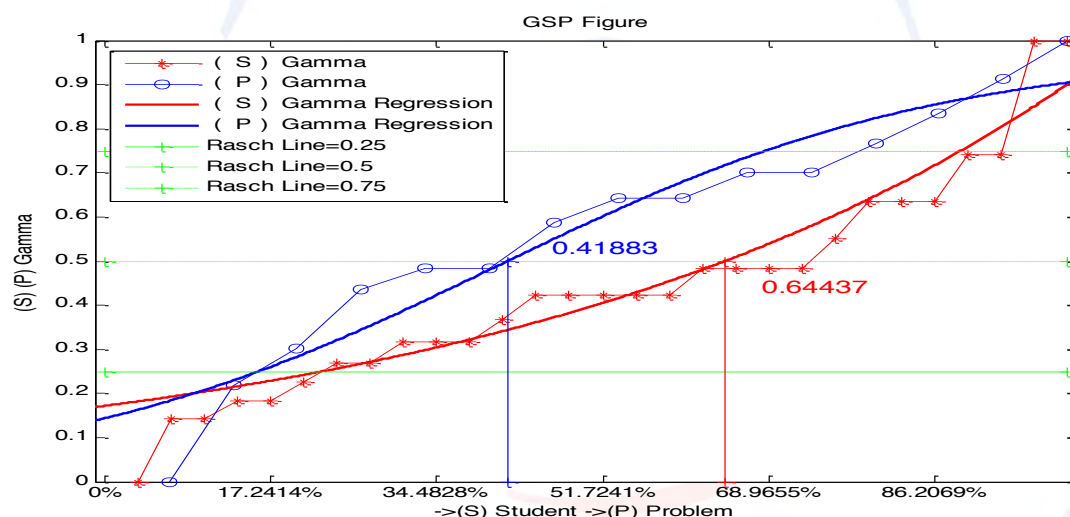


Figure 10. Rasch Model GSP chart

### 4.5. The formation and analysis of Misconception Student-Problem Chart (M-SP chart)

According to the theoretical structure of the S-P chart, the LGRA-S in table 4 can clearly identify the numbers of the students' correct answers in this class, and the situation of each question which were answered correctly. Select the students whose Gamma value is near 0.5, and those are 1, 15, 24 and 25. Then elect the questions which students answer correctly and wrongly respectively. Those are students' confused questions, and those are question 3, 8, 9, 11, 12, 14 and 15. Such as students' easily confused questions and M-SP chart in table 5.

Comparing to the misconception student-problem chart show in Table 5, with the problem-concept chart in Table 3, than shows the misconception-concept chart. To calculate the misconception rate and misconception order, than defined Sum as questions with total of the concept. And misconception order defined as various concepts divided by the maximum of the Sum, final defined misconception order of the sort of misconception rate. So we can see that the concept of

2-2 sub, 2-3 a&s, 2-4 sol, 2-5 dis and 3-1 loc are the most difficult, shown in Table 6.

According to ISM structural chart in Figure 9, analyze the cluster analysis of the concepts (Cluster Analysis). Classify the relevance of this concept into three concept classes. The bottom to top concept hierarchy is the concept class one to three. The concept class is located in the top and it is the most difficult concept papers; the bottom of the hierarchy is the basic concept of this paper. The misconception order in table 6 above presents that *C5*, *C6*, *C7*, *C8*, and *C9* in the concept class two and class three are the most critical positions of the whole problem concepts. That means teachers should strengthen this concept when teaching.

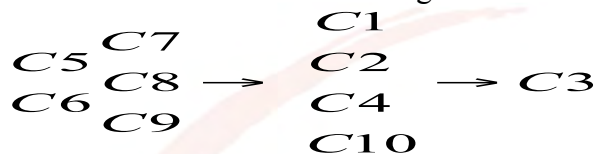


Figure 11. Misconceptions' order chart

## 5. Make 104 class Student-Condition Attribute Chart

In table 4 Student - Problem Chart, if element value is "1", and then fill "0". If element value is "0", and then fill "1", such as shown in Table 7.

### 5.1. Make Students' answers reaction

In this paper, the SCD is produced based on the knowledge system information in rough set theory. SCD chart is the decision chart, where S stands for the students, the condition attributes C means the concept of this unit need to learn, and decision attribute D is the remedial instruction that teachers need. Before making SCD chart, firstly we must have SC chart (as shown in Table 8). SC chart is obtained from the student problem chart and the problem - concept chart by the students in 104, which is on behalf of the times where students respectively got the wrong answers in the concept *C1* to *C10*. For example, from Table 7 we know that the student 10423 got the wrong answer in *P13*. And who wants to answer the problem *P13* needs the concept *C1* and *C2*. Therefore, in the class 104, the student 10423 should fill "1" in the conditions of properties *C1* and *C2*. The matrix in Table 8 and Table 4 formed Table 8 with the matrix operations.

### 5.2. Make Student-Condition Attribute Chart (SC Chart)

In the paper, the researchers define the students near  $\gamma = \text{LGRA-S} = 0.5$  as the misconception students, by according to Table 5. Because it is close to  $\text{LGRA-S} = 0.48$ , finally we judge that the misconception students are 10401, 10415, 10424 and 10425.

In SC chart, the numbers that students got the wrong answers on some of the concepts are greatly different. Through the rough set calculations in accordance with SC chart, the problem - concept chart in Table 3 shows the concept of the questions is very different. Thus we can not effectively identify students' true common misconception. Therefore, in this paper, the researchers assumed that students' wrong answer in a concept is not more than one-third of the concept problems, which can be regarded that the students do not accidentally get wrong. If the wrong answer of the concept is more than one-third of the number of the concept, it means students have the misconception. According to this idea, we can convert SC chart to SCD chart (in Table 9). In SCD chart, the number that the students got it wrong on some concepts is more than one-third of the concept, and then we write "1" and on the contrary insert a "0".

### 5.3. Make Student-Condition & Decision Attribute Chart (SCD Chart)

The attrube of 10421 and 10422 are the same, it reduct to leave 10421; the attribute of 104216 and 10423 are the same, it reduct to leave 1016; the attribute of 10401 and 10415 are the same, itreduct to leave 10401; The attribute of 10408 and 10411 are the same, it reduct to leave 10408; The attribute of 10406 and 10420 are the same, it reduct to leave 10406; and reordering and renumbering code made from Table 10.

### 5.4. Make Remedial Decision

#### 5.4.1. Correlation between the attributes

$$\begin{aligned} S/IND(\{C\}) &= S/IND(\{C1,C2,C3,C4,C5,C6,C7,C8,C9,C10\}) \\ &= \{N1\},\{N2\},\{N3\},\{N4\},\{N5\},\{N6\},\{N7\},\{N8,N9\},\{N10\},\{N11\},\{N12\},\{N13\}, \\ &= \{N14\},\{N15\},\{N16\},\{N17\},\{N18\},\{N19\},\{N20\},\{N21\},\{N22\},\{N23\},\{N24\} \end{aligned}$$

If the decision attribute D is Yes, the equivalence relation calculated in accordance with the conditional probability and regardless discernible relationship, the following results can be obtained.

$$\begin{aligned} X_1 &= \{S|D(S) = Yes\} = \{N6, N8, N11\} \quad \text{Upper approximations} \quad \bar{R}X_1 = \{N6, N8, N9, N11\} \\ \text{Lower approximations} \quad \underline{R}X_1 &= \{N6, N11\} \quad \text{Boundary} \quad bn_R(X_1) = \bar{R}X_1 - \underline{R}X_1 = \{N8, N9\} \\ \text{Complementary set} \quad S - \bar{R}X_1 &= \{N1, N2, N3, N4, N5, N7, N10, N12, N13, N14, N15, \\ &N16, N17, N18, N19, N20, N21, N22, N23, N24\} \end{aligned}$$

Similarly, if the decision attribute D is No, the equivalence relation calculated in accordance with the conditional probability and regardless discernible relationship, the following results can be obtained.

$$\begin{aligned} X_2 &= \{S|D(S) = No\} = \{N1, N2, N3, N4, N5, N7, N9, N10, N12, N13, N14, N15, \\ &N16, N17, N18, N19, N20, N21, N22, N23, N24\} \\ \text{Upper approximations} \quad \bar{R}X_2 &= \{N1, N2, N3, N4, N5, N7, N8, N9, N10, N12, N13, N14, \\ &N15, N16, N17, N18, N19, N20, N21, N22, N23, N24\} \\ \text{Lower approximations} \quad \underline{R}X_2 &= \{N1, N2, N3, N4, N5, N7, N10, N12, N13, N14, N15, \\ &N16, N17, N18, N19, N20, N21, N22, N23, N24\} \\ \text{Boundary} \quad BN_R(X_2) &= \bar{R}X_2 - \underline{R}X_2 = \{N8, N9\} \quad \text{Complementary set} \quad S - \bar{R}X_2 = \{N6, N11\} \end{aligned}$$

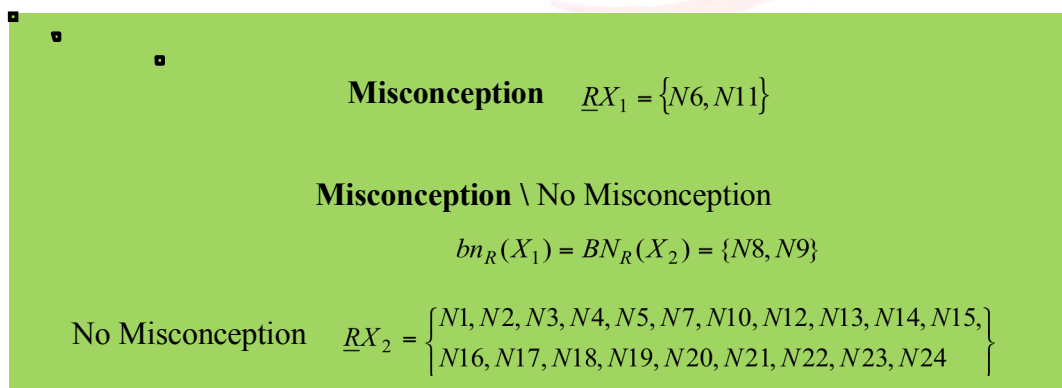


Figure 12. Figure of the misconcept students

#### 5.4.2. Calculate dependence degree

In this section, based on rough set theory, the researchers will do the reduction on SCD chart in the class 104 in order to identify the core of 104. That is a common misconception. The

researchers provide the important methods to identify the misconceptions of the core.

The dependence of the properties can determine the degree of the importance of the property. The method of the calculation of the importance is to remove the usual practice from a property and take a look at the extent of its positive domain. Thus, before calculating the importance, we must first calculate the degree of dependence.

To calculate  $\gamma_c(D)$ , the calculation process is as follows to obtain the  $\gamma_c(D) = \frac{11}{12}$

$$S/IND(\{C\}) = \{\{N1\}, \{N2\}, \{N3\}, \{N4\}, \{N5\}, \{N6\}, \{N7\}, \{N8, N9\}, \{N10\}, \{N11\}, \{N12\}, \{N13\}, \\ \{N14\}, \{N15\}, \{N16\}, \{N17\}, \{N18\}, \{N19\}, \{N20\}, \{N21\}, \{N22\}, \{N23\}, \{N24\}\}$$

$$S/IND(D) = \{\{N6, N8, N11\}, \{N1, N2, N3, N4, N5, N7, N9, N10, N12, N13\}, \\ N14, N15, N16, N17, N18, N19, N20, N21, N22, N23, N24\}$$

$$pos_c(D) = N1, N2, N3, N4, N5, N6, N7, N10, N11, N12, N13, N14, \\ N15, N16, N17, N18, N19, N20, N21, N22, N23, N24$$

$$\text{Substituting dependence formula } \gamma_c(D) = \frac{|pos_c(D)|}{|S|} = \frac{22}{24} = \frac{11}{12} \approx 0.92$$

Then calculate the individual from  $S/IND(C - C_1)$  to  $S/IND(C - C_{10})$ . The calculation results are as follows:

$$\begin{aligned} S/IND(C - C_1) &= S/IND(C - C_2) \\ &= \{\{N1\}, \{N2\}, \{N3\}, \{N4\}, \{N5\}, \{N6\}, \{N7\}, \{N8, N9\}, \{N10\}, \{N11\}, \{N12\}, \{N13\}, \\ &\quad \{N14\}, \{N15\}, \{N16\}, \{N17\}, \{N18\}, \{N19\}, \{N20\}, \{N21\}, \{N22\}, \{N23\}, \{N24\}\} \\ S/IND(C - C_3) &= \{\{N1, N2\}, \{N3\}, \{N4, N7\}, \{N5, 10\}, \{N6\}, \{N8, N9\}, \{N11\}, \{N12\}, \{N13\}, \\ &\quad \{N14\}, \{N15, N20\}, \{N16\}, \{N17\}, \{N18\}, \{N19\}, \{N21, N24\}, \{N22\}, \{N23\}\} \\ S/IND(C - C_4) &= \{\{N1\}, \{N2\}, \{N3\}, \{N4\}, \{N5\}, \{N6\}, \{N7, N12\}, \{N8, N9\}, \{N10\}, \{N11\}, \{N13\}, \\ &\quad \{N14, N15\}, \{N16\}, \{N17\}, \{N18\}, \{N19, N23\}, \{N20\}, \{N21\}, \{N22\}, \{N24\}\} \\ S/IND(C - C_5) &= \{\{N1\}, \{N2\}, \{N3\}, \{N4\}, \{N5\}, \{N6\}, \{N7\}, \{N8, N9\}, \{N10\}, \{N11\}, \{N12\}, \\ &\quad \{N13\}, \{N14\}, \{N15\}, \{N16\}, \{N17\}, \{N18\}, \{N19\}, \{N20\}, \{N21\}, \{N22\}, \{N23\}, \{N24\}\} \\ S/IND(C - C_6) &= \{\{N1\}, \{N2\}, \{N3\}, \{N4\}, \{N5\}, \{N6\}, \{N7\}, \{N8, N9\}, \{N10\}, \{N11\}, \{N12\}, \\ &\quad \{N13\}, \{N14\}, \{N15\}, \{N16\}, \{N17\}, \{N18\}, \{N19\}, \{N20\}, \{N21\}, \{N22\}, \{N23\}, \{N24\}\} \\ S/IND(C - C_7) &= \{\{N1\}, \{N2\}, \{N3\}, \{N4\}, \{N5, N11\}, \{N6\}, \{N7\}, \{N8, N9\}, \{N10\}, \{N12\}, \{N13\}, \\ &\quad \{N14\}, \{N15\}, \{N16\}, \{N17\}, \{N18, N21\}, \{N19\}, \{N20, N22\}, \{N23\}, \{N24\}\} \\ S/IND(C - C_8) &= \{\{N1\}, \{N2\}, \{N3\}, \{N4, N6\}, \{N5, N8, N9\}, \{N7\}, \{N10\}, \{N11\}, \{N12\}, \{N13\}, \\ &\quad \{N14\}, \{N15\}, \{N16\}, \{N17\}, \{N18\}, \{N19\}, \{N20\}, \{N21\}, \{N22\}, \{N23\}, \{N24\}\} \\ S/IND(C - C_9) &= \{\{N1\}, \{N2\}, \{N3\}, \{N4\}, \{N5\}, \{N6\}, \{N7\}, \{N8, N9\}, \{N10\}, \{N11\}, \{N12\}, \\ &\quad \{N13\}, \{N14\}, \{N15, N18\}, \{N16\}, \{N17, N19\}, \{N20\}, \{N21\}, \{N22, N24\}, \{N23\}\} \\ S/IND(C - C_{10}) &= \{\{N1\}, \{N2\}, \{N3\}, \{N4, N5\}, \{N6, N8, N9\}, \{N7, N10\}, \{N11\}, \{N12\}, \{N13\}, \\ &\quad \{N14\}, \{N15\}, \{N16\}, \{N17\}, \{N18\}, \{N19\}, \{N20\}, \{N21\}, \{N22\}, \{N23, N24\}\} \end{aligned}$$

Using (15) to calculate dependence of condition attributes, such as show in Table 11.

Table 11. Dependence of Condition Attributes

Condition Attributes	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
$\gamma_c(D)$	$\frac{11}{12}$	$\frac{11}{12}$	$\frac{11}{12}$	$\frac{11}{12}$	$\frac{11}{12}$	$\frac{11}{12}$	$\frac{5}{6}$	$\frac{19}{24}$	$\frac{11}{12}$	$\frac{7}{8}$

### 5.4.3. Calculate Significant degree

Finally, to calculate significant of condition attributes by using formula (16)  
 $\sigma_{(C,D)}(C_i) = 1 - \frac{\gamma_{C-\{C_i\}}(D)}{\gamma_C(D)}$ . The order of Significant of each attribute as  
 $C1 = C2 = C3 = C4 = C5 = C6 = C9 < C10 < C7 < C8$ , such as show in Table 12.

Table 12. Significant of Condition Attributes

Condition Attributes	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
$\sigma_{(C,D)}(C_i)$	0	0	0	0	0	0	$\frac{1}{11}$	$\frac{3}{22}$	0	$\frac{1}{22}$

According to the results in Table 12, attribute C1, C2, C3, C4, C5, C6 and C9 are redundant can be removed to obtain a reduct  $red(C) = \{C7, C8, C10\}$ . So  $core(C) = \{C7, C8, C10\}$ .

#### 5.4.4. Common misconceptions in the class 104

By using the importance of rough set theory and misconception order method, the result showed that the students of 104 in the C7, C8 and C10 have the same misconception, which was displayed in the Dual Linear Equations unit. However, Rough set can simplify the redundant data and reduce the unnecessary factors. That means that the class 104 directly does the remedial instruction for these three part "Equation solution of checking", "solution class" and "Quadrant coordinate"

The use of Rough set method has the same conclusion with the misconception order of Rasch Model GSP, and it can effectively filter out the misconception of the core.

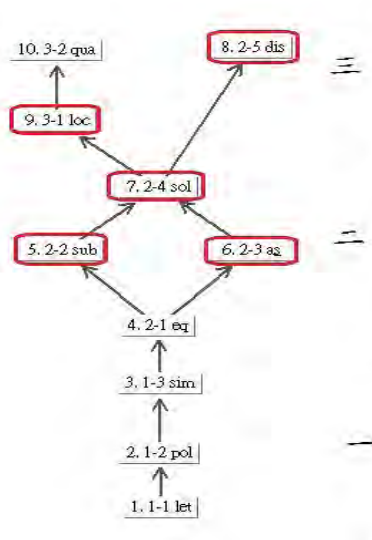


Figure 13. Structure by Misconcept order Method

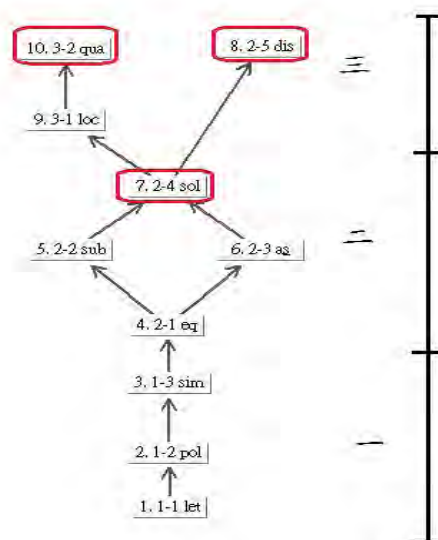


Figure 14. Structure by Rough Set Method

## 6. Conclusion

This paper is based on rough set theory and combines with ISM (Interpretive Structural Modeling) to analyze students' misconceptions. The object of the paper aims at the junior high school students of the central country in the Dual Linear Equations unit. "Misconception analysis and Rough set analysis are used in this paper to calculate the separate misconception order of the two classes. And then set the appropriate remedial teaching decision in accordance with the

different degree of each class. Finally, by combining with ISM chart, we can compare the high and low degree of the classes, hoping to provide teachers an easy and effective tool when doing the diagnosis. The results are listed as follows:

From the structure of ISM concept, we can clearly see that the conceptual block diagrams have three layers in Dual Linear Equations unit cell. The lowest level is the basic concept of this unit, and the top level is the most difficult concept. When teachers teach this unit, there are four teaching path, that is

$C1 \rightarrow C2 \rightarrow C3 \rightarrow C4 \rightarrow C5 \rightarrow C7 \rightarrow C8$ ,  $C1 \rightarrow C2 \rightarrow C3 \rightarrow C4 \rightarrow C5 \rightarrow C7 \rightarrow C9 \rightarrow C10$ ,  
 $C1 \rightarrow C2 \rightarrow C3 \rightarrow C4 \rightarrow C6 \rightarrow C7 \rightarrow C8$ , and  $C1 \rightarrow C2 \rightarrow C3 \rightarrow C4 \rightarrow C6 \rightarrow C7 \rightarrow C9 \rightarrow C10$ .

From the use of misconception order analysis method, the class 104 gets the most misconceptions order, and that are  $C5$ ,  $C6$ ,  $C7$ ,  $C8$  and  $C9$ . From the rough set analysis method of Rough set method, the class 104 gets the most misconceptions, and that are  $C8$ ,  $C7$ , and  $C10$ . The result showed that the importance method of rough set method and misconception order got the same results. Dual Linear Equations in this unit, the students of 104 have the common misconception in the  $C7$  and  $C8$ . And Rough set can simplify the redundant data and reduce out unwanted factors. As a result the class can directly do the remedial teaching for these three part "Equation solution of checking", "solution class" and "Quadrant coordinate".

The use of rough sets does not need to provide a subjective assessment of knowledge or data. And we can achieve to remove redundant information based on student test data. By using the clustering results of students' tests, we can compare learn the roughness of each group who has the original knowledge. Then we can define the importance where the leaning misconception is and thus determine the structure of the misconception order to provide the remedial instruction as the reference.

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**Tabel 1 Unit Concept Chart**

Code	Simple Code	Concept
Unit 1	Unit1	Symbols to represent numbers
C1	1-1 let	Suppose variable
C2	1-2 pol	Polynomial implication
C3	1-3 sim	Polynomial simplification
Unit 2	Unit 2	Equationl solution
C4	2-1 eq	Equationl implication
C5	2-2 sub	Substituted elimination method
C6	2-3 a&s	Addition or subtraction method
C7	2-4 sol	Equation solution of checking
C8	2-5 dis	Solution class
Unit 3	Unit 3	Rectangular coordinates planes
C9	3-1 loc	Coordinate location
C10	3-2 qua	Quadrant coordinate

**Table 2 Concept - Concept Chart**

	1-1	1-2	1-3	2-1	2-2	2-3	2-4	2-5	3-1	3-2
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Concept Concept	1-1 let	1-2 pol	1-3 sim	2-1 eq	2-2 sub	2-3 a&s	2-4 sol	2-5 dis	3-1 loc	3-2 qua
1-1 let	0	1	1	0	0	0	0	0	0	0
1-2 pol	0	0	1	0	0	0	0	0	0	0
1-3 sim	0	0	0	1	0	0	0	0	0	0
2-1 eq	0	0	0	0	1	1	0	0	0	0
2-2 sub	0	0	0	0	0	0	1	1	0	0
2-3 a&s	0	0	0	0	0	0	1	1	0	0
2-4 sol	0	0	0	0	0	0	0	1	1	0
2-5 dis	0	0	0	0	0	0	0	0	0	0
3-1 loc	0	0	0	0	0	0	0	0	0	1
3-2 qua	0	0	0	0	0	0	0	0	0	0

**Table 3 Problem-Concept Chart**

Concept Problem	1-1 let	1-2 pol	1-3 sim	2-1 eq	2-2 sub	2-3 a&s	2-4 sol	2-5 dis	3-1 loc	3-2 qua
P1	0	0	1	0	0	0	0	0	0	0
P2	0	0	0	0	1	1	0	0	0	0
P3	0	0	0	0	0	0	0	1	0	0
P4	0	0	0	0	0	0	0	0	1	0
P5	0	0	0	0	1	1	0	0	0	0
P6	0	0	0	1	0	0	0	0	0	0

$P7$	0	0	1	1	0	0	0	0	0	0
$P8$	0	0	0	0	0	0	0	0	1	0
$P9$	0	0	0	0	0	0	0	0	1	0
$P10$	0	0	0	0	1	0	1	0	0	0
$P11$	0	0	0	0	0	0	0	0	0	1
$P12$	0	0	0	0	1	1	1	0	0	0
$P13$	1	1	0	0	0	0	0	0	0	0
$P14$	0	1	0	0	0	0	1	0	0	0
$P15$	1	0	0	1	1	1	0	1	0	0
Number of concept	2	2	2	3	5	4	3	2	3	1
<b>Number of concept/3</b>	0.67	0.67	0.67	1.00	1.67	1.33	1.00	0.67	1.00	0.33

Table 4 Student-Problem Chart

Problem ID	10	11	12	16	15	19	14	18	17	12	15	13	14	11	13	Number of correct answers	LGRA-S
10421	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	1
10422	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	1
10423	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	14	0.74
10429	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	14	0.74
10403	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	13	0.63
10416	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	13	0.63
10426	1	1	1	1	1	1	1	1	0	1	1	1	1	1	0	13	0.63
10414	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	12	0.55
10401	1	1	1	1	1	1	1	1	1	0	1	0	0	0	0	11	0.48
10415	1	1	1	1	1	1	0	1	1	1	0	1	0	0	0	11	0.48
10424	1	1	1	1	1	1	1	1	0	1	1	0	0	0	0	11	0.48
10425	1	1	1	1	0	1	1	1	1	1	0	0	1	0	1	11	0.48
10404	1	1	1	1	1	1	1	0	1	0	0	1	0	0	0	10	0.42
10407	1	1	1	1	1	0	1	1	1	0	0	1	0	0	0	10	0.42
10410	1	1	1	1	0	1	1	0	0	1	1	1	0	0	0	10	0.42

10411	11	1	1	1	0	1	1	1	1	0	1	0	1	0	0	10	0.42
10427	11	1	0	1	1	0	1	0	1	1	1	1	0	1	0	10	0.42
10408	11	0	1	0	0	1	1	1	1	0	1	1	0	0	09	0.37	
10413	11	1	0	0	0	1	1	1	1	0	1	0	0	0	08	0.32	
10417	00	1	1	1	1	1	1	1	0	1	0	0	0	0	08	0.32	
10419	11	0	1	1	1	1	0	0	1	0	1	0	0	0	08	0.32	
10405	11	1	1	1	1	0	1	0	0	0	0	0	0	0	07	0.27	
10406	11	1	1	1	1	0	0	0	0	0	1	0	0	0	07	0.27	
10428	00	0	1	0	1	1	0	1	0	1	0	0	1	0	06	0.23	
10409	11	1	0	0	0	0	0	1	1	0	0	0	0	0	05	0.18	
10412	00	0	0	0	1	0	0	1	0	1	0	1	1	0	05	0.18	
10402	11	1	0	0	0	0	0	1	0	0	0	0	0	0	04	0.14	
10418	10	0	0	1	0	0	0	0	0	0	0	0	1	1	14	0.14	
10420	00	0	0	0	0	0	0	0	0	0	0	0	0	0	00	0	
People of correct answer	2254	23	22	22	22	22	21	11	11	11	11	11	11	5274			
LGRA-P	1091	084	077	077	076	076	054	074	078	078	073	072	072				

**Table 5 Misconception Student and Problem Chart (M-SP Chart)**

Problem ID \	3	8	9	11	12	14	15	Number of correct answer	<i>LGRA-S</i>
10401	1	1	1	0	1	0	0	11	0.48
10415	0	0	1	0	1	1	1	11	0.48
10424	1	1	1	0	0	0	1	11	0.48
10425	0	1	0	1	1	0	1	11	0.48

**Table 6 Misconception-Concept Chart**

(M-C Chart)

Concept Problem	let C1	po C2	si C3	2-1 eq C4	2-2s C5	2-3 a & s C6	2-4 so l C7	2-5 di s C8	3-1 lo c C9	3-2 qu a C10
3	0	0	0	0	0	0	0	1	0	0
8	0	0	0	0	0	0	0	0	1	0
9	0	0	0	0	0	0	0	0	1	0
11	0	0	0	0	0	0	0	0	0	1
12	0	0	0	0	1	1	1	0	0	0
14	0	1	0	0	0	0	1	0	0	0
15	1	0	0	1	1	1	0	1	0	0
Sum	1	1	0	1	2	2	2	2	2	1
Misconception Rate	0.50	0.50	0.00	0.50	1.00	1.00	1.00	1.00	1.00	0.50
Misconception Order	2	2	3	2	1	1	1	1	1	2

Table 7 Students' answers reaction

Problem ID	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15
10401	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1
10402	0	0	1	1	1	1	0	1	1	0	1	1	1	1	1
10403	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0
10404	0	0	1	0	0	0	1	0	0	0	1	0	1	0	1
10405	0	0	1	1	0	0	1	0	0	0	1	1	1	1	1
10406	0	0	0	1	0	0	1	1	0	0	1	1	1	1	1
10407	0	0	1	1	0	0	0	0	0	0	1	0	1	0	1
10408	0	1	0	0	1	0	0	0	1	0	1	0	1	0	1
10409	0	0	1	1	1	1	0	1	1	0	1	0	1	1	1
10410	0	0	0	0	0	0	1	0	1	0	1	1	1	0	0
10411	0	0	1	0	1	0	0	0	0	0	1	1	1	0	0
10412	1	1	1	1	1	1	0	1	0	1	0	1	1	0	0
10413	0	0	0	0	1	1	0	0	1	0	1	0	1	1	1
10414	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0
10415	0	0	1	0	0	0	0	1	0	0	1	0	1	0	0
10416	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
10417	1	0	1	0	0	0	0	0	0	1	1	1	1	1	0
10418	1	1	1	1	0	1	1	1	1	0	0	1	0	1	1
10419	0	1	0	0	0	0	1	1	0	0	1	0	1	1	1
10420	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
10421	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10422	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10423	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0

10424	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0
10425	0	0	1	0	0	0	0	0	1	0	0	0	1	1	0
10426	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0
10427	0	0	0	1	0	1	1	0	0	0	0	0	1	1	0
10428	1	1	1	0	1	0	0	1	0	1	0	1	1	1	0
10429	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0

Table 8 Student-Condition Attribute Chart

Student Attribute	Condition Attributes C									
ID	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
10401	2	2	0	1	1	1	1	1	0	1
10402	2	2	0	2	3	3	2	2	3	1
10403	0	0	1	1	1	1	1	0	0	0
10404	2	1	1	2	1	1	0	2	0	1
10405	2	2	1	2	2	2	2	2	1	1
10406	2	2	1	2	2	2	2	1	2	1
10407	2	1	0	1	1	1	0	2	1	1
10408	2	1	0	1	3	3	0	1	1	1
10409	2	2	0	2	2	2	1	2	3	1
10410	1	1	1	1	1	1	1	0	1	1
10411	1	1	0	0	2	2	1	1	0	1
10412	1	1	1	1	4	3	2	1	2	0
10413	2	2	0	2	2	2	1	1	1	1
10414	1	2	0	0	0	0	1	0	0	1
10415	1	1	0	0	0	0	0	1	1	1
10416	1	2	0	0	0	0	1	0	0	0
10417	1	2	1	0	2	1	3	1	0	1
10418	1	1	2	3	3	3	2	2	3	0
10419	2	2	1	2	2	2	1	1	1	1
10420	2	2	2	3	5	4	3	2	3	1
10421	0	0	0	0	0	0	0	0	0	0
10422	0	0	0	0	0	0	0	0	0	0
10423	1	1	0	0	0	0	0	0	0	0
10424	1	2	0	0	1	1	2	0	0	1
10425	1	2	0	0	0	0	1	1	1	0
10426	1	1	1	1	0	0	0	0	0	0
10427	1	2	1	2	0	0	1	0	1	0
10428	1	2	1	0	4	3	3	1	1	0
10429	0	0	0	0	0	0	0	0	0	1

Table 9 Student-Condition & Decision Attribute Chart

Student Attribute	Condition Attributes C										Decision Attributes D
ID	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	Misconception YES \ NO

10401	1	1	0	0	0	0	0	1	0	1	Yes
10402	1	1	0	1	1	1	1	1	1	1	No
10403	0	0	1	0	0	0	0	0	0	0	No
10404	1	1	1	1	0	0	0	1	0	1	No
10405	1	1	1	1	1	1	1	1	0	1	No
10406	1	1	1	1	1	1	1	1	1	1	No
10407	1	1	0	0	0	0	0	1	0	1	No
10408	1	1	0	0	1	1	0	1	0	1	No
10409	1	1	0	1	1	1	0	1	1	1	No
10410	1	1	1	0	0	0	0	0	0	1	No
10411	1	1	0	0	1	1	0	1	0	1	No
10412	1	1	1	0	1	1	1	1	1	0	No
10413	1	1	0	1	1	1	0	1	0	1	No
10414	1	1	0	0	0	0	0	0	0	1	No
10415	1	1	0	0	0	0	0	1	0	1	Yes
10416	1	1	0	0	0	0	0	0	0	0	No
10417	1	1	1	0	1	0	1	1	0	1	No
10418	1	1	1	1	1	1	1	1	1	0	No
10419	1	1	1	1	1	1	0	1	0	1	No
10420	1	1	1	1	1	1	1	1	1	1	No
10421	0	0	0	0	0	0	0	0	0	0	No
10422	0	0	0	0	0	0	0	0	0	0	No
10423	1	1	0	0	0	0	0	0	0	0	No
10424	1	1	0	0	0	0	1	0	0	1	Yes
10425	1	1	0	0	0	0	0	1	0	0	Yes
10426	1	1	1	0	0	0	0	0	0	0	No
10427	1	1	1	1	0	0	0	0	0	0	No
10428	1	1	1	0	1	1	1	1	0	0	No
10429	0	0	0	0	0	0	0	0	0	1	No

**Table 10 Student-Condition & Decision Attribute Reduct Chart**

Attribute Reduct Chart													
Student Attribute		Condition Attributes $C$										Decision Attributes $D$	
ID	Code	$C_1$	$C_2$	$C_3$	$C_4$	$C_5$	$C_6$	$C_7$	$C_8$	$C_9$	$C_{10}$	Misconception $YES \setminus NO$	
10421	$N1$	0	0	0	0	0	0	0	0	0	0	$No$	
10403	$N2$	0	0	1	0	0	0	0	0	0	0	$No$	
10429	$N3$	0	0	0	0	0	0	0	0	0	1	$No$	
1041	$N4$	1	1	0	0	0	0	0	0	0	0	$No$	

6													
1041	N5	1	1	0	0	0	0	0	0	0	0	1	No
1042	N6	1	1	0	0	0	0	0	0	1	0	0	Yes
1042	N7	1	1	1	0	0	0	0	0	0	0	0	No
1040	N8	1	1	0	0	0	0	0	0	1	0	1	Yes
1040	N9	1	1	0	0	0	0	0	1	0	1	1	No
1041	N10	1	1	1	0	0	0	0	0	0	0	1	No
1042	N11	1	1	0	0	0	0	0	1	0	0	1	Yes
1042	N12	1	1	1	1	0	0	0	0	0	0	0	No
1040	N13	1	1	1	1	0	0	0	1	0	1	1	No
1040	N14	1	1	0	0	1	1	0	1	0	1	1	No
1041	N15	1	1	0	1	1	1	0	1	0	1	1	No
1041	N16	1	1	1	0	1	0	1	0	1	1	0	No
1042	N17	1	1	1	0	1	1	1	1	0	0	0	No
1040	N18	1	1	0	1	1	1	0	1	1	1	1	No
1041	N19	1	1	1	0	1	1	1	1	1	0	0	No
1041	N20	1	1	0	1	1	1	1	1	1	1	1	No

2															
10	$N2$														
40		2	1	1	1	1	1	1	1	1	0	1	<i>No</i>		
5															
10	$N2$														
41		3	1	1	1	1	1	1	1	1	1	0	<i>No</i>		
8															
10	$N2$														
40		4	1	1	1	1	1	1	1	1	1	1	<i>No</i>		
6															

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*Considerations and Suggestions on University Development Strategic Cluster  
Towards Sustainability*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

This paper focuses on the higher education's policy and strategic management towards sustainable development in case of King Mongkut's University of Technology Thonburi. The strategic cluster is suggested to gear up the relevant management and policy units with the existing university-development research centers for the accomplishment of their institute's vision and flagships. On the basis of investigation, the core management and policy units in KMUTT consist of The Planning Division, The Policy Innovation Center, and The Systems Innovations Center. According to the KMUTT's vision, The Policy Innovation Center has researched and initiated the KMUTT's strategic goals. The Planning Division conducts the strategic and development plans in which The Systems Innovations Center continues managing to be the action plans. Meanwhile, several university-development research centers have been gradually established in different function and expertise: teaching and learning development, sustainability development, technological facility development, and physical facility development. The appropriate mechanisms to manage all units together will be the key success for the university's continuous improvement.

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## **Introduction: KMUTT's History in brief**

KMUTT's history has been evolved from its origin as the Thonburi Technology Institute (TTI) in 1960. In national problem-solving scenario, the lack of technicians and technologists, TTI's establishment was the first technical institute recruiting students after their completions in secondary education. Later, the institute has been developed as shown in quotation.

- By the virtue of the Technology Act, enacted on April 24, 1971, three technical institutes under the Department of Vocational Education, namely Thonburi Technical Institute (TTI), North Bangkok Technical Institute, and Nonthaburi Telecommunication Institute, were combined to form one degree-granting institution under the name of King Mongkut's Institute of Technology (KMIT) constituting three campuses. TTI thus became KMIT Thonburi Campus. In 1974, KMIT was transferred from the Ministry of Education to the Ministry of University Affairs. A new Act was enacted on February 19, 1986; the three campuses of KMIT became three autonomous institutions, each having the status of a university. KMIT Thonburi Campus henceforth became King Mongkut's Institute of Technology Thonburi (KMUTT). On March 7, 1998 as announced in the Royal Gazette, KMUTT became King Mongkut's University of Technology Thonburi (KMUTT). KMUTT is the first among public universities in Thailand to receive full autonomy. Its administrative system is now patterned after international government owned universities. The new act gives KMUTT total control over its budget, allows it to own and manage property, and grants authority to set up new faculties and departments, as well as introduce new academic programs. (<http://global.kmutt.ac.th/about/history>)

After becoming KMUTT in 1998 as an autonomous university with nation's trend in less public funding for higher education, this academic institute unavoidably committed with issues that have been debated and resolved in principle; Funding support from the government, Performance evaluation and personnel management, Autonomous university governance, and Privileges for autonomous public universities and their personnel (Kirtikara 2002).

## **KMUTT's Evolution on Strategic Development Units**

Consequently, to maintain its competitiveness and sustainability in higher education arena, several units have been gradually established relating to various aspects of university development starting with The Policy Innovation Center (PI) and Systems Innovations Center (SI) in 2000. Both centers were founded in order to collaborate with The Planning Division as in the strategic cluster. PI initiative's concept is to monitor the rapid advance in science and technology trends and issues in economic and social developments. The derived trends or impacts hence are synthesized to be the knowledge base for the university's policy and strategic managements (Policy Innovation Center 2003). Meanwhile, to connect the policies and strategies with the operational levels, SI is accountable for facilitating forums and information to cascade both top-down policies and strategies and bottom-up valuable initiatives among management, staffs and all stakeholders. This is not only to leverage the efficiency of workplace's

communication, but also the expectation to improve or create the organization's performance-based systems continuously (Systems Innovations Center 2011).

The Sustainability Management Center, named "Energy Environment Safety and Health office", was then set up to ensure the vision to be Green University (KMUTT Sustainable University 2012). This office functions in regulating code of conducts, standards, or systems and being the role model on energy, environment, safety, and health management. Becoming the implementation in university as the holistic approach, the office has to promote, support, and facilitate school, faculty, department, division, or unit within KMUTT to integrate the green policy into their workplaces and systems.

Since 2001, according to the National Education Act (1999) and one of the KMUTT's flagships towards learning organization, The Learning Institute (LI) was established and entrusted with teaching and learning development and innovation. The structure of LI has been evolved from its origin to now three functional roles. The first role is to be the research unit for teaching development and new approach to learn. Secondly, role of training and coaching new academic staffs has been deployed to support every school and department's academic staff development. And last role is to be the pilot unit for kinds of innovative pilot projects in learning within KMUTT (Learning Institute 2012). In addition, LI has been demanded from the emerging of educational trends and issues such as work-integrated learning or general education in higher education level.

The next research and development unit following into this field is The Cluster for Educational Development (C4ED 2011). The cluster, called as its generic name, determined networking and team-working approaches to develop from faculties, instructional strategies, to organization systems. In fact, the major role of this unit has been shown as the technological facility development. Its Beta Lab has been researched and developed the university online learning platform called "Learning Environment" to enhance the classroom activities to be more comprehensive with outside the classroom.

And recently, The Physical Facility Management Unit (PMU) has originated in the school of architecture and design in order to cope with issues in campus such as master plan, learning environment and space, landscape, architecture and communication design. The rationale of PMU's initiative is the incidence of physical growth among three campuses in addition with the new city-center building located nearby downtown area. The review of institute's roadmap and development plans by this unit will assist the university to layout and design the growth of physical functions and campus themes in every location with strategic alignment.



**Figure 1. The KMUTT's Timeline with Strategic Development Units**

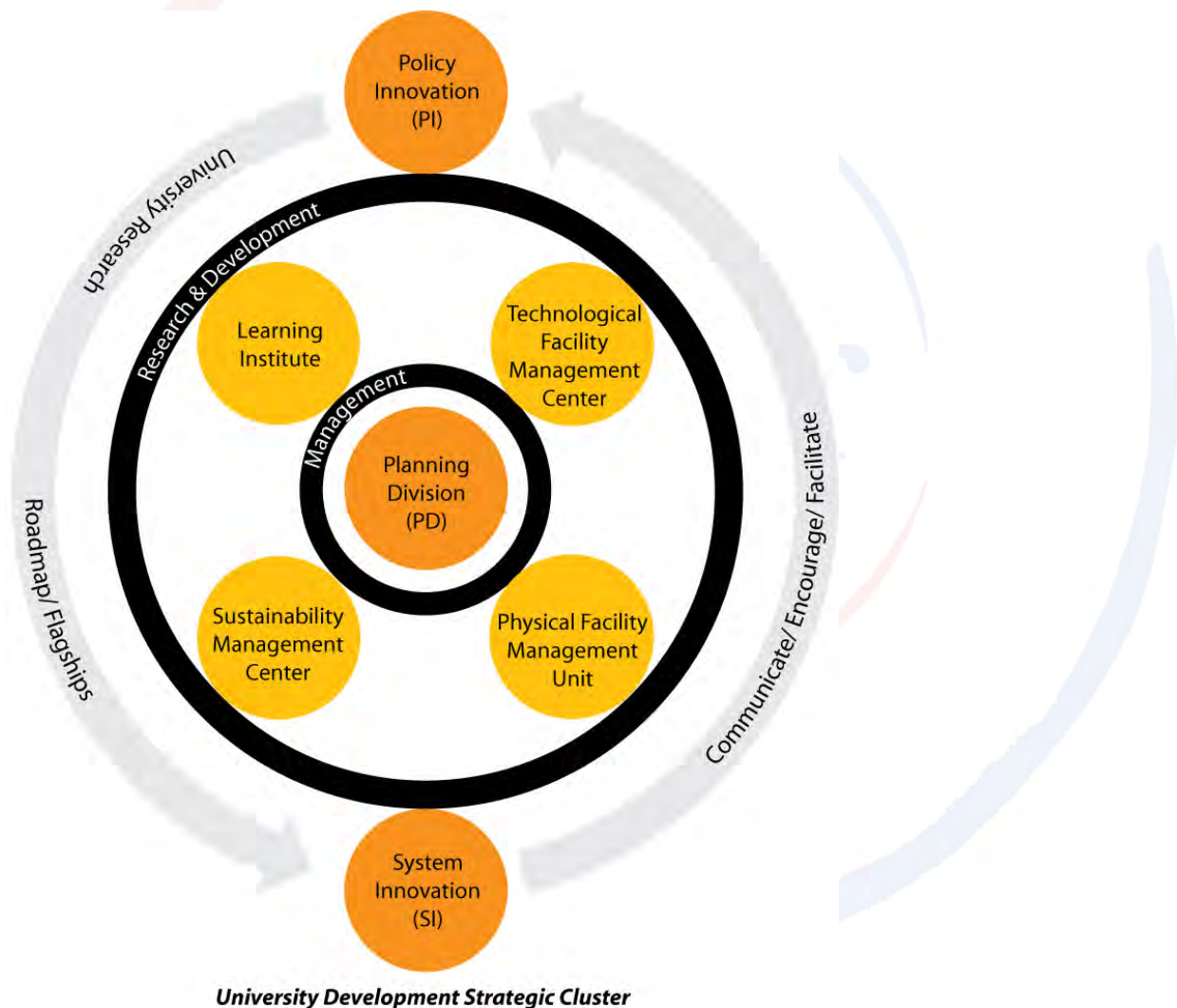
### **Suggestions on University Development Strategic Cluster towards Sustainability**

The cluster in the university's strategic development suggested in this paper is grounded on realizing that several units have already existed and functioned, but with or without well-organized coordination. Instead of setting up the new office for strategic management as the mechanism for matching strategic ambition with academic performance in university (Duggan n.d.), which probably be appropriate with other university's conditions and structures, KMUTT is potential and capable of managing collaboration or just slightly restructuring its existing organization chart as suggested in Figure 2. The Planning Division would be the center of strategic cluster. All related information from university management to the studies in research and development units will be managed with integrated decision making and planning. Coherently, there should be the session for all university's R&D units as the R&D clustering to brainstorm in multidisciplinary.

The integrative solutions from this collaborative research and development process would ensure that the university development initiatives will be aligned with the overall university's visions and strategic goals. The implementation plans out of the strategic cluster should attempt to

complement among other units. Then the organization resource allocating and sharing should be utilized efficiently and effectively.

Finally, to accomplish the strategic goals of KMUTT roadmap and flagship, the Systems Innovations Center will be responsible for the cluster's outbound roles including communication, encouragement, and facilitation through the strategic forums. The more participation from university's stakeholders means the more satisfaction in their academic activities. At the circle's end, conceptually, the long-term strategic planning or KMUTT's roadmap and flagship shall be addressed by the Policy Innovation Center with the significant study in S&T, economic and social trends towards sustainability.



**Figure 2. Diagram of University Development Strategic Cluster**

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*Project Based Learning (PjBL): Associating Comprehensive Learning and Skills  
Development in Civil Engineering*

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Abstracts

Approach in Outcome-Based Education (OBE) promotes diversity in students learning. The main concern in preparatory engineering education is to promote balance between technical and non-technical aspects in training for future engineer. Shift in curricula design has given more flexibility for educators to explore the best way in conducting courses and change conventional assessment methods. Discussion is focus in developing comprehensive assessment to cover course outcomes and design programme outcomes. The design must consider student learning time and sufficient guidance for students to execute the task. The challenges are to establish effective teaching and well design assessment to develop highly competent technical persons as well as social skills. This study is to examine the effectiveness of project based learning (PjBL) in laboratory to promote students' achievement in holistic approach. The idea is to nurture students' skills in analytical, logical, organized and structured thinking stems. Using cluster sampling, students are selected and analyzed based on given questionnaire to evaluate the perception of students towards project based learning subject. Then the questionnaires were analyse to determine the correlation between perception and performance of students towards the skills enhancement.

**Keywords:** project based learning, comprehensive assessment, skills development, student performance

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## INTRODUCTION

The approach in Outcome-Based Education (OBE) in a way promotes educators to be more comprehensive in all aspect in teaching and learning. Horak (2003) stated that it is a trend to create a balance between technical and non-technical aspects in the training and education of engineers. New curricular should be design in such way students will be able to acquired cognitive domain as well as required skills in engineering. All engineering schools in Malaysia have adapted OBE of the new higher learning education thus need to enhance people skills in conceptual and holistic thinking. One of teaching and learning approach is project based learning (PjBL). However, the challenges are to establish effective teaching and well design assessment to develop highly competent technical persons as well as social skills. The ideal way is to cultivate students' skill in analytical, logical, organized and structured thinking stems.

## PROJECT BASED LEARNING (PjBL)

Project based learning defined by Jones, Rasmussen and Moffitt (1997) as a complex tasks, based on challenging questions or problems that involve students in design, problem-solving, decision making, or investigative activities; give students the opportunity to work relatively autonomously over extended periods of time; and culminate in realistic products or presentation. This method of learning is promoted to develop students' professional problem-solving skills in engineering. The skill is required to enhance students ability to reach a solution using data that is usually incomplete, attempting to satisfy demands from clients, government and the general public that will usually be in conflict, minimizing the impacts of any solution on the social and physical environment and doing all this for the least cost possible as describe by Scott et al. (2003).

PjBL will allows student learn by doing, applying ideas while engaging in the real world activities through investigating question, proposing hypothesis and explanation, discussing their ideas and finally developing solution or outcomes. The comparison between student taking courses with the standard methodology and with PBL are students get a more general view, identify the problem, relevant information better, improve their social skill and the presentation of their work. The objectives of PjBL are to equip students with skills in critical thinking, collaboration, communication, and problem solving. Through the PjBL, the students' motivation is increased and gives the lecturers the opportunity to encourage skills as teamwork, writing technical documents and the presentations. This type of approach is to promote co-operative learning.

Co-operative learning is referred as a teaching method that needs students from various cooperation skills in a small group to achieve the same target or vision (Slavin, 1992). Cooperative learning in college is based on the theories of cognitive development, behavioral learning, and social interdependence (Morgan, 2003). Explained by Attler and Baker (2007) cooperative development is an outcome of cooperative learning, wherein constructivist knowledge development and transformation result from collaborative attempts to discover, comprehend, and decipher. Behavioral learning theory suggests that students will commit to participation in team efforts if they are rewarded for that participation, and are likely not to commit if no rewards are evident (Attler and Baker, 2007).

The students will have two responsibilities which are learning and understanding. These elements are needed for group work, and make sure all group members also understand the elements. Both responsibilities are identified as positive dependability. These components exist when a student in a certain group realizes that he or she will not succeed if the other group members are not successful as he or she is. They have to combine their effort with the group members in order to complete a particular task (Roger and Johnson, 1994). Effort from each group member is needed and without it, success will not be achieved meaning that there is no passenger. Co-operative learning is very important is the practice of interpersonal skill in order to coordinate to achieve group goal, students should have a trust and believe each group member, communicate effectively and without any doubt, accept and support each other and solve conflicts constructively (Johnson and Johnson, 1994; Johnson et al., 1991). Interpersonal skills and small group just do not come naturally when needed but the student must be taught about social skills for a high quality of cooperation and to motivate themselves to use in a productive cooperative group.

### PROJECT BASED LEARNING (PjBL) IN SOIL LABORATORY COURSE

Soil Engineering Laboratory (ECG223) is a course offered at Year II which is part four of a civil engineering diploma programmed. This course is one credit hour with three course outcomes; (i) organize standard laboratory testing, (ii) conduct experiment and interpret data for report, (iii) perform effectively as a team in carrying out the laboratory works. In this course too, student are not just to be evaluate on the technical assessment was based on the output while they also will be evaluated on the soft skill on the performance during the PjBL, by introducing open-ended project as for students' assessment. The class is divided into team consisting of 4 or 5 people. These teams are assigned to do 4 different laboratory sessions which required 2 hours per week and assigned task to be completed in 4 weeks duration of time. Table 1 is the stages that have been design for open ended project in order to carry out PjBL implementation.

Table 1: Stages in Open Ended Project in Soil Laboratory Courses

Stage	Description
Project Briefing	<p>Student will be guided with this open-ended project based on:</p> <ul style="list-style-type: none"> <li>• problem statement (identify soil location, sample requirement)</li> <li>• Laboratory session (4 different laboratory session)</li> <li>• Laboratory duration (4 weeks)</li> <li>• Submission (complete written laboratory report)</li> </ul> <p>Students' references</p> <ul style="list-style-type: none"> <li>• Laboratory manual</li> <li>• Marking rubrics</li> </ul>
Routines and	<ul style="list-style-type: none"> <li>• Assess student's ability to collect local disturbed sample</li> <li>• Conduct laboratory testing to clarify the soil classification and</li> </ul>

Tasks	<p>properties</p> <ul style="list-style-type: none"> <li>• Soil sample with soil depth at least 500mm depth and 3kg sample.</li> <li>• Soil treatment must left to room temperature for 24 hours or more.</li> <li>• Properties tests: moisture content, sieve analysis, cone penetration and particle density test.</li> </ul>
Report Writing	<p>Students' will be assessed according to:</p> <ul style="list-style-type: none"> <li>• Competency in analyzing and interpreting laboratory data</li> <li>• Standard format.</li> </ul>

## ASSESSMENT

The assessment strategy for open-ended project is to align with the course outcomes (COs) and programme outcomes (POs). However the COs are not categorized in the same domain, thus required multiple assessment. At this stage lecturer need to design these tasks to deliver the outcomes. The dominant domain is identified in Table 2. The same table shows the assessment strategy extracted from course information.

Table 2: Assessment Strategy for Soil Laboratory Course

Course Outcome	Domain	PO3	PO5	Assessment
CO1 - Organize standard laboratory testing	Cognitive	√		<ul style="list-style-type: none"> <li>• Lab report</li> <li>• Test</li> </ul>
CO2 - Conduct experiment and interpret data for report	Cognitive	√		<ul style="list-style-type: none"> <li>• Lab report</li> <li>• Test</li> </ul>
CO3 - Perform effectively as a team in carrying out the laboratory works.	Affective		√	<ul style="list-style-type: none"> <li>• Lab report</li> <li>• Test</li> </ul>
PO3: Ability to identify, formulate and solve engineering problems.				
PO5: Ability to supervise and function as a team member and have entrepreneurial capabilities.				

This information needed to design a comprehensive open-ended project question. The question has been set with two major tasks that state clearly the objectives and the activities need to be executed. The first stage is to assess students' ability to collect disturbed samples and conduct laboratory testing to clarify the soil classification and properties. The scope involved sub-soil exploration and testing. The second stage of this test is to assess students' competency in analyzing and interpreting laboratory data thus report all information in standard format.

The question is attached with set of rubrics to detail on the assessment. The rubrics are also act to detail all requirement needed before submission. This practice is to promote transparent and necessary guidance for students to plan their work in laboratory and report writing. Three major themes are identified in final report which describes as: (i) description on preliminary data on site and available resources, (ii) conducting experiment and (iii) teamwork and management. The detail on these major themes describe in Table 3. The overall process to execute this PjBL is shown in flow chart in Figure 1 that describes the whole process undertaken by students and monitoring stages needed from lecturer or laboratory supervisor.

Table 3: Lab Report Major Themes

Stage	Description
Description on preliminary data	Students are trained to be able to search data based on available data whether on-line or from relevant department. This is essential to introduced students on the importance of having desk study before executing any site works. The data collection is to include maps, drawings, details of existing or historic development, geological maps and sketching. Students with good insight will explore relevant standards to describe as referred to BS5930.
Conducting experiments	All criteria in this section as students' guide to train their data management skills. The orders are as follows: structured data management skills by using appropriate tables and templates, quality control (all data need to be checked by instructors), analyze raw data to obtain the objective of the experiments and summarized the calculated data.
Teamwork and management	Teamwork and management criteria are solely depending on report which is the end product for the all activity for this project-based learning. The criteria details are time for submission, formatting, editing and referencing. Ability to produce complete report with all requirement asks in the question will reflect how well they can work in group.

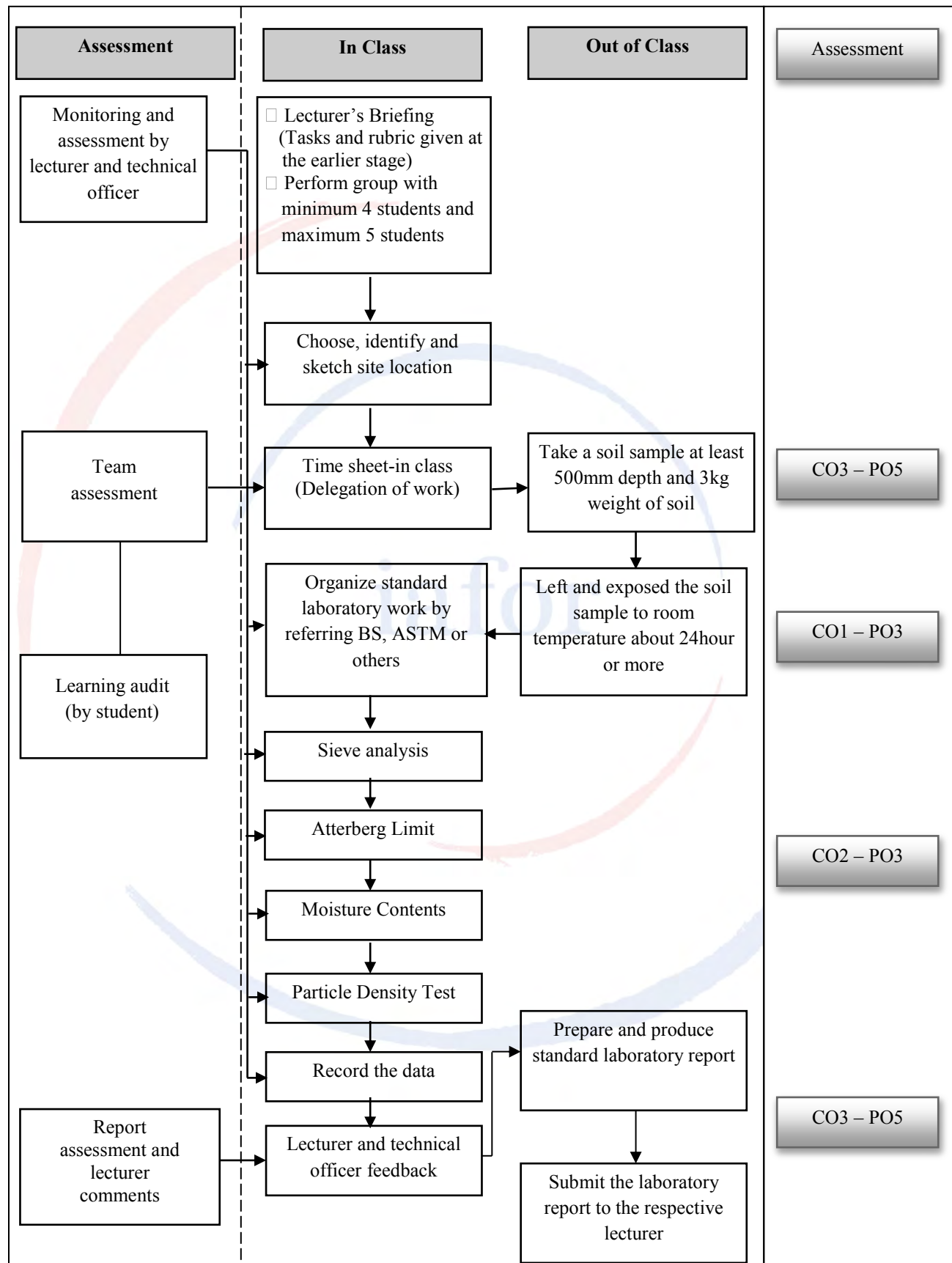


Figure 1: The processes Involved in Open Ended Laboratory Assessment for Soil Engineering Course

## DATA ANALYSIS

### Skills Development in Soil Engineering Laboratory

Table 4 shows a result of students' perception in acquiring skills from the course of ECG223. 36 numbers of students are selected and taken from cluster sampling in order to study their perception on open ended project. The questionnaire is designed based on likert scale of (1) strongly disagree; (2) disagree; (3) agree; and (4) strongly agree. The data obtained from this study will assist the course owner in continual quality improvement (CQI) stage and will be used as a baseline data for the next research. Most of the course outcomes show significant achievement where the mean value is at a range of 3.111 to 3.667. The mean value results are indicated that the students are agreed in acquiring the designed skills from the offered course which are has an ability to identify, formulate and solve engineering problems (PO3) and, has an ability to supervise and function as a team member (PO5).

Table 4: Students' Perception in Acquiring Skills from the Offered Course

Course Outcome	Students' Learning Experience	Related Program me Outcome	Mean Value	Standard Deviation
CO1: Organize standard soil laboratory testing.	I can analyse raw, interpret and observe data pattern for the use of soil engineering design	PO3	3.286	0.458
CO2: Conduct experiments and interpret data for laboratory report.	I can execute soil engineering testing (i.e.: sieve analysis, permeability, shear box, tri-axial and CBR tests)	PO3	3.472	0.506
	I can conduct field testing to determine soil bearing capacity and strength by using JKR Probe, Vane Shear and Sand Replacement Method		3.472	0.506
	I know the importance to refer to relevant standards (i.e.: British Standard, ASTM) as references		3.111	0.523

	I am able to produce standard report which detail in objective, procedure, well recorded raw data, analysis, interpretation and conclusion		3.500	0.507
CO3: Perform effectively as a team in carrying out the laboratory works.	I am able to work in a team effectively by participating actively in laboratory works and report writing	PO5	3.667	0.478
	I am able to practice my leadership skills in managing team members to execute laboratory works and report		3.639	0.487

From the study, the PO3 is achieved from two (2) course outcomes which are CO1 and CO2. The range of mean values is 3.111 to 3.500. From the observation in the class during the open ended test, the students is proficient in producing standard report (3.500) where this exercised is one of their routine task not only for this course but the others in civil engineering programme. Students also can properly conduct the experiment in the field and laboratory (3.472) for the open ended test based on their experienced in the previous courses (ECG 203 and ECG 213). The table indicates lowest mean value in PO3 for interpretation and observation of obtained results (3.286). The authors believed that the students are still in developing their skills on data evaluation since the skill is required in higher level of cognitive domain (normally designed for higher semester). Besides, the importance in referring the relevant standards (3.111) shows the lowest mean value. Students have difficulties to understand the approach and complicated terms stated in the standard. The PO5 results show the students acquired skill as a team member and a leader in a group which are 3.667 and 3.639. These results demonstrate the students are good in managing and participating actively in the laboratory work and preparing the technical report. This is good indicator to the civil engineering students which this skill is highly required in the actual field. Most of the course outcomes show significant achievement (mean value at 3.47 – 3.67), while students' rate good understanding on how to use relevant standard (3.111). It is understood that standard provide a comprehensive guide and students have difficulties to understand the complex language.

Table 5 shows the correlation of students' perception with final examination results which course outcomes are classify as cognitive domain. Students are agreed they have received the skill of identifying, formulating and solving the problem during the course. The perception results are verifying with the final examination results which the students obtained the grade of 3.33 for CO1 and 3.67 for CO2, indicate level GOOD.

Table 5: Correlation of Students' Perception and Final Examination Results for ECG223

Course Outcome	Programme Outcome	Mean Value	
		Students' Perception	Examination Result
CO1	PO3	3.286 (Agree)	3.33
CO2	PO3	3.389 (Agree)	3.67

### Open-ended Test as Comprehensive Assessment

Open-ended test is comprehensively designed to assess the time management, utilisation of preliminary data, the application of fundamental knowledge and working as a group. From the four (4) weeks project, the students are agreed that they are acquired the designed skills in open-ended test which the mean values are in a range of 3.500 to 3.639 as showed in Table 6. Standard deviation from this table also shows the significant value of the prepared criteria. The students believed that they have learned a lot from the open-ended project especially in managing and organising their work, obtain relevant data independently which help them in executing the laboratory works and the experience in working together either as a team member or as a leader. In another hands, this exercise also can help students in developing their critical thinking and make them creative to solve the problem.

Table 6: Students' Perception in Open-ended Test

Criteria	Students' Learning Experience in Open-ended Test	Mean Value	Standard Deviation
Time management	I have enough time to do all the works including soil sampling, drying and laboratory testing	3.500	0.561
Course materials	The course materials given are sufficient to help executing the laboratory works	3.639	0.487
Previous and current courses	The theoretical courses (ECG203 – soil mechanics and ECG213 – soil engineering) very much help to do the data analysis and interpretation	3.556	0.504
Skills enhancement	I learn a lot for this particular exercise including being independent, working in group and timing	3.639	0.487

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Final assessment for open-ended test is measured using the marking rubric. The rubric is distributed to the students in early stage of project briefing in order to promote the transparent assessment as required in OBE. For this study, the correlation between students' perception with the final assessment results are produced as showed in Table 7. The mean value for open-ended test grade (3.763) showed the higher value compared to the mean value for students' perception (3.584). This results showed the students are successfully achieved all criteria and followed all the requirements designed in the marking rubric for the open-ended test or project, however, they underestimated their capability to do so.

Table 7: Correlation of Students' Perception and Final Assessment in Open- ended Test

	Mean Value	Standard Deviation
Students' perception in open-ended test	3.584	0.510
Final Assessment in Open-ended grade	3.763	0.184

### Teamwork Assessment

Commitment, contribution and communication are the most important criteria in the teamwork. From this open-ended project, the students are designed to obtain these criteria as showed in Table 8. The students claimed and agreed that they have learned and experienced in teamwork during the course with the range of mean value of 3.528 to 3.714. The standard deviation also showed the significant value of their perception.

Group meeting and consistency in progress work submission (commitment) showed the lowest mean values which are 3.556 and 3.528, respectively. In order to avoid this problem, time sheet in-class and learning audit as introduced in this project, play a major role as a work planning references.

Contribution and share their ideas to discussion is one of important skills to be a good team member. The quality of work is controlled and produced from these acquired skills. From the table, the mean value for the students' perception on ideas contribution and discussion is in a range of 3.600 to 3.657 which is in a likert scale of agreed.

Communication performed as a major factor in teamwork. Failure in communication results the failure in a group project. All group members should be performed to aware their task and know their roles in order to ensure the successfully of teamwork. Group members also should be able to notice all the changes made and problem arise during the project. From the perception study, the mean value rated by students' communication skill is 3.714. The students agreed that they have a skill of communication during the course.

Table 8: Students' Perception in Teamwork Experiences during the Course

Criteria	Students' Learning Experience in Teamwork	Mean Value	Standard Deviation
Commitment	All the team members are reliable for group meetings and give full commitment	3.556	0.504
Group contribution	As in a team, we are reliable to meet the deadlines for progress work and final report for submission	3.528	0.560
	All of my team members are able to contribute ideas to the group	3.600	0.497
Interacting with team members	As in a team, we are able to respects other members' opinion	3.667	0.478
	All the group members are able to contribute his/her opinion/share to discussions	3.657	0.482
	All the group members are aware on the given tasks, know their role and able to fulfil the role	3.714	0.458
Keeping the team on track	As in a team, we are able to notice all the changes/problem and know on what everyone in team should be done	3.714	0.458
Expecting quality	All the group members are giving the input for work-in-progress promptly and with a good faith effort	3.657	0.482

Table 9 shows a correlation of students' perception and final assessment in teamwork. The mean value of students' perception is higher (3.637) compare to mean value of teamwork test grade (3.391). The result indicates that the students believed they had the skill to work in a team but they still required the proper training in managing the time and task of the project.

Table 9: Correlation of Students' Perception and Final Assessment in Teamwork

	Mean Value	Standard Deviation
Students' perception in teamwork	3.637	0.490
Final Assessment in Teamwork grade	3.391	0.129

## Leadership Assessment

Table 10 shows the correlation of students' perception and final assessment in leadership skill. The perception results showed the higher mean value, 3.639 compared to final assessment of the skill, 3.231. This result indicates that the students perceived they required the skill but from the final grade they still need the continuous training as a leader not only from this course but from other course in the programme. The leadership skills can only developed by appropriate training. From the project, the learning audit and group meeting can help in developing this skill.

Table 10: Correlation of Students' Perception and Final Assessment in Leadership

	Mean Value	Standard Deviation
Students' perception in leadership	3.639	0.487
Final Assessment in Leadership grade	3.231	0.244

## Conclusion

Open ended project as Project Based Learning approach is introduced to developed students' skills. The challenge in is to design multiple assessment in one project. The complexities are in delivering and assessing knowledge, skills and attitude of students. Based on this research shown that student acquired skills with project based learning approach. However it is understood that students are able to enhance skills since they will have another one year before graduating. The authors suggest open-ended project can be introducing to others relevant courses to empowered students skills. In addition teamwork and leadership skills need to be improve with refinement in two aspect: 1) revise assessment rubric and 2) improve delivery methods.

The lecturer must have a good understanding on the subject, student population, outcomes requirement, and availability of materials, support staff and machines. It is understood that students have the difficulties to manage; as they need to master the theoretical part of the subjects, have a good communication with team members, have a good time management skills, understanding standard guideline to support the data collected during experimental programme, and many others. However based on preliminary research, students agree this type of assessment is beneficial to grasp designed course outcomes.

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*"Teaching is Nothing, Research is Everything": How Built Environment, Engineering and Design Academics Perceive and Navigate the Teaching and Learning Culture in their Workplace*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

In contrast to many other disciplines, built environment, engineering and design (BED) academics often have significant amounts of practical work experience and chose a university job because of their desire to teach and shape 'professional practice' in the next generation. This paper documents BED academics experience of being teachers and their teaching and learning environment, specifically how they deal with the realisation that universities typically focus on research, not teaching. Five key domains of the teaching experience (Perceived Value, Motivations and Perceptions, Teaching Experience, Teaching Preparation, Barriers) were explored through two focus groups (n=9) and a comprehensive anonymous 150 item online survey (n=68) of BED academics at an Australian university. Interactions with students were perceived as positive, with most students enthusiastic, engaged and motivated, and the success of former students' in the 'real world' deeply gratifying. Most derived immense satisfaction from their careers, despite ongoing confrontation with barriers (limited academic freedom, lack of perceived recognition from senior staff) and limitations (large classes, lack of sufficient resources, administrative burnout) that inhibited their capacity to teach as effectively as they would like. BED academics were disappointed and surprised about the low value placed on teaching and lack of recognition for their commitment and contribution – many believed promotion 'was not in their future' because they prioritised teaching over research. This paper discusses the impact of this teaching and learning culture for these BED academics and the implications for their students, their own career choices and the workplace.

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Traditionally, an academic's role has comprised of three distinct activities: teaching, research and service. Although all three of these activities are critical to the success of a university, in an increasingly competitive tertiary education environment, contemporary universities are characterised by increased legislative requirements, institutional change and a significant focus on research quality, output and performance (Norton, 2012). Although teaching undergraduates is the primary purpose of most universities, there has been a fundamental shift in how teaching and learning are perceived and conducted. The reality is that despite strong national and institutional expectations for excellence in *both* teaching and research, the day-to-day experience of most academics is that research is more highly valued than skills and expertise in teaching (Wahlen, 2002). Most universities typically have a strong research culture, with research enjoying higher prestige and offering a clear path to career advancement, whilst there is usually much less recognition for quality and innovation in teaching (Drennan, 2001). The perceived increase in value placed on research (potentially at the expense of teaching) has not only shifted the status of teaching, but has also put greater pressure on individual workloads, as academics work to increase research quality and output, while still attempting to meet teaching responsibilities (McInnis, 2000).

### ***Teaching in Higher Education – the Australian Context***

Internationally, the context for teaching in higher education has transformed over the last few decades, with an increasingly diverse student population and more explicit focus on teaching quality. In Australia, for example, a recent governmental review of higher education recommended two key targets to increase the proportion of the Australian population with higher-level skills: (1) *“40 per cent of 25- to 34-year-olds will have attained at least a bachelor-level qualification by 2025”* and (2) *“20 per cent of higher education enrolments at undergraduate level are people from low socio-economic status backgrounds by 2020”* (Bradley et al. 2008). To help meet these targets, the Australian Government has provided significant financial incentives for universities to accept (and graduate) students from lower socio-economic status backgrounds. Such policy initiatives will impact on the experience of teaching and learning, and offers an opportunity for universities and educators to focus attention on issues of pedagogy and best practice. As the success of these students at university will depend largely on the skills and energy of teaching staff, individual universities' will have to appropriately forecast, plan, implement and/or access appropriate training, services and resources to best meet the needs of this increased and more diverse cohort of students.

A critical first step, therefore, is to enhance our understanding about academic's current experiences of teaching and the wide range of issues that potentially require consideration when seeking ways to improve the experience, quality and outcomes of tertiary teaching. Thus, the overarching aim of this paper, using one Australian university as a case study, is to explore how built environment, engineering and design (BED) academics conceptualise and experience their teaching and learning environment. Notably, unlike many other disciplines, BED academics often choose a university job because of their desire to teach and shape 'professional practice' in the next generation, typically bringing significant amounts of practical work experience and less research expertise to their role. This paper focuses on BED academics experience of being teachers, perceptions of institutional and collegial commitment, and how they deal with the realisation that excellence in teaching is often less recognised than research and publication success. With universities recruiting an increasing number of practitioners to academia to provide 'real-world' insight and expertise to students (Coaldrake & Stedman, 1999), exploring the experiences of this BED cohort of 'non-traditional' academics is timely.

### *Academic's experiences of teaching*

While studies have explored the experience of learning within the tertiary education sector from the students perspective (see Hellsten & Prescott, 2004), less is known about how academics view and design the learning environment, set learning outcomes, interact with students and prioritise investment in teaching (e.g., Buelens, Clement & Clarebout, 2002; Evans & Tress, 2009). While teaching is a central component of an academic's role (most Australian academics spend approximately half of their working week on teaching related activities; McInnis, 2000), several studies have identified issues associated with the higher education teaching experience, ranging from workload, quality, resourcing and support (e.g., Coate, Barnett, & Williams, 2001; McInnis, 2000, Prosser & Trigwell 1997). Recently Watty (2006), in a teaching quality survey of 231 accounting academics from 39 Australian universities, found that nearly a third were concerned about 'exhausted' staff due to reduced staffing levels and high student numbers.

Part of the challenge is that an academic's job description involves not only being an engaged teacher, but an active researcher and a contributor through service to their university, discipline and the wider community. Several studies have found that balancing these multiple and competing responsibilities typically means a heavy and stressful workload: one respondent to a survey of academic staff in the United Kingdom explained how "*research is serious, teaching is serious, administration is serious; they are three jobs, not one*" (Kinman & Jones, 2003 p35). Similarly, a nation-wide survey of 2609 academics from 15 Australian universities, McInnis (2000) found approximately half reported working more than 50 hours per week and described their work as a source of considerable stress. McInnis argues increased institutional demand for high quality – in both research and teaching – means many Australian academics feel under enormous pressure, reflected in a fall in overall job satisfaction from 67% in 1993 to 51% in 1999.

### *Teaching versus research*

The prevailing experience seems to be that the structure, culture and practices in higher education - implicitly and explicitly - prioritises research over teaching; as Jencks and Riesman (1968) argued over three decades ago, academics "*have only a limited amount of time and energy, and they know that in terms of professional standing and personal advancement it makes more sense to throw this into research than teaching*" (p532). A large national study of 47 American research universities (of over 23,000 faculty members, chairs, deans, and administrators) supported this contention, finding that even these decision-makers felt teaching received too little emphasis in comparison to research (Gray, Froh & Diamond, 1992). More recently, in Australia, Ramsden et al. (1995) reviewed policies for recognising teaching and research in appointing and promoting staff, as well as surveying staff about perceptions of university policy and practice in acknowledging good teaching. They found that, compared to research, the status of teaching had declined in the last 50 years and that staff with a distinguished research record were rewarded, not staff with teaching leadership.

There is a strong belief among academics that universities prioritise research and that, in response, there is a general "*lack of recognition and reward for those academics with a teaching focus*" (Watty, 2006 p297). Numerous studies outline how many academics view the main basis for promotion, salary increases and acknowledgement to be based on research activities, specifically: winning competitive grants, writing and publishing journal articles and graduating higher degree research students. The perceived lack of output tangibility associated with teaching was raised in interviews with 15 senior academics in 13 Scottish universities, where Drennan (2001) describes how the major issue appears to be 'proving'

outstanding achievement in teaching and learning versus achievement in research. Unlike teaching, research has a strong transferable market value appreciated by other universities, thus motivating academics to “*concentrate on research and publication, even if this is to the detriment of teaching and the experience of their students*” (Drennan, 2001, p171).

### *Role of institutional characteristics, management, and workplace culture*

Although the prioritisation of research above teaching has been relatively well-documented, only a relatively small body of research have explored how workplace culture and institutional characteristics might impact academics’ teaching (and none documenting the perspective of BED academics). In the United Kingdom, Fanghanel (2007) interviewed eighteen lecturers (from seven different institutions and fifteen different disciplines) and identified seven key ‘filters’ that impacted on lecturers’ teaching practice and ‘pedagogical constructs’ (defined as how they conceptualise, approach and relate to teaching and learning). Four filters operate at the macro level of practice (the institution, external factors, academic labour, the research-teaching nexus), two at the meso level (department/school and discipline) and one at the micro level of the individual (pedagogical beliefs). Fanghanel’s study powerfully illustrates that how individual lecturers conceive and approach their teaching and learning is moderated by both the local context and their own individual ideological beliefs. More recently, Ramsden, Prosser, Trigwell and Martin (2007) surveyed 439 Australian lecturers to explore the link between experiences of academic leadership and approaches to teaching. They found perceptions of their academic environment was “at least partly determined by the management and leadership practices of academic managers” (p153), concluding that management need to recognise their role in fostering approaches to teaching, which “enable more effective student learning” (p153) and encourages staff to prioritise investing in further developing their own teaching.

Building on this previous research, this study explores academics’ experience of teaching and learning within an Australian university with high expectations for both teaching and research. Focussing on the unique perspective of academics from BED disciplines, there are two main aims. First, to explore how they conceptualise teaching and learning, identifying key motivators and barriers to teaching excellence. Second, to explore the role of institutional and workplace culture, specifically how BED academics believe their peers, senior staff in their school and ‘the university’ view teaching. Our focus is to deeply explore the impact workplace culture and how the perceived values and priorities of colleagues, superiors and the university impacts on BED academics.

### **Methodology**

The method included an online survey and focus groups, utilising one Australian tertiary institution as a case study. Using a purposive sampling approach, all academic staff (approximately 200 sessional, part-time and full-time) from the Faculty of Built Environment and Engineering (BEE) at an Australian university received a generic invitation email to participant. Standard good practice ethical and interview protocols were utilised, with survey participants having the opportunity to enter a prize draw to win one of 25 coffee vouchers and focus group participants receiving a free lunch as an incentive.

There was an approximately 34% participation rate, with 68 BED staff completing the survey and 9 participating in two focus groups (4 and 5 participants respectively). The first stage of the research was the 150 item online survey. Developed by the authors, the survey covered six sections: Teaching Experiences, Workplace Culture, Barriers to Teaching, Developing Teaching Skills, Personality; and Socio-Demographics. Where possible, existing measures

were utilised (e.g., Dahlstrom et al. 2005; Ramsden et al., 2007), with most items measured on a 5-point Likert scale anchored at strongly agree and strongly disagree (space constraints limit details, complete survey is available from authors). Three key open-ended questions asked what was *most* and *least* satisfying about teaching, as well as what surprised them most. The second stage of the research was the focus groups. Lasting approximately 60 minutes and held on the university campus, these were audio-recorded and later transcribed verbatim. For consistency, one researcher (the lead author) moderated both groups, which followed a semi-structured format focussing on teaching experience, teaching and workplace culture and barriers to effective teaching. This was “insider research”, as the researchers were also members of the social group (BED academics) under study. “Insiders”, best defined as individuals with intimate knowledge of the community and its members due to previous and ongoing association, often have epistemological privilege through their unique access to particular forms of knowledge, although being an insider also raises potential ethical and methodological dilemmas (see Labaree, 2002). This paper focuses specifically on the results surrounding academics’ experiences of teaching and workplace culture.

### **Participants**

A total of 68 BED staff completed the survey, with 9 participating in two focus groups (4 and 5 participants respectively). There was an even representation of the three schools in the Faculty: Design (42%), Engineering Systems (27%) and Urban Development (34%). The most common disciplines were architecture (27%), civil engineering (15%), industrial design (14%) and urban/regional planning (14%). Most were male (72%), average age of 44 years (21 to 73 yrs). They had been working in the university for an average of 7.4 years, representing a range of positions: sessional (37%), associate lecturer/lecturer (35%), senior lecturer (13%) and professoriate (15%). A third had a PhD (36%) and/or Masters (28%), with half (54%) reporting significant industry experience (27% 1-5 yrs; 27% 6-10 yrs).

### **Results**

#### ***The perceived value of teaching***

Table 1 illustrates that the vast majority perceive teaching to be a valuable component of their academic role, which provides considerable satisfaction. A number described how this satisfaction was the most surprising aspect of teaching, “*how much enjoyment it provides*” and “*I actually really, really enjoy it – the process of teaching, from preparation through to delivery*”. BED academics teach because they enjoy the challenge of teaching students to be more critical thinkers, describing in their comments and focus groups how they enjoyed “*figuring out ways of enlivening the teaching process*” and “*when students begin to understand and apply critical lateral thinking skills*”. Student interaction, and the impact of their teaching on the students, was greatly valued: “*seeing a student who was struggling produce a fantastic assignment*”, and “*I think seeing the transition from when they start to when they finish*”. Over half felt high quality graduates were produced by the course, with the importance of translation of knowledge into the workplace one of the most satisfying aspects: “*When students that are out in the industry say that what I taught them is still valuable out in the ‘real world’*” and “*I love seeing students I have taught produce great outcomes in practice*”.

*Table 1: Perceived value of, and motivations for, teaching*

<b>Perceived value of teaching</b>	<i>Disagree</i>	<i>Neutral</i>	<i>Agree</i>
Teaching students is an activity that gives me a great deal of satisfaction	1.7%	6.8%	91.5%
I believe teaching is an important part of my role	3.4%	5.1%	91.5%
The course produces high quality graduates ready for professional practice	10.2%	22%	67.8%
My efforts as a teacher are valued by students	3.4%	11.9%	84.7%
My efforts as a teacher are valued by my co-workers	8.5%	22%	69.5%
My efforts as a teacher are valued by senior management	20.4%	32.2%	47.5%
<b><i>Motivations for and perceptions of teaching</i></b>			
I like the challenge of teaching students as effectively as possible	0%	10.2%	89.9%
I teach because I can challenge students to be more critical in their thinking	5.1%	6.8%	88.2%
I teach because of the intellectual stimulation	1.7%	11.9%	86.5%
I teach because I want to help students prepare for professional practice	8.5%	10.2%	84.4%

The survey revealed a clear hierarchy of perceptions about the perceived value of teaching: most valued by students (85%), co-workers (70%) and then senior management (48%). They explained how “*learning how wide a range of perceptions about teaching other academics have*” was their greatest surprise, with one explaining how:

I feel I’ve gotten mixed messages because I’m very new. Yes, teaching is valued, and then I get someone else telling me, forget your teaching, what’s your research? Don’t worry about the teaching, focus on the research.

There was a strong belief that senior staff had a negative view of teaching: “*I’ve been told by a senior person that teaching is nothing, research is everything*”, and with one participant recognising their need to “*write something because otherwise it won’t be remembered*”, in regards to their achievements in teaching.

Tables 2 and 3 illustrate the findings of a thematic content analysis of comments in the survey and focus groups. Least satisfying aspects were senior management’s sole reliance on student learning experience surveys (termed “LEX”) in evaluation of their teaching quality and the sense that innovative, experimental and creative teaching was not supported. As one explained, even teaching and learning advisors (a new faculty initiative), were more focussed on administrative compliance than trialling new approaches:

We need T&L people who are really creative, willing to take risks. We need to be able to allow people the freedom, actually have the support mechanism so that, if you do fall, they help pick you up, they don't actually pick you up and kick you.

*Table 2: The most and least satisfying (and surprising) aspects of teaching*

“What aspects of teaching do you find MOST satisfying?”	Student interaction / engagement Student learning Intellectual stimulation
“What aspects of teaching do you find LEAST satisfying?”	Student interaction /engagement Performance (eg LEX) Administration
“What has surprised you most about teaching?”	Satisfaction Enjoyment Learning Challenges Attitudes of others

Table 3 illustrates how barriers ranged from the attitude of others including disinterested colleagues, non-engaged senior management and unmotivated students – through to resourcing and time management implications. As one explained, a key barrier was *“the culture of academia here... teaching is not valued as much as research, many staff are not open minded about their teaching practices”*. One described *“how isolating it is, how rarely colleagues discuss fundamentals of teaching and discipline knowledge”*, whilst another believed that *“as long as students come here and researchers win grants, I think that's all that management cares about... Teaching staff are nothing and mean nothing to senior management”*. Many participants felt that by choosing to invest in teaching, they were sacrificing their chances for promotion: the survey found that 86% felt the university recognises and rewards high quality research. Only 48% agreed the university recognises and rewards high quality teaching.

*Table 3: Key barriers to effective teaching – and how they could be overcome*

<b>What (if any) are the barriers to effective teaching?</b>	<b>How could they be overcome?</b>
<ul style="list-style-type: none"> <li>▪ Resourcing <ul style="list-style-type: none"> <li>○ Class size</li> <li>○ Administration</li> <li>○ Delivery</li> <li>○ Timeframes</li> </ul> </li> <li>▪ Indifference by senior staff</li> <li>▪ Lack of clear standards – quality issues</li> <li>▪ Student attitudes</li> <li>▪ Research focussed culture</li> </ul>	<ul style="list-style-type: none"> <li>▪ Resourcing <ul style="list-style-type: none"> <li>○ Smaller classes</li> <li>○ Better distribution of admin support</li> <li>○ Better facilities</li> </ul> </li> <li>▪ Better balance of Values between research and teaching</li> <li>▪ Greater academic freedom/ autonomy</li> <li>▪ Engage staff in discussions about teaching quality &amp; innovation</li> <li>▪ Methods / training</li> </ul>

To build a workplace culture that values teaching and learning, BED academics emphasised the importance of leadership that prioritised excellence in teaching, wanting *“informal discussions about teaching with senior staff”* and *“genuine acknowledgement from senior staff of the value of undergraduate teaching, recognition for innovative and outstanding*

*learning activities*". Specifically, they recommended improved administrative support; introducing broader evaluation methods (beyond LEX), recognition (academic promotion through exemplary teaching activities and not just through research); and supporting peer-to-peer engagement and mentoring.

## Discussion

This research depicts university teaching as a multi-dimensional construct with numerous confounding issues. The measures chosen allowed for candid exposure of teacher's experiences, perceptions and attitudes revealing current cultures of teaching and the impact of both organisational and individual factors on the participant's views. Reiterating similar findings in the literature, this study provides a new context (the perspective of BED academics) for old and ongoing issues. This research highlights how BED academics very much enjoy teaching and interactions with students, yet feel that research is more valued than teaching. These findings are consistent with previous research, suggesting that the individual and organisational factors that impact on teaching culture are generic and not discipline specific. Taken together, our findings have several implications and recommendations for higher education practice and policy.

First, there can be little doubt that the vast majority of BED academics in our sample derived immense satisfaction from teaching. BED academics found most students enthusiastic, engaged and motivated, describing student interactions and the resultant success of student's in the 'real professional world' as the most positive and deeply gratifying aspects of teaching. Yet, there was a hierarchy of perceptions about the perceived value of their teaching: most felt their teaching was valued by students (85%) and fellow co-workers (70%), but less than half (48%) felt it was valued by senior staff. Although they personally valued and enjoyed teaching, these BED academics felt that focus on teaching was not valued by the university or senior staff and that they were much more likely to be acknowledged and supported (and promoted) for research. These perceptions are consistent with a large body of research (Gray, Froh & Diamond, 1992) which shows academics perceive prioritising teaching as a 'risky priority'; leadership from senior staff and management is required to challenge these perceptions and empower academics to invest in, and remain committed to, their teaching (Hattie & Marsh, 1996).

Second, balancing the teaching-research nexus was challenging. Unlike many other disciplines, most BED academics reported relatively limited previous research training and were often concurrently studying for a PhD. They had been attracted to their academic role specifically to teach and help "shape professional practice in the next generation". For this BED cohort, the realisation that teaching was viewed as 'less important' than research was a surprise. Participants felt it was 'easier' to get promoted on the basis of research, describing how promotion was 'not in their future' because they prioritised teaching and learning. Such staff sentiments, consistent with other research, highlights how universities need to examine existing systems to ensure staff focussed on teaching excellence are also rewarded. Our participants described an uncertainty about what "counted", explaining how they received different messages for different colleagues: "

These findings are consistent with research by O'Meara and Bloomgarden (2011), who in a case study of an American university striving to improve productivity, concluded that academics felt such "*institutional striving had made it difficult to prioritize and commit to different parts of their work because of conflicting messages from leaders about what was most important*" (p64). Through 29 in-depth interviews, O'Meara and Bloomgarden (2011)

found that - like our cohort – these American felt fragmented and pulled in many different directions, believing that it was an ‘uphill battle’ competing with target/aspirational universities that were differently resourced (e.g., reduced teaching loads).

Third, institutional policies and procedures have a very significant impact on teaching and learning, and can hinder good, ‘creative’ or ‘innovative’ practice. Consistent with past research (e.g., Phillips-Miller, Pitcher & Olsen, 2000; Ramsden et al, 2007; Saroyan & Amundsen, 2001), participants strongly disliked management’s reliance on student teaching evaluations and the lack of alternative evaluation techniques to provide a more holistic examination of teaching quality. As well as negatively affecting workplace morale, the focus on student evaluation made educators’ reluctant to ‘take risks’ in their teaching practice. A related example was how participants described that their experience of a new faculty initiative, the provision of ‘teaching and learning advisors’, were actually more focused on ensuring compliance with administrative rules than supporting their experimentation and innovation in teaching. These academics did not feel they had the support, freedom or confidence to be creative in their teaching; something that impeded innovative best practice.

Fourth, consistent with a large body of existing literature (e.g. Kinman & Jones, 2005; McInnis, 2000 ), there was a strong sense that workload demands were simply too high. BED academics explained feeling that “there were never enough hours in the day” and a sense that they could not maintain such heavy workloads. A range of issues were identified, including a lack of space and resources (e.g., data projectors) and large class sizes. Time constraints were also highlighted as barriers to seeking or implementing processes to improve teaching. From marking to repeatedly responding to relentless student email requests, teaching is seen as a demanding role. As it must also be shared with other responsibilities, including research and service, it is apparent that a lack of time is profound, an issue that negatively impact staff morale and work-life balance. In his interviews with UK academics, Fanghanel (2007) also concluded that “stress-related stories were present in these narratives, and linked to disempowering feelings of not being able to do one’s work properly” (p12); such emotions were clearly also evident in this Australian sample, with academics wanting more time (and opportunities) to share and discuss teaching ideas with colleagues.

This research, focussing on the experiences, frustrations and concerns of BED academics in one Australian university, provides deep insight into their perceptions of their workplace teaching and learning culture. These BED academics, passionate about their students and deeply committed to best practice in teaching and learning, reported a strong sense that their efforts were not valued by senior management or promotion committees. Although, as Johnsrud and Rosser note “*faculty members are rarely satisfied with their own institutions*” (p518), these findings suggest that universities need to re-examine the relative importance of teaching and learning and explore ways to support and recognise academics commitment to teaching: senior staff must understand their key role in influencing teaching and learning culture. Our hope is that these insights will help inform and contribute to the debate about how best to reshape and transform the activities of teaching, learning, and research in higher education.

### *Acknowledgements*

We would like to thank our colleagues who generously gave their time to participate in this study and also acknowledge financial support for this study from the Teaching and Learning unit within the Built Environment and Engineering Faculty at QUT.

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*Limitations of Acceptable Speech and Practices of Normative Racism among Pre-Service Teachers*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

In this paper I consider the cause and affect relationship between the limitations of acceptable speech and practices of normative racism among future teachers. I argue that the current discourses of race, immigration, and the politics of the “other,” which follows the logic of individual liberalism, works to perpetuate normative racism by systematically eliminating authentic discussions in multicultural education. While education has long been a circumstance of culture that works to maintain dominant practices, it has also provided a space for critique and re-imagination—a place to resist, through intellectual and critical analysis, the social injustices within society. However, the continued rise of the neo-conservative movement in the United States of America challenges such critical pedagogies by reigniting the debate of acceptable limitations of speech on University Campuses. While most colleges of education have made efforts to teach tolerance and diversity, what is not being discussed is the pressing need within pedagogical sites for discourses of race that bring students to understand how and why they, as members of a collective society, emotionally and affectively invest in normative practices of institutionalized hate and racism (Romo, 2006). I argue that a truly transformational pedagogy of social justice necessitates the freedom for students and teachers to engage in “risky language” (Giroux) in classroom discussions of difficult topics—e.g. race, immigration, white privilege—in order to create authentic possibilities for teacher agency against the challenges of normalized hate.

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While education has long been a circumstance of culture that works to maintain dominant practices, it has also provided a space for critique and re-imagination—a place to resist, through intellectual and critical analysis, social injustices within society. Central to this notion are issues of politically correct and acceptable speech within academic contexts. Both public and private educational institutions in the United States frequently adopt policies prohibiting stigmatization on the basis of attributes such as race, sexual orientation, religion, disability, or national origin. In the 1980s and 1990's, more than 350 public universities adopted "speech codes" regulating discriminatory speech by faculty and students (Herron, 1994). While these codes are frequently overturned as violations of the First Amendment, debate over restriction of "hate speech" in public universities has resurfaced with the adoption of anti-harassment codes covering discriminatory speech. However, Giroux (2006) makes the argument that higher education within the United States is being targeted by a diverse number of right-winged forces that have high-jacked political power and have waged a campaign to undermine the principles of academic freedom in place of critical pedagogical practice in the name of patriotic correctness. According to Giroux, this dismantles the university as a stronghold of autonomy and independent thought. Furthermore, by controlling the vocabulary of individuals, academic freedom, and free speech, right-wing forces are attempting to slander liberal and left-oriented professors and place control on what is said and taught in the classroom.

### **Theoretical Framework**

My interest in this issue is grounded in my personal experiences and challenges in teaching multicultural competencies to pre-service teachers at Arizona State University amidst recent and on-going controversial immigration legislation that highlights the current wave of normalized racism. Students unknowingly exhibit "anti-immigrant" ideology as normative and fail to recognize their own value positions and assumptions as a form of institutional racism.

My efforts to engage pre-service teachers in transformative learning for social justice are largely informed by Henry Giroux' conceptualization of *border pedagogy*, an approach to

critical pedagogy that views the act of teaching “as a form of social criticism” and takes seriously the call to rethink the nature of university teachers’ role “with respect to issues of politics, social responsibility, and the construction of a pedagogy of possibility” (Giroux, 1992, p. 105). A central tenet to Giroux’ concept of a critical border pedagogy suggests the need to explore a language of possibility that is capable of thinking risky thoughts and that gives students the opportunity to “air their feelings about race from the perspective of the subject positions they experience as constitutive of their own identities” (Giroux, 1992, p. 137).

Thus, my goals in teaching this course are to provide these future teachers with an understanding of current issues in multicultural education by deconstructing “whiteness” in order to recognize and dismantle practices of normative racism circulating within recent educational policies in the State of Arizona. However, While I take seriously Giroux’s suggestion that border pedagogy “does not silence in the name of its own ideological fervor or correctness”, I frequently found it extremely difficult to continue to give some students the freedom to express their views and explore their value positions when those views were racist in the extreme. Thus, the essential dilemma for me was in determining the extent to which students should be given the freedom to voice their opinions and explore their value positions without perpetuating racist stereotypes.

With these issues in mind, one topic that seems to have recurring resonance for me, and certainly one that weighs on my mind as an aspiring teacher, concerns concepts of dominance, power and authentic possibilities for transformational pedagogies. Using Foucault’s theory of the polyvalence of discourse and Judith Butler’s conceptualization of the power of language performativity as a theoretical lens, I am interested in understanding the cause and affect relationship of censorship and normative racism among future teachers.

## Language and Power

In "How to do Things with Words, J.L. Austin (1962) attacks the traditional view within linguistics that the main purpose of uttering sentences is to state facts, which can either be true if they succeed or false if they fail to perform. He argues that uttering some sentences is neither to state a truth or a falsehood, but to actually perform a kind of action, which he calls an "illocutionary act." However, other sentences can be the cause of an action to take place, or what he calls "perlocutionary acts." Austin argues that it is possible to "do things with words", as words themselves do not have one absolute signification, but various meanings depending on the context. Language is a mix of words and body, and bodies can alter the meaning of a spoken word.

Building off of Austin's conception of illocutionary and perlocutionary speech acts, Judith Butler (1997) incorporates Foucault's theory of the polyvalence of discourse (1976) to demonstrate that language and power are inextricably related and dominant discourse functions as an instrument of power by governing and shaping social and cultural beliefs and practices. Foucault contends that discourse is at the same time polyvalent and can function to either inflict power or to resist it. Thus, discourse can ultimately "undermine and expose [power]," and thus "renders it fragile and makes it possible to thwart" (Foucault, 1976:34). This idea is central to Butler's argument, and she rejects Austin's conception of the absolute efficacy of illocutionary speech acts by demonstrating that what gives illocutionary speech acts their force is not the words themselves, but social and political conventions. Using the example of hate speech, Butler reveals that names have a history that is imbedded in the word itself, and thus, "repetition that congeals, that gives the name its force" (Butler, 1997:36) invokes a words' historicity and conventionality when it is used. Thus, Butler states that hate speech only works as hate speech because it cites itself, claiming because "we know its force from its prior instances [that] we know it to be offensive now" (p. 80).

However, according to Butler, if the illocutionary acts are grounded in convention as Austin claims, then they contain a condensed historicity that refutes the claim of

simultaneity between speech and conduct. Rather, Butler asserts that the illocutionary force of an utterance stems from the presence of structures and conventions that both precede and endure beyond that utterance, and thus, “no term or statement can function performativity without accumulating and dissimulating historicity of force” (p. 51). In this way Butler demonstrates that the injurious force of hate speech is not necessarily always effacious and, based on Foucault’s theory of the polyvalence of discourse, there is a possible break between the actual act and the injury that hate speech inflicts that can be exploited as means of resistance. Language itself is outside the control of its user, but rather “excitable.” Thus, Butler rejects arguments that define hate speech as illocutionary, which assumes both instantaneous and absolute performative force as it is spoken, and instead argues that language is highly vulnerable and thus the performative force of hate speech as perlocutionary; hate speech generates consequences, yet because speech is “excitable” and discourses polyvalent, sovereign control over language is impossible and the consequences of the perlocutionary speech act are not definite. Thus, hate speech becomes open to reinterpretation and recontextualization, which in turn create possibilities for change. In this sense, attempts to censor language prevents possibilities for counter speech, which, according to Butler, confounds the performative power of speech by loosening the link between the performative act and injury:

One is not simply fixed by the name one is called. In being called an injurious name, one is derogated and demeaned. But the name holds another possibility as well: by being called a name, one is also, paradoxically, given a certain possibility for social existence...Thus the injurious address may appear to fix or paralyze the one it hails, but it may also produce an unexpected and enabling response. If to be addressed is to be interpellated, then the offensive call runs the risk of inaugurating a subject in speech who comes to use language to counter the offensive call...

For Butler, Hate Speech theory denies possibilities for derogatory terms to be turned around and their meaning reinvented, and thus eliminates the responsibility to do that political work.

By demonstrating that illocutionary performatives are not always successful, Butler opens up possibilities for alternatives to state regulation of speech by further demonstrating the vulnerability of speech, citing what Austin terms “the doctrine of the infelicities” which refers to the occasional possibility of performatives to fail. For example, an illocutionary performative lacks power if the subject making the utterance lacks the necessary power and the authority. Speech can essentially break with existing contexts and be used in unconventional ways, which creates the means for hate speech to not only lose ability to inflict injury, but also be counter-signified. For example, counter speech, which Butler refers to as “redoubling of injurious speech” are possible as a result of the vulnerability of speech (pp. 14). The key issue then, for Butler, is that attempts to regulate hate speech through censorship ironically function to perpetuate the very discourses that these attempts seek to eradicate. This is the paradoxical effect of speech regulation that Butler demonstrates is so dangerous.

The paradoxical irony has further implications and Butler claims that attempts to make hate-speech prosecutable also produce a reductive effect by localizing the political problem of hate speech to the level of the individual, which functions to limit and reject opportunities to consideration of the larger issues of racism and sexism that inform hate speech. Thus, Butler questions the authenticity of oppositional speech used to combat hate speech—even so-called liberal attempts to create new terminology and language aimed at being “politically correct” or inoffensive—noting that, “If speech depends upon censorship, then the principle that one might seek to oppose is at once the formative principle of oppositional speech”. The power of the state to decide certain language forbidden by labeling it as hate speech simultaneously functions to spread the same language it attempts to prohibit. I personally would include in this discussion the use of euphemisms and doublespeak in place of hate speech as a result of censorship laws that attempt to eradicate the performative power of hate speech consequently become part of the cycle of resistance and domination: When the lived experiences of the oppressed interrupt dominant narratives and language, calling them into question in attempts to resist dominant productions of ideology, the dominant powers that control representation

of truth and meaning are able to re-envision and re-construct these resistance efforts to legitimize their power. The result is the production of new speech informed by dominant ideology, which functions to maintain the oppressive conditions of subordinate peoples and perpetuate the cycle (Darder, 1991).

### **Review of the Literature**

#### **Language and the construction of “Whiteness”**

Governments wield the power to control the media, build corporations, and circulate ideas. In this sense those with power fix not necessarily what people think, but the spectrum of what people think and talk about by limiting the source and extent of ideas to which they are subjected. Schools are also responsible for the production and transmission of knowledge, and limitations on language prevent possibilities for engaging in authentic and meaningful considerations of very real and imminent social issues. In this sense, as long as dominant discourses define social life as the sum total of conscious and deliberate individual activities, then only individual manifestations of personal prejudice and hostility will be seen as racist; systematic, coordinated, and collective behavior disappears from sight (Schrag, 2004).

One of the consequences of language that promotes individual liberalism in democratic society is the absence of critical discussion and reflection, which produces a dichotomy of “pro” or “against” that establishes concrete dichotomies of social issues such as immigration. For example, in her article on the controversy over Israel and Palestine, Butler (2009) argues that

“Many important distinctions are elided by the mainstream press when it assumes that there are only two possible positions on the Middle East, the ‘pro-Israel’ and the ‘pro-Palestinian.’ The assumption is that these are discrete views, internally homogeneous, non-overlapping, that if one is ‘pro-Israel’ then anything Israel does is all right, or if ‘pro-Palestinian’ then anything Palestinians do is all right.

Butler cites the former President of Harvard, Lawrence Summers, who in an address to the University community stated that there would be absolutely no tolerance of anti-

Semitic talk, which, according to Summer's logic, includes critique of Israel. This suggests that certain actions of the Israeli state must be allowed to go on unimpeded by public protest, for fear that any protest would be tantamount to anti-Semitism, if not anti-Semitism itself. For Butler, this presents a serious dilemma and she acknowledges that while all forms of anti-Semitism must be opposed, the logic of acceptable discourse has a set of serious confusions about the forms anti-Semitism takes.

One of the primary consequences of the language of individual liberalism is the production of normative whiteness. My use of the term Normative Whiteness draws from a more general notion within the social sciences that reflects a set of dominant values, principles, and modes of representation within institutional settings. According to Margaret Anderson (2003:29), normative Whiteness refers to the material practices that privilege and sustain the dominance of white imperial Eurocentric Worldviews. It is from this understanding of whiteness as ideological that I am interested in, and there are three specific discourses within the notion of white normativity that I will focus on: 1) concepts of citizenship and belonging to the United States, 2) the racial ideology of color blindness, and 3) the notion of meritocracy in US society, which also includes issues of reverse-racism and white resentment. It is these three discourses, which legitimize normative whiteness, that are tantamount to issues of educational equality within multicultural education. Even well intentioned efforts within multicultural educational programs designed to promote inclusion and understanding of minority students are often undermined by subversive forms of deficit thinking that perpetuate the discourses of exclusion by focusing on historical injustices without a consideration of current realities. As Ovando and McLaren point out (2000), even attempts to include such critical considerations are often impeded by appeals to "white guilt" and white resentment.

The first discourse of white normativity, the ideology of citizenship and belonging, is largely informed by the assimilationist approach to multiculturalism that promotes the notion that all citizens, regardless of race, class, linguistic or ethnic background, should assimilate into "American Culture" by conforming to dominant (normative) practices. This perspective is problematic on many levels, primarily because it assumes that

“American Culture” and to be “American” are isolated concepts. This perspective also requires that “others” concede the use of their own native languages and cultural practices to conform to the dominant group. Such a deficit orientation perpetuates the ‘othering’ of non-Anglo groups, which are consistently compared and defined by their ability to conform to normative Anglo culture (Hurd, 2008:295). Within the state of Arizona, rising nativist sentiments are driving the anti-immigrant sentiment and racist thinking that has allowed for the normalization of hate in discourses of patriotism and society. However, immigration and Nativism have long been permanent threads of American life (Schrag, 2004), and today’s conservative rhetoric about Mexicans as the new immigrant group in the US echo older fantasies.

Furthermore, Leistyna (1999) argues that in the United States, which has always been in the hands of white groups of Anglo-Saxon origin, to be white was to be American, and “whiteness” therefore came to represent a cultural group as opposed to a racial category, thus blurring distinctions of race and ethnicity. Hill (2008) demonstrates how normative whiteness has functioned to prevent the majority of people to even recognize acts of racist speech. The appropriation of folk conceptions of race—a theory which contains the notion that there exist biological distinctions that separate people into so-called “racial groups”—enables people who consider themselves not to be racist to in reality utter unintentionally language that has racist effects. Furthermore, the folk theory of race, which permeates mainstream conceptions of race despite public discourses of “unity” and “equality,” has become entwined with specific linguistic ideologies that, in isolation are not racist, but become central to the reproduction of everyday racism when articulated with the folk theory of race.

Concepts of Normative Whiteness are certainly not unique to the US, and the politics of cultural unification, secularism, and the place of Islam in Europe offer a useful lens to view this phenomenon. The “question of Islam” in Europe has dominated recent discourses resulting from the growing ‘Islamophobia’ that has constituted legislation in recent years, and according to Ozyurek (2005), the issue of anti-Islam tendencies in Europe parallels the rise of the religious right in the U.S., the difference being that the

United States has always viewed the ‘enemy’ as external as opposed to internal. The term *Islamic Terrorism* has now come to define political enemies in terms of religious categories in the US in which the power of language to situate the discussion of terrorism within a homogenous relationship of religion and culture works to silence and conceal the reality “that real people, rather than an abstract category of religion or culture, are being discriminated against” (p. 511).

For educators, the issue of religion is surfacing as a central element that places professors and students in conflict with each other. According to Fish (2005), the changing landscape of today can be linked to the intersection of religion and terror that has emerged within the framework of acceptable political and popular discourses. Primarily, it is the infiltration of religion into politics that reflects the larger issue of changing attitudes of traditional distinctions (faith versus reason, belief versus truth, science versus revelation) observing that an overwhelming percentage of the world does “not observe the distinction between private and public, or between belief and knowledge” (Fish, 2005). The religious right has come to dominate many spheres of modern intellectual debate, including higher learning, and critical pedagogues are being challenged and contested in interestingly new and unforeseen ways by this altered backdrop.

While ‘whiteness’ is everywhere, if individuals cannot perceive themselves as a member of a collective society, Lipsitz (1995) points out that it is very hard to see: “white power secures its dominance by seeming not to be anything in particular” (p. 369). Racist images and language have institutionalized racism by the present political culture in the US, which gives broad sanction to white supremacy, cannot be solely blamed on ignorance and intolerance at an individual level. Rather, the past several decades have given rise to an overwhelming inadequacy of language in which individual liberalism is used to describe collective experience, particularly in public education (p. 381).

The second principle discourse of normative whiteness is the racial ideology of color-blindness, which posits the post-civil rights era as one in which racism is no longer a structural or institutional phenomenon, existing only as decontextualized individual acts.

However, color-blindness, rather than eradicating racism by claiming to “not see race” eludes consideration of the historical and social realities of inequality and injustice that persist. Furthermore, this reduction of racisms produces systematic white privilege and the reaffirmation of the ideology of meritocracy (Lipsitz, 1998; McIntyre, 1998). It is our inability as a collective society to even recognize racism in our everyday lives that is the direct result of the sort of essentialized discourses that follow the logic of individual liberalism that dominate both in public and in academic settings. The study of race and race relations within the United States and in higher learning today has failed to adequately address the issue of race as a result of the failure to acknowledge racism as institutionalized norm, and the lack of a cross-cultural, comparative and intragroup perspective that transcends traditional views of race and race relations (Johnson, 1983). The absence of actual discussion and reflection is also influencing society’s very ability to recognize such injustices and Giroux (2005) comments on the underlying theory of *Newspeak*, which is that if something can't be said, then it can't be thought (similar to the Sapir–Whorf hypothesis). Giroux points out that there is substantial argument in favor of this notion, in that most humans think by carrying on a dialogue in their heads. They tend to sub-vocalize their thoughts as they form them and manipulate them. When words are eliminated from speech, so to are the ideas behind them.

The third discourse in the notion of white normativeness is concerned with issues of white resentment, guilt, and the imbedded notion of meritocracy. The inability to view social issues within a framework of collective responsibility present a political culture in this country gives broad sanction for viewing white supremacy and anti-Black racism as forces from the past, as demons finally put to rest by the passage of the 1964 Civil Rights Act (Cohen, 1991). As a result, resentment at having to talk about black grievances, for example, accurately reflects the logic of the language of liberal individualism and its ideological predispositions in discussions of race.

## **The Function of the Media**

According to Gitlin (1986), “today’s cultural and historical events bombard our sensibilities with such exponential speed and frequency, and through such a variety of media forms, that our critical comprehension skills have fallen into rapid deterioration. This collective loss of reasoning, and of history, appears to be reaching epidemic proportions. The etiology of this plague, many scholars argue, stems from the expanding sophistication and complexity of networks of social relations we call television (p. 120). The media functions to shape morality and to construct forms of citizenship and individual and collective identity, and critical awareness of the media’s use of language is important to understanding contemporary social life. The mainstream media solidify and establish social norms in many ways: Choice of topic addressed, by framing of issues, by their choice of sources of information, and by their use of language, among other practices (Herman, 27). The struggle over words, the integration of word usage, framing, and source selection points up the fact that language is an arena of conflict and struggle. Western Racism has surfaced in media representations on immigrants in disguise as traditional rhetoric that follows the logic of individual liberals as an element of US democracy.

As it is the powerful that control language, the powerful can successfully label social issues and individuals in a way that makes it easy to impose policy that strategically discriminates. With a sufficiently compliant media system, any one can be made into a victim engaging in self defense regardless of the reality that shock and awe tactics are openly designed to terrorize the target population into submission (Herman, 95). By the internalized rule of the compliant media, according to which the invidious and horrible language always seems only to apply to ‘others’, there is an internalized belief that acts of racism are limited to individuals, not society as a whole. For example, the mass production of patriotic sentiment and the mobilization of consent that allowed such a disproportionate and excessive use of force in the Iraq War was, in the minds of the American people, largely justified via a mass advertisement in the media. Rather than

creating a more critically informed public, the media successfully created passive subjects that could not demonstrate an ability to recognize blatant acts of racism.

### **The language of Multicultural Education**

The deformation of reality via the media has deeply impacted the state of higher education. There has been an invention of and concurrent attack on what has been called the repressive “left mandarin” regime of “political correctness” that is supposedly sweeping North American University campuses (McLaren, 2008). Educators who work in the public schools and universities are currently witnessing a well-orchestrated and singularly scandalous assault on the efforts of the progressive educators to make race, class, and gender issues central to the curriculum. The new left literacies that have been influenced by continental social theory, feminist theory and critical social theory in its many forms are being characterized by New Right critics as a subversion of the political neutrality and ideological disinterestedness that they claim the enterprise of education should not allow (MacLaren and Hammer, 132).

In reference to multicultural education, lack of critical thinking among today’s student body is a large aspect in the struggle against racism and xenophobia that has allowed hate and fear to constitute normal elements of modern social life (Lipsitz, p. 371). White supremacy and the history of an investment in white solidarity has surfaced in the classroom creating very complex tensions between teachers who attempt to bring critical themes to the discussion. For example, in American history classes, often there are feelings of resentment and frustration among white students who continually feel “attacked” and “threatened” by the attention paid to issues of slavery. The gap between white students’ perceptions of minority experiences has powerful consequences, and the type of questions and comments that are raised about the legacy of slavery in American History classes are a reflection of the deeper significance of racism (Lipsitz, 1998:382). This sort of disconnect between reality and what students perceive as being “picked on” and “blamed” for racial injustices is a very accurate reflection of the way language has created a fundamental sense of individualism and its ideological predispositions in discussions of race. Included in this issue is the rise of neo-conservative racism in

America's universities and educational policies. Schrag (2004) makes an eerie parallel to Arizona House bill 228, which bans ethnic studies in public schools, to the racialized discourse that gave power to the first immigration quota, observing that ethnic-based preferences in education are incompatible with public support for immigration.

Bartolomé (2008) traces this irony to the tainted understanding of what it means to teach multiculturalism and the one-dimensional approach to multicultural curriculum design that embodies the language of individualism and the 'other.' Consequently, multicultural curriculums are limited to superficial displays of holidays, food, and music, which are void of critical thought or significant understanding of the elements that inform these cultural models. At the same time, it seems that many educators view such in-depth looks into different cultures is 'too political.' However, Bartolomé makes a clear point that multiculturalism and critical literacy are inseparable, and "incorporating 'others' into the curriculum does not necessarily change anything. The issue is not whether to add in attention to those who have been excluded, but how to think about exclusion, and what it means to listen to voices of all of us" (p.#). Teachers must therefore have an understanding of the oppressive conditions within traditional curriculums and the portrayal of "others," i.e. non-white, non-Anglo-Saxons. This must include reflection of students' own racism assumptions through the lens of normative whiteness as a form of institutionalized and collective act of racism.

While multicultural education is generally seen to be about the 'Other' and taught in ways in which the "dominating aspects of white culture are not called into question and the oppositional potential of difference as a site of struggle is muted," (Giroux, 1992:101) it is crucial that future teachers are guided to examine how the "boundaries of ethnicity, race, and power make visible how whiteness functions as a historical and social construction" (p. 117). According to Burdick and Sandlin (2010), due to a lack of critical thinking skills, future educators "risk adopting an institutionalized, colonial gazes, applying reductive logics to or even failing completely to experience phenomena that are not easily resolved in existing cultural meanings of teaching and learning" (p. 349). Despite attempting to locate critical pedagogies in their application, student teachers are

nevertheless isolated by traditional frameworks of pedagogy that construct culture from within a Colonial perspective. Rather, there is an “imperialist legacy evident in current educational research and practice” (p. 352). Viruru and Cannella (2006) observe that “despite the field’s historic openness to new ideas and insistence on the inclusion of marginalized perspectives, these structures continue to reflect mostly Euro Western perspectives: define, categorize, and develop guidelines for how it should be done” (p. 182).

### **Deconstructing Deficit Thinking and Student Resistance**

Efforts to create more equitable learning environments often fail because student teachers are unwilling to examine the root causes of underachievement and of failure among minority students. Furthermore, education students have a tendency to locate the problems within their students, their families, and communities, rather than examining their own racist assumptions (Garcia & Guerra, 2004; Berman & Chambliss, 2000). This tendency can be traced to the changing nature of white identity following the Civil Rights movement, in which the transformation of whiteness from a form of social standing to a norm produced resentment among whites (Olson, 2008). This transformation produces resentment characterized by a deep anger at the loss of ‘legalized’ racial superiority (Brown, 1995). Defensive reactions to acknowledging ‘white privilege’ can be understood from this notion, despite the reality that white normalization is largely produced without state sanction (Olson, 2008:709) and continues to be a position of racial privilege in US society.

### **The Power of Language Performativity and Normative Racism**

According to Walker (1994) in the United States, there is a general consensus that free speech values take precedence over limiting the harm caused by verbal insult. At the same time, some conservatives believe verbally expressed “discrimination” against religions such as blasphemy, or sometimes “morally incorrect” or “unpatriotic” speech which opposes deep-seated sociocultural or religious mores, and national interest, should be condemned or prohibited, while liberals feel the same way about verbal

"discrimination" against identity-related personal characteristics, such as homosexuality and language of someone who happens not to speak English.

While free speech and the First Amendment are often cited in the debate concerning hate speech, many argue that the best way to deal with the issue is to create state imposed regulation to deter hate speech. Mari Matsuda (1993), who is recognized as one of the architects of the legal rationale behind campus speech codes, argues that areas of the law, specifically the First Amendment, are "ostensibly designed to advance the cause of racial equality." As such, Matsuda argues that hate speech is "qualitatively different" from other varieties of offensive speech and that arbitrary censorship of hate speech is therefore preferable to the potentially devastating effects it might have and the potential to inflict injury and violence on its targets. Catharine MacKinnon (1993) offers a similar argument against pornography as a form of speech and calls for the unquestioning use of the state's power to censor it. For MacKinnon, the implications that pornography creates within society is a form of hate speech and should thus apply to state-sponsored attempts to regulate language that causes injury—even violence—in an attempt to seek positive social change. Similarly, Richard Delgado (1997) argues that it is possible to identify hate speech on the use of certain key-words. He states that, "words such as 'nigger' and 'spick' are badges of degradation even when used between friends: these words have no other connotation." Therefore, according to Delgado, the act of calling someone a name should be censored if the name used belongs to a previously identified hate speech.

While there has been considerably support for state imposed regulations of speech, and many liberal educators and thinkers have offered their support for such solutions, others argue that there are dangers involved in the censorship of speech, which often proliferate the very language it seeks to suppress. Foucault (1976) claims that any attempt at censorship, legal or otherwise, necessarily propagates the very subject it seeks to forbid. In his first volume of the *History of sexuality*, he shows that censorship produces its own discourse by using the example of the strict sexual mores of 19th century Western Europe that did nothing but amplify the discourse of sexuality it sought to control. Building off of

Foucault's analysis, Judith Butler (1997) examines when and how we deem speech to be an act of injury.

The issue of censorship and hate speech can also be understood as a political tool. There are many who feel that the co-optation of acceptable discourse is not only a rhetorical movement, but a political movement aimed to silence resistance among marginalized and oppressed groups. Some left-wing commentators claimed that after 1980, right-wing American conservatives re-engineered the term political correctness to ideologically re-frame US politics as a culture war. For example, Hutton reports:

"Political correctness is one of the brilliant tools that the American Right developed in the mid-1980s, as part of its demolition of American liberalism. What the sharpest thinkers on the American Right saw quickly was that by declaring war on the cultural manifestations of liberalism — by leveling the charge of “political correctness” against its exponents — they could discredit the whole political project."

According to Toynbee (2008), many who use the term do so to distract attention from substantive debate about racial, class and gender discrimination and unequal legal treatment. Crawley (2007) shows how invocations of political correctness still work in nuanced ways to close down debates and trivialize issues, and effectively slow down progress towards achieving an anti-racist society. One of the concerns is that terms chosen by an identity group as being acceptable descriptors of themselves, become part of dominant discourses, including the discourses of the racists, sexists, and violators, whose racist and sexist ideology functions to re-envision the meaning of the new terms according to their dominant values. Thus, the new terms become devalued, and another set of words must be coined, giving rise to lengthy progressions of euphemisms, also known as the *Euphemism treadmill*.

The issue of politically correct and acceptable speech is also a controversial issue specifically within an academic context. Gordon (2005) argues that the appropriation of academic codes and academic “bills of rights” are examples of how the conservative right

has co-opted typically left-wing rhetorical terms to disguise interior motives. Higher education within the United States is being targeted by a diverse number of right-winged forces that have high-jacked political power and have waged a campaign to undermine the principles of academic freedom in place of critical pedagogical practice in the name of patriotic correctness (Giroux, 2006). This dismantles the university as a stronghold of autonomy and independent thought. Furthermore, by controlling the vocabulary of individuals, academic freedom, and free speech, right-wing forces are attempting to slander liberal and left-oriented professors and place control on what is said and taught in the classroom.

## **Conclusion**

There is a need to examine the epistemologies and implications of language restrictions on the abilities of future teachers to examine their own racist assumptions. This includes a critical understanding of how current discourses of race in teacher education programs produce and reflect realities for the perpetuation of normative racism. I suggest that a pedagogy that encourages students to become border crossers can enable students to develop the ability to interpret media, images, and social constructions with a critical lens, as well as understand the ways they themselves consume and affectively and emotionally invest in these structures. Such an appreciation encourages critical thinking and self-analysis that provides young teachers with the opportunities to navigate racist language, as students begin to realize that everyday decisions are not necessarily made freely and rationally. While I strongly believe that humans exercise agency, I understand that there are social, cultural, and political forces that affect agency. However, I believe that critical pedagogies are capable of creating authentic change despite external structures, and I understand transformational learning as an opportunity to realize how everyday decisions are encoded and inscribed by emotional commitments relating to the production social structures, all of which leads to “the manufacture of consent” (Chomsky, 1988).

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*Educational Evaluation Identification and Structural Analysis on Workshop-based  
Craft Product Design Course*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

The workshop-based craft product design course is to teach students how to create and design three-dimensional crafts products. It is not only the knowledge, but also the skill in the design education field. The aim of this paper is to evaluate the professional learning aspects which can apply to the educational evaluation identification, and the results can be used to improve the teaching methods and adjust the teaching content. The paper chose the people who graduated from the department of related craft products design, and are working in the related products design field as examinees. The data were analyzed by GRA (Grey Relational Analysis) to evaluate the extent of importance of the course content and then put them in order. Afterward, the S-P (Student-Problem) chart has been modified and becomes the GSP (Grey Student-Problem) chart which provides the cognitive domain of the examinees and use as the basis of the paper. Finally, the results are shown in the GSM (Grey Structural Modeling) chart which becomes the analytical basis of this paper. During this evaluation process, the data and figures generated through the paper can clarify the course evaluation which is one of the best innovative evaluation methods in educational learning and teaching.

**Keywords**—Craft product design , Educational valuation, GRA, GSP chart, GSM chart

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## **Introduction**

During the craft product design teaching process, the mission of the teacher is to apply the teaching methods and the professional courses to guide students meeting the teaching goals. According to education and training research, there are four sections in the systematic teaching portfolio and they are teaching goals, teaching process, teaching activities and teaching evaluation. We could understand the importance of the craft product design courses via the teaching evaluation. Then, we can use it as the reference for teaching improvement. It not only could help us to estimate the teaching goal, but also can manipulate the teaching process and teaching activities.

The course of craft product design is to train students to be able to design three-dimensional craft works, and enhance the knowledge and skill in this field. The content of this course included that: materials processing technology, form structure analysis, the cultivation of esthetics and professional learning item. Diagnosis and analysis of craft product design courses will be able to improve for teaching quality [1]

There are several mapping evaluation methods such as characterization of tree, semantic attribute analysis, concept mapping, cross-classification, multidimensional scaling, pathfinder network, spider diagram, cluster analysis and so on [2,3]. Those methods have different aspects and effect for the teaching domain.

This paper used GRA method to combine the S-P theory, and proposed GSP chart and GSM chart which become a systematic research method for the reference mapping of judging the difficulty of the designing courses. Through the ordinal results and the structure of the courses, it will provide reference to teaching and improvement.

## **Methods**

### **Grey Relational Analysis (GRA)**

Professor Deng (1989) proposed the Grey System Theory [4], and the grey relational analysis (GRA) can be used to manage the uncertain, multi-dimensional, discrete, and incomplete data. The main function of GRA is to quantify the factors and calculate the discrete data. Through the ordinal process, the information can be translated into useful data. We can find many successful researches [5~15].

The paper aims to find out the importance in the craft designing courses as the improvement for teaching. According to Glaser, the systematic teaching process should include teaching goals, teaching process, teaching activities and teaching evaluation.

### **Establishing the raw data analysis**

For setting up the GRA, there must be reference vector and comparative vector, and they are shown as follows[16].

$$x_0 = (x_0(1), x_0(2), \dots, x_0(k), \dots, x_0(m)), k = 1, 2, 3, \dots, m \quad (1)$$

$$\begin{aligned} x_1 &= (x_1(1), x_1(2), \dots, x_1(k), \dots, x_1(m)) \\ x_2 &= (x_2(1), x_2(2), \dots, x_2(k), \dots, x_2(m)) \\ &\vdots \\ x_n &= (x_n(1), x_n(2), \dots, x_n(k), \dots, x_n(m)) \\ i &= 1, 2, \dots, n \end{aligned} \quad (2)$$

Then the AHP is used to clarify if the data of the comparative vector are clean by checking the Consistency Index (CI). When  $CI \leq 0.1$ , it is clear that the data are consistent.

$$\begin{aligned} &A_{i,1} \quad A_{i,2} \quad A_{i,3} \quad \dots \quad A_{i,m} \\ &A_{i,1} \quad 1 \quad w_{12} \quad w_{13} \quad \dots \quad w_{1m} \\ &A_{i,2} \quad w_{12}^{-1} \quad 1 \quad w_{23} \quad \dots \quad w_{2m} \\ [W]_i &= A_{i,3} \quad w_{13}^{-1} \quad w_{23}^{-1} \quad \dots \quad \dots, i = 1, 2, \dots, n \\ &\vdots \quad \vdots \quad \vdots \quad \vdots \quad \ddots \quad \vdots \\ &A_{i,m} \quad w_{1m}^{-1} \quad w_{2m}^{-1} \quad w_{3m}^{-1} \quad \dots \quad 1 \end{aligned}$$

$$CI = \frac{\lambda_{\max} - n}{n - 1}$$

### Generations of grey relation

During the GRA process, there are three rules have to be satisfied for researchers to extract the available data, which are non-dimension, scaling and polarization. There are three methods to generate and standardize the data, and they are: larger-the-better, smaller-the-better, and nominal-the-better which are shown as follows[16].

#### (1) Larger-the-better

$$x_i^*(k) = \frac{x_i(k) - \min_i x_i(k)}{\max_i x_i(k) - \min_i x_i(k)} \quad (3) \quad \text{where } \max_i x_i(k) \text{ means the maximum number in } j \text{ and } \min_i x_i(k) \text{ means the minimum number in } j.$$

#### (2) Smaller-the-better

$$x_i^*(k) = \frac{\max_i x_{ij}(k) - x_i(k)}{\max_i x_i(k) - \min_i x_i(k)} \quad (4)$$

#### (3) Nominal-the-better

$$x_{ik}^* = \frac{\max_i \{e_{ik}\} - e_{ik}}{\max_i \{e_{ik}\} - \min_i \{e_{ik}\}}, e_{ik} = \frac{|OB - x_{ik}|}{|OB|} \quad (5)$$

where  $OB \neq 0$  and the target goal is zero, Nagai's equation of smaller-the-better will be used, that is,  $\max_i x_{ij} \geq x_{OBj} \geq \min_i x_{ij}$ .

### Calculations of Grey Relational

Based on Nagai's equation [17], the grey relation can be calculated in this paper when partial grey relation's reference vector is  $X_0$  and comparative vector is  $X_j$ . When  $\Gamma_{0i}$  is close to 1, it means that

$x_0$  and  $x_j$  are highly related to each other. The equation of the partial grey relation is shown as follows.

$$\Gamma_{0i} = \Gamma(x_0(k), x_i(k)) = \frac{\bar{\Delta}_{\max} - \bar{\Delta}_{0i}}{\bar{\Delta}_{\max} - \bar{\Delta}_{\min}} \quad (6)$$

$$\text{where } \bar{\Delta}_{0i} = \|x_{0i}\|_{\rho} = \left( \sum_{k=1}^n [\Delta_{0i}(k)]^{\rho} \right)^{\frac{1}{\rho}}$$

where  $\bar{\Delta}_{\max}$  represents the maximum and  $\bar{\Delta}_{\min}$  represents the minimum. When  $\rho \geq 1, 2, \dots, m$ , it means Minkowski's grey relation; when  $\rho = 2$ , it means Euclidean grey relation. The overall grey relation is as follows.

$$\Gamma_{ij} = \Gamma(x_i, x_j) = 1 - \frac{\bar{\Delta}_{ij}}{\bar{\Delta}_{\max}} \quad (7)$$

$$\text{where } \bar{\Delta}_{ij} = \left( \sum_{k=1}^n [\Delta_{ij}(k)]^2 \right)^{\frac{1}{2}}$$

### Grey relation ordinal

The grey relation  $\Gamma_{0i}$  is compared in the decision-making process and the more important factor has larger  $\Gamma_{0i}$  number, and this rule is applied to be the ordinal principle of the system .

### S-P Theory

In 1970, Sato proposed the Student-Problem chart which can do the mapping analysis based on students' responses toward test items[18]. The main purpose is to gain every student's learning diagnose information and to provide teachers in offering efficient remedial teaching [19].

### Application of S-P Chart

From the students' responses (S graph), it is able to access students' learning achievement while the students' evaluation on courses (p graph) provides the students responses to the difficulty of the questions. Then it can be applied to diagnose the learning problem and improve the teaching method and the offering of the remedial classes. In regard to the craft product design course responses to the learning importance, the two dimensions can be presented clearly in Fig. 1[20].

	(P) craft product design Course Title	Overall Score
(S) Professionals	<i>Data</i>	High
		Low
	◀ Most important important	Least ▶

Fig.1. The S-P chart of this paper

### GSP Theory

In 2010, the Grey Student-Problem theory was introduced by Nagai [21], and it combines GRA and S-P chart. Through the GSP, the analysis is more concrete and accurate, and the uncertain factors can be calculated. By using Nagai's equations, the GSP can make the readable chart effectively and find out the weighting or ordinal numbers between the discrete data. Generally speaking, the GSP is an effective way to treat complicated factors.

### GSM structural analysis

Based on the evaluation data, grey relational ordinal and the GRA can be calculated. Then the value of  $\Gamma_{0i}$  is compared based on GRA. When the value of  $\Gamma_{0i}$  is greater on one side, it is recognized as the more important item and becomes the guide lines for the system structure ordinal. This paper uses Nagai's GSM theory to make matrix ordinal [22], and then Matlab is used for calculation. Finally, the overall research evaluation can be presented with the ordinal structure. GSM can be applied to many researches with the incomplete data, and uncertain factors can be shown in the clear figure which also provides the information of weighting and structure. The equation of GSM is shown as follows[22].

Make  $\Gamma$  denote a grey relational matrix, which is the result of a globalized GRA as follows.

$$\Gamma = \begin{matrix} & \gamma_{11} & \gamma_{12} & \cdots & \gamma_{1m} \\ \gamma_{21} & \gamma_{22} & \cdots & \gamma_{2m} \\ \vdots & \vdots & \ddots & \vdots \\ \gamma_{m1} & \gamma_{m2} & \cdots & \gamma_{mm} \end{matrix} \quad (8)$$

其中  $i, j = 1, 2, \dots, m$ ;

$$\gamma_{ij} = 1 - \frac{\|x_i - x_j\|_{\xi}}{\max_i \forall_i \max_j \forall_j \|x_i - x_j\|_{\xi}} \quad (9)$$

### Setting Hierarchal Structure

Due to the localized GRA, the GSM procedure sorts some classes. A hierarchy of each class is shown as follows.

(1) Let  $C$  indicate a set of elements and it is shown as follows:

$$C_i = \{X_j | e_{ij} \leq \theta\} \quad (10)$$

where  $i, j = 1, 2, 3, \dots, m$ ;  $\theta$  is a class coefficient given as  $0 \leq \theta \leq 1$ ; and

$$E = \begin{pmatrix} e_{11} & e_{12} & \cdots & e_{m1} \\ e_{21} & e_{22} & \cdots & e_{m2} \\ \vdots & \vdots & \ddots & \vdots \\ e_{m1} & e_{m2} & \cdots & e_{mm} \end{pmatrix} \quad (11)$$

is the error matrix as  $e_{ij} = |\gamma_{oi} - \gamma_{oj}|$ ,  $0 \leq e_{ij} \leq 1$  and  $e_{ii} = 0$ .

(2) The  $C_{target}$  in this paper ( $C_i$ ) are placed in the digraph when the following conditions are satisfied.

1.  $\text{card}\{C_i\} = \min_{\forall i}$ ; 2.  $C_i \not\subset C_j$  for all  $j, i \neq j$ .

### Setting Paths

Based on Nagai's equation [8], the GSM procedure needs to place a directive path among several pairs of elements and it can be shown as follows.

$$P = \{(x_i, x_j) | \gamma_{ij} \geq \psi, \gamma_{oi} < \gamma_{oj}\} \quad (12)$$

where  $\psi$  is a path coefficient as  $0 \leq \psi \leq 1$ .

Next, establish a direct path for all pairs  $(x_i, x_j)$  of  $P$  from  $x_i$  to  $x_j$

### Research Design

#### Participants and Coding

The paper organized a research team of eight craft product design professionals whose graduated from department of craft design as examinees. Based on their cognitive understanding of the course of the craft product design, the paper execute the investigation of the importance of the course. Subjects are coded from  $S(A)$  to  $S(H)$  as follows (Table 1).

**Table 1. The Information of Experts with Coding**

Experts	Professional Years	Professional area
<i>S(A)</i>	3 years	Jewelry Designer, New Products Development
<i>S(B)</i>	3 years	Stone Craft making , Hand-made and Machine-made
<i>S(C)</i>	5 years	Design Drawing, Craft Products Development, Market Analysis
<i>S(D)</i>	5 years	Design Drawing, Accessories Design, New Products Development, Design with multi-material, Pattern and Modeling Design
<i>S(E)</i>	6 years	New Products Development, Design with multi-material, Design management
<i>S(F)</i>	8 years	Senior Designer at a workshop, Design for custom-made Products , Cost estimation
<i>S(G)</i>	9 years	Senior Designer at a workshop, Innovation Design for Cultural Products, Handicrafts Design and Development
<i>S(H)</i>	12 years	

### The Formation and Coding of the Content in the Course of Craft Product Design

The paper selected ten departments of product design with craft product design courses in universities from northern, central and southern regions of Taiwan. Based on the course in craft product design, the paper collated and analyzed courses into eight major programs and these programs are coded as follows (Table 2).

**Table 2 The coding of the courses in Craft Product Design**

Craft Product Design courses Main Factors	learn content item
<i>P(A)</i> Capacity of design analysis and idea development	Training of material selection and shape design Training of ability to understand graphics and application of technical drawing Training of design drawing for craft products Training of material character and idea developing

$P(B)$ <b>Capacity of hand skills</b>	Learning of application of hand drawing skills Learning of the procedure in the craft product making Training of the safety use in tools and instruments Training of use and maintenance of tools
$P(C)$ <b>Capacity of machining</b>	Training of mechanical working Training of industrial knowledge and safety regulations Learning of forming capacity by machine Training of safety use and maintenance in Power Systems
$P(D)$ <b>Capacity of Texture and Surface Decoration</b>	Learning of surface decoration skills Training of the working procedure for surface decoration Training of the ability to design the texture of the product Learning of material and related tools for surface decoration
$P(E)$ <b>Capacity of integration with computer</b>	Learning of the ability to dynamic modeling by computers Training of 2D&3D design software for design Ability to integrate design idea with computer Understand the benefits of CAD/CAM
$P(F)$ <b>Capacity of Design management</b>	Capacity of the quality control for the work Capacity of making a customized work Execution of integrated craft product Planning ability to save effort, time and material
$P(G)$ <b>Capacity of skill application and development</b>	Ability to make complicated model Ability to combine multiple materials in works Ability to develop advance skills by themselves Ability to overcome the challenge of new product
$P(H)$ <b>Capacity of the estimation of cost</b>	Ability to estimate the time consuming Ability to operate the cost of material and production Ability to determine the margin of profit Ability to integrate the hand-making and mechanical-making cost

### Establish the Raw Decision-making Matrix and GRA

The paper constructed the decision-making matrix by using assessment of subjects and the craft product design courses. Follow the three principles: non-dimension, scaling and polarization, the matrix can be constructed. Then the examinees were asked to choose from Saaty's 9-point scale ranging from 1 (equal importance between the elements) to 9 (absolute dominance of element over ) and reciprocal values, respectively . Then Nagai's equation is used to analyze these results [23]. LGRA and Larger-the-better are used to calculate and all of the data are consistent by providing the results. ( Table 3.)

**Table 3. The  $S(A) \sim S(A)$  value of the professionals**

<b>S(A)</b>	P(A)	P(B)	P(C)	P(D)	P(E)	P(F)	P(G)	P(H)	LG RA (value)
Large r-the-better	1	1	5	3	3	7	9	7	
P(A)	1	1	5	3	3	7	9	7	1.000
P(B)	1	1	5	3	3	7	9	7	1.000
P(C)	1/5	1/5	1	1/3	1/3	3	5	3	0.360
P(D)	1/3	1/3	3	1	1	5	7	5	0.642
P(E)	1/3	1/3	3	1	1	5	7	5	0.642
P(F)	1/7	1/7	1/3	1/5	1/5	1	3	1	0.129
P(G)	1/9	1/9	1/5	1/7	1/7	1/3	1	1/3	0.000
P(H)	1/7	1/7	1/3	1/5	1/5	1	3	1	0.129
CI=0.05 < 0.1									

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<b>S(H)</b>	P(A)	P(B)	P(C)	P(D)	P(E)	P(F)	P(G)	P(H)	LG RA (value)
Large r-the-better	1	3	7	9	5	5	9	5	
P(A)	1	3	7	9	5	5	9	5	1.000
P(B)	1/3	1	7	9	3	3	7	5	0.750
P(C)	1/7	1/7	1	3	1/3	1/5	1	1/3	0.103
P(D)	1/9	1/9	1/3	1	1/7	1/7	1/3	1/5	0.000
P(E)	1/5	1/3	3	7	1	1	3	3	0.384
P(F)	1/5	1/3	5	7	1	1	5	3	0.492
P(G)	1/9	1/7	1	3	1/3	1/5	1	1/3	0.103
P(H)	1/5	1/5	3	5	1/3	1/3	3	1	0.281
CI=0.07 < 0.1									

Examin ees (S)	Main Factors ( P ) LGRA value								CI (value)
	P(A )	P(B )	P( C )	P( D )	P(E )	P(F )	P( G )	P(H )	
<b>S(A)</b>	1.000	1.000	0.360	0.642	0.642	0.129	0.000	0.129	CI= 0.05 < 0.1
<b>S(B)</b>	0.927	1.000	0.652	0.764	0.000	0.382	0.139	0.139	CI= 0.08 < 0.1
<b>S(C)</b>	1.000	1.000	0.410	0.642	0.129	0.642	0.000	0.126	CI= 0.06 < 0.1
<b>S(D)</b>	1.000	0.467	0.421	0.812	0.254	0.619	0.000	0.097	CI= 0.08 < 0.1
<b>S(E)</b>	1.000	1.000	0.642	0.458	0.129	0.000	0.360	0.129	CI= 0.05 < 0.1
<b>S(F)</b>	1.000	0.693	0.172	0.000	0.333	0.760	0.092	0.381	CI= 0.08 < 0.1
<b>S(G)</b>	0.870	1.000	1.000	0.144	0.000	0.688	0.144	0.397	CI= 0.09 < 0.1

$S(H)$	1.000	0.750	0.103	0.000	0.384	0.492	0.103	0.281	$CI = 0.07 < 0.1$
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## The Implementation and Analysis of GSP and GSM

### Formation and Calculation of LGRA-S

Based on the S-P analysis chart, the eight subjects are coded to the ordinate of LGRA-S chart and the eight courses in product design are assigned to the abscissa in the LGRA-S chart. Then, the values of LGRA in Table 3 were respectively filled into  $P(A) \sim P(H)$  and the LGRA-S chart of Tab.4 was produced. Then the Larger-the better column is set in abscissa to provide the computation of the examinees by using Nagai's equations and Matlab[16]. The detailed LGRA-S results and the GRA ordinal are shown in Tab. 4 and Table Tab. 5, respectively.

Table 4. LGRA-S Chart

$S \backslash P$	$P(A)$	$P(B)$	$P(C)$	$P(D)$	$P(E)$	$P(F)$	$P(G)$	$P(H)$
<b>Larger-the-better</b>	1.000	1.000	1.000	0.812	0.642	0.760	0.360	0.397
$S(A)$	1.000	1.000	0.360	0.642	0.642	0.129	0.000	0.129
$S(B)$	0.927	1.000	0.652	0.764	0.000	0.382	0.139	0.139
$S(C)$	1.000	1.000	0.410	0.642	0.129	0.642	0.000	0.126
$S(D)$	1.000	0.467	0.421	0.812	0.254	0.619	0.000	0.097
$S(E)$	1.000	1.000	0.642	0.458	0.129	0.000	0.360	0.129
$S(F)$	1.000	0.693	0.172	0.000	0.333	0.760	0.092	0.381
$S(G)$	0.870	1.000	1.000	0.144	0.000	0.688	0.144	0.397
$S(H)$	1.000	0.750	0.103	0.000	0.384	0.492	0.103	0.281

Table 5. LGRA-S GRA Ordinal

Subjects	Gamma		Subjects	Gamma	Ordinal
$S(A)$	0.707		$S(H)$	0.000	8
$S(B)$	1.000		$S(F)$	0.125	7
$S(C)$	0.925		$S(E)$	0.565	6
$S(D)$	0.741		$S(A)$	0.707	5
$S(E)$	0.565		$S(D)$	0.741	4
$S(F)$	0.125		$S(G)$	0.839	3
$S(G)$	0.839		$S(C)$	0.925	2
$S(H)$	0.000		$S(B)$	1.000	1
Raw data			Ordinal data		

## Formation and Calculation of LGRA-P

LGRA-P (Tab. 6) is formed by transporting the ordinate and abscissa in Tab. 4. Once again, professor Nagai's equations of LGRA and Larger-the-better are used in Matlab to calculate Gamma [27,29], and the raw data are presented in. Table 6, and the ordinal numbers are shown as follows:

$$P(A) \succ P(B) \succ P(F) \succ P(C) \succ P(D) \succ P(E) \succ P(H) \succ P(G)$$

**Table 6. LGRA-P Chart**

$P \backslash S$	$S(A)$	$S(B)$	$S(C)$	$S(D)$	$S(E)$	$S(F)$	$S(G)$	$S(H)$
<b>Larger-the-better</b>	1	1	1	1	1	1	1	1
$P(A)$	1.000	0.927	1.000	1.000	1.000	1.000	0.870	1.000
$P(B)$	1.000	1.000	1.000	0.467	1.000	0.693	1.000	0.750
$P(C)$	0.360	0.652	0.410	0.421	0.642	0.172	1.000	0.103
$P(D)$	0.642	0.764	0.642	0.812	0.458	0.000	0.144	0.000
$P(E)$	0.642	0.000	0.129	0.254	0.129	0.333	0.000	0.384
$P(F)$	0.129	0.382	0.642	0.619	0.000	0.760	0.688	0.492
$P(G)$	0.000	0.139	0.000	0.000	0.360	0.092	0.144	0.103
$P(H)$	0.129	0.139	0.126	0.097	0.129	0.381	0.397	0.281

**Table 7 LGRA-P GRA Ordinal**

Main Factors	Gamma		Main Factors	Gamma	Ordinal
$P(A)$	1.000		$P(G)$	0.000	8
$P(B)$	0.786		$P(H)$	0.122	7
$P(C)$	0.362		$P(E)$	0.129	6
$P(D)$	0.298		$P(D)$	0.298	5
$P(E)$	0.129		$P(C)$	0.362	4
$P(F)$	0.362		$P(F)$	0.362	3
$P(G)$	0.000		$P(B)$	0.786	2
$P(H)$	0.122		$P(A)$	1.000	1
Raw data			Ordinal data		

According Table.7, the paper arranged the courses in model-making corresponding with Table. 2 and listed assessment results table as follow ( Table 8 ) .

**Table 8 Evaluation results**

Main Factors	Ordinal	Item description
$P(A)$	1	Capacity of design analysis and idea development

$P(B)$	2	Capacity of hand skills
$P(C)$	3	Capacity of machining
$P(F)$	4	Capacity of Design management
$P(D)$	5	Capacity of Texture and Surface Decoration
$P(E)$	6	Capacity of integration with computer
$P(H)$	7	Capacity of the estimation of cost
$P(G)$	8	Capacity of skill application and development

### Formation and Analysis of GSP

According to S-P analysis theory, Based on the foundation of Tab. 4 and Tab. 6, and according to the ordinal numbers of Tab.5 and Tab. 7, the GSP figure is formed, and it has become the main analytical figure of the paper which is shown in the following Fig. 2.

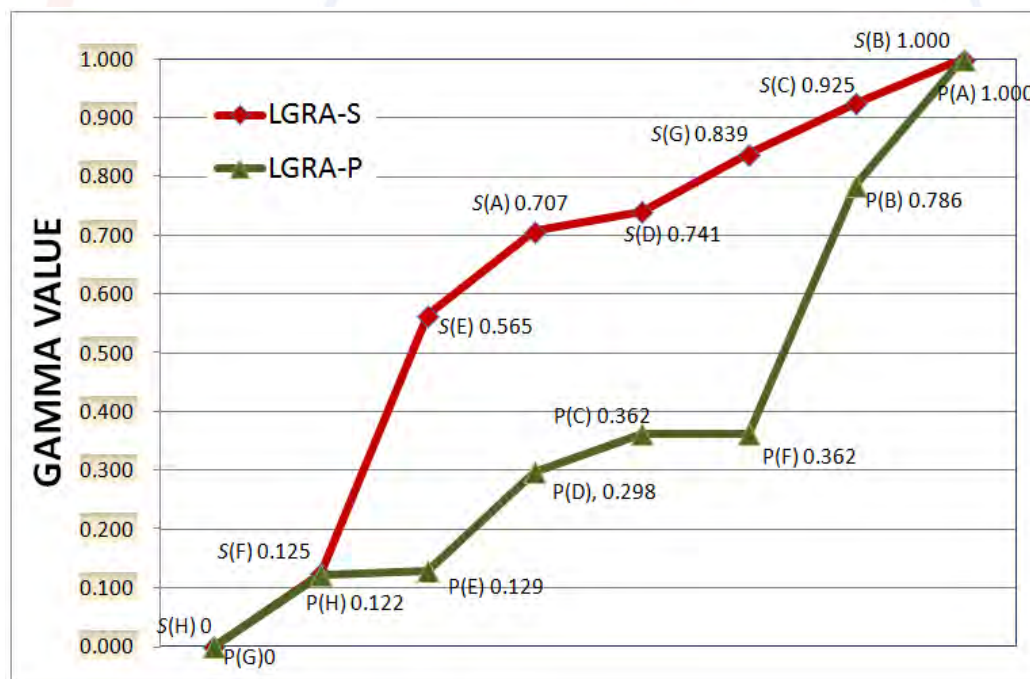


Fig.2. GSP chart

Fig. 2 showed two curves, LGRA-S and LGRA-P. According to the theory of S-P chart the upper-left area is belong to high correct rate and lower-right area is belong to low correct rate. The results corresponded to the structure of the S-P chart.

According to Tab. 5, The largest Gamma value were  $S(B)$ --1, respectively. The paper found that  $S(A)$   $S(D)$  have the similar anchor point and expressed that these two subjects have the same affirmation

on the assessment. Gamma value of  $S(H)$  is zero and is arranged in the lowest area of Fig. 2. It expresses that the subject deviates from all the others' consensus. This state shows that the result are personal perspective and did not affect the result in this paper. And then, the other subjects had different Gamma values respectively and showed each subject's opinion about the importance of craft product design courses. So, according to the order, they were arranged in the Fig.2 in regular sequence.

In Tab. 7, the most important course was  $P(A)$  and its' Gamma value was 1. The least important course was  $P(G)$  and its' Gamma value was 0. They were arranged separately in the top and bottom of Fig. 2. Gamma value of  $P(C)$  was close to that of  $P(F)$  and it expressed these two courses have similar importance. So, they were arranged in the same anchor point in Fig.2. The other courses had obvious difference in the important degree of the course. Then, they were arranged in the sequence in Fig. 2.

### Formation and Analysis of GSM

For the important degree of craft product design programs, the matrix of Tab.6 was took into Nagai's equations based on partial grey relation and the definition of the Larger The Better, using Matlab to calculate and draw the GSM Structured Chart. The Fig. 3 respectively sorted structure of subjects programs ( $P$ ). According to the curves of the LGRA-P in Fig. 2, they had the similar sorted structure. This verified that the structures of GSP and GSM will not change under the operation of the same Gamma value. But the GSM with vertical structure is more easy to analysis the examination than the GSP with curve structure. This is the important finding of this paper.

Besides, GSM structure chart can make cluster analysis clearly and find the structural factors. The cluster analysis of Fig.3, according to the item of the programs in the Tab.2, can clearly define the structure and sort of the educational content of the craft product design and provide the application of craft product design education.

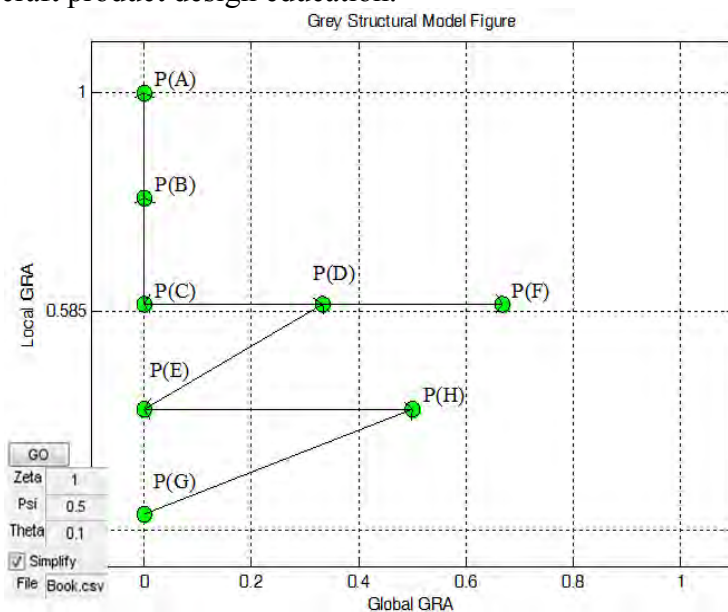


Figure 3. The GSM of ( $P$ )

In the Fig.3, Gamma value of  $P(A)$  was the largest and it expressed that this course is the most important one that all subjects think. Gamma value of  $P(B)$  got the similar value as  $P(A)$ , so it had the relevant importance. The Gamma value of  $P(D)$ ,  $P(C)$  and  $P(F)$  were similar and it expressed that they have similar importance. They also became horizontal arrangement in the figure and formed a cluster. Gamma values of  $P(E)$  and  $P(H)$  were similar and became diagonal arrangement in the GSM. It means that the importance of these programs are very similar and form a cluster. Gamma values of  $P(G)$  was 0 and it was the least important in all programs by all subjects' thought.

## Conclusion

The paper was based on evaluating the people with learning experience and thus made the data objectively and reasonably. The paper operated the Gray relation analysis (GRA), combined with the theory of S-P chart, used the application and analysis according to LGRA and considered the continuity, sequence, integration and articulation. The data of assessment were constructed into vertical structure and showed the conclusion with GSP chart clearly that actually showed the identified assessment of the subjects and the result of the importance of those programs for analysing completely. Furthermore, the paper used GSM chart to display the structural of the importance of those programs. It can clearly execute comparative study and actually provide a new method for craft product design education and a basis of the teaching improvement. This organized, systemic, and innovated methods made the investigation of assessment more accurate and rigorous.

From the results of the paper, GSP chart and GSM chart fully submitted the results of the assessment and made a contribution to teaching and courses arrangement as follows.

1. The method of experts assessment relies on their experience to systemize a definite diagram from unresolved or complex data. The research model of educational assessment could be renovated.
2. The arrangement of the courses will be identified clearly and appropriately and become the benchmark for the new courses arrangement.
3. According to the conclusion of the research, this is an objective paper for actually confirming the importance of the professional course in craft product design.

On the other hand, GSP and GSM made more contributions than S-P chart, and had some advantages as follows.

1. GSP and GSM were operated by the data of assessment and produced through the operation of GRA that can actually reflect the difference of the assessment in the subjects. Gamma value ranging between 0 and 1 can execute the operation of many quantitative data better than the function of the S-P chart that only presented 0 or 1 and can not accurately identify the actual value.
2. The presentation of the S-P chart was vertical zigzag line and each subject or each problem had the fixed length or segment. S-P chart could not localize the actual assessment when many subjects had the same results under the same problem. Under this circumstance, it will make errors. But GSP and GSM is based on the operation of the Gamma value, the diagram produced by GSP and GSM can truly localize the results. So, they were better than S-P chart.
3. GSP and GSM can clearly distinguish the right localization of the structure and scheme. They could find out similar subjects or problems from the sort of the assessment and the state of the cluster. thus, they were better than S-P chart.

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*Human Beings and Other Creatures: Education for Sustainable Development*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

Creatures other than human beings have existed in our culture since our earliest memory. Whether used as images to stand in for divine powers, as figures to represent nature, or even as bearers of human fears and desires, these non-human creatures have taken up numerous shapes and forms in the rich cultures throughout our history. Despite our success in space adventure, and in enormous efforts to dispel “supernatural” intervention in our lives, non-human creatures remain a prominent presence in our lives today, moreover adapting more and more functions with increasing visibility. While it is understandable to see non-human creatures being featured in children’s fictions and young adult literature, it is perhaps worth pondering the spread of these creatures to mainstream popular culture in the English speaking world. This paper proposes to examine a recent fictional publication by history professor Deborah Harkness, *Discovery of Witches* (2011), which not only features a world containing human beings, vampires, witches, and daemons as regular members of the population, but also a witch as the main character and narrator. Although the multi-species world has a history in western culture, this fiction presents a world not only as an ancient fantasy but also a 21<sup>st</sup> century tale of the anxiety of extinction. Through the examination of how the non-human creatures tried to understand their origins, we can view this fictional representation as a masked human search for sustainable development when threatened by a sense of impending end.

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According to some interpretations of the Mayan Calendar, the end of the world will arrive at the end of this year. How should one respond to such a piece of information? Well, if you are reading this paper, I think probably you do not take that very seriously. Otherwise you would be somewhere else doing something that gives you pleasure, or that you find meaningful, for the amount of time left before the approaching end is too preciously little to be squandered carelessly. On the other hand, the reason that you do not take the announcement of the impending end seriously may be your faith in the human ability to sustain itself come what it may, or it could be because over the years there have been so many similar announcements and threats that you have become quite immune to the fear and anxiety usually induced by this kind of announcements.

Indeed, fear (and thus prediction) about the end of the world, the total erasure of everything that we have established has never been lacking in the history of humankind. The anxiety is not just individual people's uncertainty about what is to come in the future, but a collective anxiety that is also mixed with hopes and excitement about what will come in the new era. This complex psychology is infectious and has shown its ability to spread to different aspects of life. We can see this excitement cum despair reflected in the cultural and literary works towards the end of the 19<sup>th</sup> century. The pride in what we can know about the world using science and the despair of what we don't know about ourselves find a perfect expression in Robert Louis Stevenson's *The Strange Case of Dr. Jekyll and Mr. Hyde*, which perhaps reminds us of Mary Shelley's *Frankenstein*, a narrative already raising similar issues concerning the progression of the time and the uncertainties we suffer at the same time. This head-on collision of the old and the new can also be seen in Bram Stoker's *Dracula* which presents the excitement brought by the new era side by side with the haunting unknown chasing us from the past. These confused emotions can also be seen in paintings such as *At the Moulin Rouge* (1895) by Henri Toulouse Lautrec and *The Scream* (1893) by Edvard Munch. The feeling of degeneration, decline and decadence against the impending end of one era and the beginning of another is perhaps most fatefully seen in Oscar Wilde's play *Salomé* (1891), and not much later, his own personal downfall at the height of his career. The notorious murders happening in the Whitechapel area in London at about the same time tells us that the fear and anxiety reflected in the artistic and cultural products did have a real source.

As we all know, humanity stepped safely and even gloriously into the 20<sup>th</sup> century. Science and technology continued to flourish, bringing so many previously unimaginable advancements to aspects of life that the end of the 20<sup>th</sup> century was almost unrecognizable for those who lived just one century ago. And yet, behind the surface of all the improvements, doubts and uncertainties about the future of humanity were never far away. The two world wars, both happening in the first half of the new century, moreover making use of exactly the improvements proudly presented by scientists in the new century, certainly did not inspire confidence in human beings about their ability to make wise decisions for the good of the majority. Thus in the second half of the 20<sup>th</sup> century, the fear for a third world war, one that is more destructive, involving more people, and harder for mankind to recover from, if ever, had always been there in the air. When this physical war did not materialize at the end of the century, there was the millennium bug scare which put the developed world in a state of panic because so much of its life had been taken over and controlled by hands other than human.

And then even after we stepped into the 21<sup>st</sup> century unscathed by the millennium bug, the general outlook of the world was still not one of undisturbed peace and hope. Political and humanitarian unrest is a matter of daily occurrences, economic crises left the previously rich countries much shaken, talks about the ecological disasters continue and increase since the mid-20<sup>th</sup> century, and technology continues to bring us both nice and nasty surprises. Feeling like being attacked from various fronts, humanity has to face the talk of yet another end of the world just 12 years into this brave new century. As an educator working in the field of humanities, I do not have adequate professional knowledge to estimate the extent of damage these factors have on our world, or whether this new scare about the impending end of the world is justified or not. What I see, however, is a culture that is aware of its degeneration and is crying for help through its many products and in different ways. Science fiction, beginning at the end of the 19<sup>th</sup> century, documents not only our dream of the fantastic achievements made through science, but also the horror of a life which is taken over by the products of scientific research. Film adaptations of famous science fiction are particularly powerful in their depiction of these horrors using the visual medium. One after another, in popular science fiction movies we see exploration of space bringing intelligent and superbeings from outside earth to invade us and destroy everything or conquer us to become their slaves. Even without being attacked by aliens, life on earth is not a peaceful improvement. Devices we create to help us in our daily life take up so much of our daily tasks that they threaten to become us, and replace us as the beings living on this earth. On the other hand, while we improve machines to have more human qualities, we the real human gradually forget and lose some of these qualities which make us unique. Thus it seems that even in the most entertainment-oriented popular cultural products, the cry for help is visible and audible.

In this paper, I propose to examine a recently published novel, *A Discovery of Witches* (2011), by historian and academic Deborah Harkness, and read it as a symptom of the times, a call for help from a culture that sees its own decline and fears for its demise. While there are thousands of interesting cultural narratives created everyday, this novel imaginatively combines the target to entertain, using some of the most recognizable formula and features currently fashionable in our culture, and the function of describing a situation in our world that requires our attention and concern. I feel that this narrative which is partly fiction, partly history, and partly fantasy, has managed to ride on the current fashion in popular culture to convey an important message to its audience – that we have reached a point in our history that new perceptions of what we need to sustain our existence are called for, and that an awareness of this need is the beginning of finding a way for sustainable development.

In the 21<sup>st</sup> century world where Diana Bishop lived as a historian of science, there were 4 species of beings - human, witch, vampire and daemon, although human beings were by far the majority. On the whole these beings existed peacefully side by side with one another, because the creatures had their own age-old covenant which their ancestors had agreed to follow in order to maintain a reasonable balance of power among creatures themselves, and they were also careful not to make their presence and their idiosyncratic ways felt too much by the human beings. This point of more-or-less equilibrium among the different beings was not an easy achievement, because the beings had such different powers and ambitions which could lead to

major conflicts and even the end of all beings. As inhabitants of this world in the 21<sup>st</sup> century, we the readers are well aware of the great wars, purges, epidemic, disasters that conflicts among different groups of people had resulted in, not to say beings with special powers as possessed by the fictional creatures. In fact, what Harkness has done, in prescribing 4 species of beings to her fictional world, is to distribute the special abilities and potentials of human beings among the 4 fictional beings, in highly exaggerated extents, to explain how the world up to the present is a result of the combined work of these beings. The longevity of the vampire which allows them to take part in major battles in the world, and to provide a coherence to events; the power of the witches to bond with nature and its powers; the extraordinary intelligence of the daemons which enables them to stand at the forefront of their times and invent the best for the world; and finally the endurance and adaptability of the human beings to let them grow to be the majority inhabitants of the world. In this way, Harkness has rationalised the fantastic, guiding our attention to see these creatures' "human" attributes rather than their out-of-the-world power.

Diana Bishop, as a descendent of Bridget Bishop, the first witch to have been hanged in Salem, and the daughter of Rebecca Bishop and Stephen Proctor, both powerful witches from great New England families, had been born with the great baggage of her family's reputation. That was the reason why she consciously lived a magic-free life, created her world through serious academic work, adapted a sportive lifestyle and devoted her time to study the history of science. In this volume of the narrative, Diana accidentally came across a much sought after manuscript *Ashmole 782*, and released the power bounded inside the book for centuries. The activation of the power of the book immediately alerted all the other creatures to the presence of this book, and started a race for its capture. Matthew Clairmont, a vampire from a powerful family who also wanted the book, watched Diana struggle with her own power, and finally joined hands with her in seeking to get hold of the book before all the other creatures. The narrative is the story of how the two, together with their families and allies, competed with the other creatures to find the book, and learn the secrets of their own ancestors recorded inside.

In the course of her adventure, Diana Bishop had come to realise that it was useless to deny who she was, her heredity, her in-born abilities and her potentials – the capacity to bond with nature and its powers, to maintain an intimate relationship with other beings of the world, to have the sensitivity to look into the others and know how they feel, and so on – because those were her attributes whether she liked them or not. Similarly, the vampire's long life across time gives it the time to accumulate wealth, the perspective to understand the meaning of life, and the courage to fight for what is treasurable, such as dignity, honour, loyalty and so on – all these well demonstrated in the various members of the Clairmont family. The daemons' extraordinary intelligence, on the other hand, makes them the legendary inventors, artists and geniuses in various times. Although the inhabitants of Harkness' fictional world are fantastic creatures not of our world, what they represent are none other than the ordinarily seen, the treasured and sometimes feared qualities of humankind. As the drama of their fight for manuscript *Ashmole 782* unfolds, when each creature used his special ability to steal, to coax, to cheat, to damage, to outwit, and to fight one another, the central driving force of this series of actions is still the very human motive of wanting to know the content of the manuscript which was thought to contain the secrets of all the beings – almost a parallel of Darwin's *On the Origin of Species*.

According to Peter Knox, one of the most eager witches to get his hands on the book, *Ashmole 782* contained “[t]he first spells ever constructed. Descriptions of the enchantments that bind the world together.... The secret of immortality. How witches made the first daemon. How vampires can be destroyed, once and for all” (Harkness, 2011, pp. 157-8). From a witch’s perspective, “[i]t’s the source of all [their] power, past and present. It cannot be allowed to fall into the hands of daemons or vampires – or humans” (Harkness, 2011, p. 158). As for the daemons’ interest in the manuscript, it was because they believed that *Ashmole 782* was “the story of all origins – even human origins” (Harkness, 2011, p. 187). And vampires? Matthew Clairmont, who had been looking for this lost manuscript since the publication of Darwin’s book, remarked that, “Vampires believe the lost manuscript explains our longevity and our strength, ... In the past, our fear was that this secret – if it fell into witches’ hands - would lead to our extermination. Some fear that magic was involved in our making and that the witches might find a way to reverse the magic and destroy us. It seems that that part of the legend might be true” (Harkness, 2011, pp. 187-188).

There, we do not need to know the content of *On the Origin of the Species*, or even to agree that *Ashmole 782* could possibly contain any of the things mentioned by these creatures in order to understand the importance of this lost manuscript in the fiction. The story of our origin, the secret that will explain us, how to live forever, and avoid death – aren’t these the very secrets that human beings have been pursuing in different ways throughout history? And aren’t they the driving force for most of our pursuits in science and technology to improve and prolong, our lives? In the novel, the creatures had their own fictional reason for wanting to know the secrets of the manuscript, as Matthew Clairmont revealed from his study of the creatures:

It seems that witches, like vampires, have also felt the pressures of surviving in a world that is increasingly human. Daemons, too. They exhibit less genius – which was how we used to distinguish them from the human population – and more madness. (Harkness, 2011, p. 198)

Although readers do not share their superhuman or preternatural powers to race one another in getting hold of the missing book, we can sympathize with their motives without having to be a witch, a vampire or a daemon, for their desires and fears are human.

But if the manuscript has been known all along to contain all these secrets of the various powerful species, why was it that the race for capturing this book suddenly intensifies in the beginning of the 21<sup>st</sup> century, when the world is so full of promises because of the advancement in scientific and technological development? Matthew, who was engaged in cutting edge scientific research concerning the development of the various creatures, especially the vampire, discovered that although they were known for their longevity (he himself had at least lived for 1500 years), fewer and fewer vampires had been made in the recent centuries, and the vigor of these newly vampires was not comparable to those of the past. In other words, even the vampires, the undead, were dying out. This decline in the life force of the species was found not only among the vampires, but also in the daemons and the witches. While the genius of the daemons have not diminished, there had been many more cases of daemons ending in madness; and the witches’ power of bonding with nature had to give way to the much more aggressive power of the new technology manipulated in the hands of the human beings. The three creatures were facing extinction, when the world will be

taken over entirely by the human beings, who although had no special talent, were able to survive the most difficult times because of their endurance and adaptability.

So in many ways *A Discovery of Witches* is a very recognisable reading experience for a 21<sup>st</sup> century reader. The subject matter and the setting are both well familiar to the general reader, as Harkness (2011) remarked in an interview, “It’s pretty hard not to notice the popular preoccupation with witches, vampires, and things that go bump in the night” (Readers’ guide, p. 6). It is, however, not the presence of these icons from our traditional stories in itself that makes us connect with the narrative, but rather the conscious “updating” that Harkness had achieved which place the novel and its concerns firmly in our midst. The updating is not just the superficial dressing up by having these characters use the everyday objects of our life such as the computer, the smart phone, or engage in cutting edge scientific research regarding DNA. It is more the creation of a sentiment that we can well identify with at the beginning of the 21<sup>st</sup> century, a time when we celebrate the breakthroughs in science yet mourn for the gradual disappearance of a sustainable globe.

This sentiment of the new century, interestingly, is so clearly felt partly because of the presence of so many “old” things in the narrative. Diana was a historian of science and she had a very good sense of the consistent pursuits human (and other) beings had started to make in the past and which had continued untiringly to the present. She also had no problem tracing Matthew’s and the Clairmont family’s unending struggles across both the bright and dark periods of our history – fighting the holy wars, upholding the highest principles of human nature despite the sacrifices needed, and in fact using their long life to accumulate knowledge in the hope of finding a way to sustain life. As Diana and Matthew engaged in their investigation concerning the missing manuscript, citing the major incidents in human history, we are given a “good lesson” of history and an overview of the wonderful courage and insight that many great thinkers and artists in the past had shown to bring humankind to this point in time. Although this novel is definitely not meant to be a history book, and the writer has taken some liberties with the historical facts, the general outlook is a celebration of the history we have carved out for ourselves.

At the end of the novel, Diana and Matthew had decided to “timewalk” (their expression for travelling in time) to 1590s England in order to chase after *Ashmole 782*. It was a difficult feat to achieve and full of danger, even for a potentially gifted witch such as Diana and a determined and wealthy vampire such as Matthew. This return to the past is definitely a plot-oriented decision, to provide a space and an occasion for their adventure, and apparently also a choice made with the author’s own expertise in mind. At the same time, however, the characters’ return to the past, assisted by the witch’s supernatural power and the extraordinary wealth accumulated in a vampire’s long life, to the root of the problem, concurs with the general outlook of this narrative – the fusion of the past and the present – to draw our attention back to basic issues that human beings are concerned about. Watching Diana and Matthew drive away, the ghosts of Bridget Bishop and Diana Bishop’s grandmother conversed:

*What will we do now?* Diana’s grandmother asked.

*What we’ve always done, Joanna,* Bridget replied. *Remember the past – and await the future.* (Harkness, 2011, p. 718)

I think this is a very apt ending for the first part of these creatures' adventure, and also a competent introduction of the events to come in the next volume where the setting will be end of 16<sup>th</sup> century England. For the purpose of our discussion, I think it creatively represents the sentiment Humanists have about the value of the humanities in our university education today, and the narrative it has told embodies a strategy that could be followed to update the Humanities subject areas in today's world. These legendary creatures in our traditional stories re-surface again and again in our popular culture because they could be used to express feelings and ideas that we feel safer, more interesting, more thorough, or more thought-provoking, to be expressed by voices a bit farther from home. *A Discovery of Witches* is interesting because among the 4 species inhabiting the fictional world – humans, vampires, witches, and daemons – only the humans are silent and do not play a part in this whole adventure of seeking the book containing the secrets of life. Yet, the sentiments represented in and by the 3 species of creatures, though shying away from human company in the story, are all human, exhibited not only in their desire to secure the book of secrets, but also in their responses to one another during the race for the treasure.

The sequel to this novel, entitled *Shadow of Night* (2012) has already been published. This volume focuses on the Diana and Matthew's journey back in time to Shakespearean England to locate the book that was supposed to contain all the secrets of the 4 species of beings in the world. At the end of the second volume, although it was clear that the book of secrets existed, Diana and Matthew had not succeeded in finding a solution to the problems they saw in the 21<sup>st</sup> century. The solution, if there is one, will probably emerge in the final volume of the trilogy. As an educator who works with young people of the generation who no longer takes pen and paper to classes, and enters lecture halls which offer glorious exhibitions of various digital devices (the students take photos of whatever important message I wrote on the white board), I feel that reading popular fiction as symptomatic of the times is an important exercise for the students. They have to be shown how narratives in the popular culture are talking to all of us, reflecting what real people feel and think in interesting ways. Otherwise the field of the humanities will be further sidelined and finally deemed obsolete, an exact materialization of the fear shown in these popular texts of our culture today.

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*Audiovisual Translation as an Educational Tool in New Egypt*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

In an age where the average Egyptian viewer has access to more than 500 Arabic-language channels and with crumbling state censorship, the issue of education and entertainment in the contemporary digital age becomes very significant, particularly when the percentage of those under 20 accounts for 40% of the total population. The paper looks at the role of Audiovisual Translation (AVT) in raising the standard of education in the digital age. AVT research remains a western European academic pursuit and it has not been translated into different linguistic or cultural settings. AVT research and studies in Arabic remain few and far in between (Gamal: 2007, 2008, 2010, 2012). And while most western research focuses on subtitling, dubbing and audio description, research in other parts of the world need not follow suit. It should use global techniques to tackle local issues and problems and create innovative solutions. Such global/local, or as the now-accepted term 'glocal', suggests a new approach for making AVT a vehicle for educational change and cultural development. The paper examines the situation of audiovisual translation in Egypt and reflects on the Arab world which exhibits the same features seen in Egypt. In previous studies by the author, he points to the need to develop Screen Translation which focuses only on subtitling and dubbing to widen its scope to include other relevant areas such as the DVD Industry, audio-description on television, same language subtitling and the enhancement of the on-line content in Arabic.

Key words: DVD industry, digital technology, young population, Omar Sharif, Arabic content.

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## The digital age

The last decade of the Twentieth Century witnessed major changes to the way information is created, stored and accessed. This can be seen through the advancement in computer technology particularly multimedia and the emergence of digital technology. The Internet became popularised and the size of the computer hard disk has been rising since the early 1990s. Software programs appeared in almost every domain and by 1995 Microsoft offered integrated computing solutions for the average computer user through its Windows 95 operating system. By the mid-1990s multimedia became the operative word with programs co-deploying text, image, colour, sound, motion, and video in a single medium. Software programs such as PowerPoint (1997) had an impressive impact on the style of presentation not only in academic and educational settings but also in business, medical and the financial sectors. This development gave rise to multimodality as an area in linguistics that took the mono-dimensional Hallidayian Systemic Functional Linguistics a step further (Baldry and Thibault: 2006). Today, texts and discourse are characterised by their multisemiotic nature and this, in turn, led to different approaches in text analysis which focus on the multimodality of the text whether in print, on the internet or on screen.

## The new medium

While multimodality is not a totally new concept since the ancient Egyptians employed a verbo-visual system of writing (the hieroglyphs) and through to the last two centuries cartoons, children books, picture books, and advertisements have been using image and language to create meaning, the concept of multi-modal and dynamic text was born with the digital technology that enhanced the resources of meaning-making activities as can be seen today through interactive web sites, commercials, CD-ROMS, educational programs and promotional material in electronic format. Today, the concept of *infotainment* is part and parcel of the cultural scene in the 21<sup>st</sup> century and is endorsed by the educational sector as well as the entertainment industry. The manifestation of this can also be seen in the complimentary CDs that accompany books, magazines, newspapers and the promotional DVDs that corporates produce in a wide range of industries from tourism to investment.

## The digital versatile disc

The appearance of the Digital Versatile Disk (DVD) in 1998 gave the broadcasting, cinema and television industries a unique advantage: accessibility. The invention of the DVD has been termed the most significant invention for film since the advent of sound. The DVD differs from the CD-ROM (Compact Disc –Read Only Memory) in many ways as it stores up to 70 times the content of a normal CD-ROM but more importantly it can store video, text and sound. It can also arrange material into chapters which are searchable. The medium has been widely utilized by a large number of publications offering DVDs for specialized coverage. Magazines particularly make use of the new medium by presenting topics capitalizing on the inclusive multimedia capability of DVDs. Corporate videos, which originally replaced print brochures and information packages, now appear on DVDs with

several topics arranged in a searchable format and with multi-language versions. This last capability means that films could now be stored with subtitles in a large number of languages loaded on the same searchable disc. A single DVD disc can store subtitles in up to 40 languages and soundtracks for up to 8 languages (Carroll: 2004).

A typical feature film DVD has two sections: the film and the Extra Features. The Extra Features vary from film to film, but on average they include the following: film trailer, scene selection, deleted scenes, changed endings, bloopers, interviews with cast and crew, commentary on the film, the original film poster and the language options. This could take the form of either subtitles or language tracks. An average American film sold in Australia is typically subtitled into 12 to 20 languages and has sound tracks in about three to four languages. In addition to the bonus or Extra Features, there are several versions of the same subtitled film such as: the standard release, the deluxe release with commentary, the anniversary release with deleted scenes, the box-set release with similarly themed pictures, and the aluminum box-set release with the director's other titles.

National cinema industries began producing DVDs of their films with subtitles and dubbed sound tracks since the year 2000. The portability of DVDs meant that films can be available and accessible by wide audiences the world over. Whereas American films have dominated the world market for many decades due, inter alia, to their technical specifications and distributing power, the new digital medium offers local cinemas an opportunity that was unattainable prior to 1998. Today, almost every cinema in the world has its own films available on DVD and many of them come with subtitles at least in one foreign language: English.

### Egyptian DVDs

The first Egyptian DVDs appeared in 2002 (Asharqalwasat: July 2002) with two significant works: *Days of Sadat* (2001) and *A Man in Our House* (1961). The former examines the life and times of Egyptian president Anwar Sadat (1918-1981) starring prominent Egyptian actor Ahmad Zaki. The film was a recent success coinciding with the twentieth anniversary of Sadat's assassination. The latter starring Omar Sharif is considered one of the Best 100 Films ever produced by Egyptian cinema (Tawfic: 1969) and also one of the Most Important 100 Films that reflect the development of the Egyptian cinema industry (Al Hadary: 2007). The early history of the DVD industry in Egypt has not been documented and the little available information is neither complete nor official (Gamal: 2007). The first collection of films to be produced on DVD was titled 'Egyptian Cinema Classics' which included a number of films that appeared in Tawfic's (1969) initial list of the Best 100 films although it also contained a number of other popular films (Alsharqalawsat: September 2002). The company Finoon produced about 100 titles before it was acquired by Rotana, a Saudi media company that also purchased the originals of almost one third of the Egyptian film library and remastered them for its free-to-air *Rotana Cinema* and *Rotana Zaman*, two satellite channels that specialize in showing current Egyptian films and old films. The viewership of Egyptian films exceeds the 300 million viewers in the Arab world and extends to Arabic-speaking communities almost everywhere in the world via satellite. The Arabic word *Zaman* means old, previous and

before. However, one of the connotations of the word is “good old times” and also classic. Thus Rotana *Zaman* has come to signify classic Egyptian cinema. In May 2012, Rotana Company launched a new channel titled *Rotana Classic* which, in addition to showing old and classic Egyptian films, it began showing old television interviews and live concerts mostly from Egypt which in this context the word classic came to mean old and “archival” programs. The channel uses as a subtitle “Eternal masterpieces”.

At their first appearance in 2002, Egyptian DVDs though remastered and produced in a portable format were not intended for the local market, neither the Egyptian nor the regional Arabic-speaking market. This could be ascertained from the following observations: There are numerous paid and free-to-air satellite channels showing and even specializing in showing Egyptian films, which by far, is the primary cinema industry in the region (Hayward: 2000). In the most populated-Arab country, Egypt, the number of people under the age of 20 reaches 40% ( [www.cia.gov](http://www.cia.gov)) and this age group tend to be more interested in contemporary films rather than in old or “classic” films. Also, the DVDs were originally remastered for satellite broadcasting but with the DVD technology the subtitling was added and the DVDs were marketed in Europe first and later in the Middle East. Finally, when the un-mastered version of the film was being sold on CD-ROM for 11 Egyptian pounds (A\$2.40) the DVD was being sold for 80 Egyptian pounds (then equivalent to the same cost of a DVD in Australia A\$20). This means that the cost of the DVD was beyond the purchasing power of the average Egyptian viewer. The subtitling of the films, old and new, was offered into English and French and with the remastering and marketing being in London, it was almost certain that the DVD industry was intended for the “target” viewer. Today, the only source for what Egyptian film is available on DVD is at the London-based company Fineartfilm.

### Cinema in Egypt

The Lumiere Brothers took their Cinematograph to Alexandria in 1896, the same year they were showing their early films at cafes in Paris (Abu Shadi: 2004). Within a decade, and in 1907, Egypt would have its dedicated buildings to showing films: a cinema theatre. Egyptian silent films began as early as the 1920s and the first feature silent films *A Kiss in the Desert* and *Laila* appeared in April and November of 1927. In 1932, the first talkie *Children of the Rich* was montaged and subtitled in Paris. The first purpose-built studios were established in 1935 and *Zainab* was the first Egyptian film to participate abroad at the first session of the Venice International Film Festival of 1936. During its peak Egyptian cinema was producing 80 films a year and since 1927 it has been the powerhouse of Arab cinema (Hassan: 1995).

SouEIF (2004) points out that in Egypt, films are described as either Arabic or foreign films. Yet, in all other countries films are described as either “Egyptian” or foreign films despite the fact that almost all Arabic-speaking countries have no viable local film industry. In north Africa, where more films are made than anywhere else (except in Egypt) the films have no local audience and are largely viewed as ‘art films’ made for export and directed at ‘target’ audience abroad. Likewise, in Syria, films are produced by the state cinema organisation at

the rate of one film every two years for the purpose of participating at international film festivals. The rest of the Arab world watches “Egyptian” films.

Today, the total number of Egyptian films is estimated to be around 4000 titles which feed the Arab satellite channels (Kassem: 2002). Some of these channels are dedicated solely to the broadcasting of Egyptian films. Throughout its history Egyptian cinema participated at international film festivals and presented its work through some of the most gifted and internationally known directors such as Youssef Chahine, Henry Barakat and some of the talented actors such as Omar Sharif.

### Omar Sharif

In *Blazing Sun* (1954) Omar Sharif made his debut in Egypt thanks to the opportunity given by his school mate and later Egypt’s prominent film director Youssef Chahine and the patronage of Egypt’s first female actress of the day; Faten Hamama. Sharif later married Hamama in 1955, the same year Anwar Wagdi, Egypt’s most popular male actor died. Sharif, through films with Hamama, soon became the most popular ‘premier garçon’ of Egyptian cinema.

Prior to his debut in David Lean’s *Lawrence of Arabia* (1962) Egyptian actor Omar Sharif was already the top male actor in the country. He had appeared in 22 Arabic-speaking Egyptian films in addition to other films in Lebanon and Tunisia where he acted in French. Since his move to Hollywood and subsequent residence in France, he participated in several local productions and acted in English, French and Italian. Yet, despite his residence abroad he continued to be the voice of Egypt through his commentaries on National Geographic documentaries on Egyptian archaeological heritage, Egyptian documentaries and his presence at important functions both in Egypt and abroad. Politically, widely-known but never confirmed, he played a role in Egyptian President Anwar Sadat’s endeavours to restore ties with the US (1974) and to open diplomatic channels with Israel in 1977 (Ynetnews:2006). In 2004, the Egyptian Football Association enlisted him in the team to present Egypt’s case for the 2010 World Cup bid and he has been the honorary President of the Cairo International Film Festival since 2006. Most recently, he provided the audio commentary for the ‘Treasures of Tut Ankh Amun’ Exhibition held in Melbourne in 2011.

While Sharif’s filmography since 1962 is fairly well known and documented for instance at the Internet Movie Database ([www.imdb.com](http://www.imdb.com)), his filmography prior to 1962 is neither examined nor documented. When the Egyptian DVD industry began with an Omar Sharif film it was addressing both the foreign audience by offering a film of a familiar face and the local audience by offering a repeatedly shown and often-watched film. The selected film for this research, *A Man in our House*, is widely considered one of the most loved Egyptian films, a classic in its own right.

### Definition of Classic:

Over the past fifty-one years and since its first screening in April 1961 (Kassem: 2002), *A man in Our House* has been shown several times a year in almost every Arab country. The

film is directed by Henry Barakat (1912-1997), one of the foremost Egyptian directors of the fifties and sixties, a period commonly referred to as La Belle Époque of Egyptian cinema (Maarouf: 2005). In casting the film, Barakat brings together some of the leading actors of the day who made the production a national document that is repeatedly viewed. The film takes as its main theme the struggle for liberation and independence from the British occupation yet the real issue examined is the context of an average Egyptian family and its values. The film is based on a novel by a famous novelist Ehssan Abdelqudous whose novels graced Egyptian cinema more than Egypt's prominent novelist and the 1988 Nobel Prize winner of Literature Naguib Mahfouz. Yet, despite the crew and cast, the popular novel and theme it is the cinematic language employed that created a national icon. Here, multisemiotic features exemplified in the dialogue, décor, cultural semiotic features that are deployed and co-deployed in a particular fashion to create meaning come together to create a film of significant form. Buckland (2003: 2) explains the term

"The art critic Clive Bell came up with the term 'significant form' to indicate what he believes distinguishes good art from bad art. When we say that a film has 'significant form', what we mean is that the whole is more than the sum of its parts. The film's parts add up to create a new entity that does not exist in each part."

Furthermore, Stefan Sharff offers a definition of the term: "Significant form is the opposite of pedestrian rendition... Images fit together so magnificently that they ascend to a higher level of visual meaning" (1982: 7). Film critic and former Censor General in Egypt Abu Shadi (2004, 2006) examines *Fifty classic Egyptian films* and offers a definition of classic films: "Films that transcend time, place and language and command repeated viewing". In her attempt to define classic films, Anthony (2003) suggests "classic movies embody a method of storytelling that leaves something to the audience's imagination". While different views abound on the definition of a classic film, the fact remains that in Egypt *A Man in Our House* is considered an Egyptian classic by virtue of its inclusion in the List of the Best 100 Films (Tawfic: 1969) and in the List of the Most Significant 100 Films (Al Hadary: 2007). Moreover, its repeated showing on July 23<sup>rd</sup>, the National Day of Egypt, since 1961 as well as its showing on Victory Day since 1974 as well as during the month of Ramadan has bestowed, if not confirmed, a special place and position in modern Egyptian and Arab culture. For instance, the film was shown on Emirates Airlines flights as recent as October 2011. The fact that the DVD industry chose to launch its production with the film appears to be justified in attempting to address the local market despite the prohibitive cost of the DVD as well as the non-Arabic viewer who is familiar with the Hollywood actor but has never seen any of his earlier 22 Arabic-language films.

Prior to its release on DVD the film was remastered for broadcasting on satellite channels like hundreds of other Egyptian films that were purchased by foreign media companies and shown on their satellite channels. The Rotana Media Company was founded in 2002 and in 2004 it launched its specialized Rotana Cinema and Rotana Zaman offering round-the-clock "Egyptian" films with the occasional film or two from Lebanon and in 2006 when Keif El-hal (How are you?) the first Saudi Arabian film was produced, it was given a courtesy showing by the Saudi owned company. Rotana purchased the originals of almost one-third the

Egyptian library of films and continued to release the remastered films on DVD. The other two-thirds of the Egyptian film library are almost in the hands of another Saudi Media Company that runs the original Film Channel the ART (Arab Radio and Television) which was launched in 1991. This prompted an Egyptian outcry to ban the sale of originals/negatives and even called on the parliament to initiate a national campaign to buy back Egyptian filmic heritage which should remain in Egypt and not abroad. Once again, the cost of the original film buyback proved to be prohibitive for the Egyptian Ministry of Investments which pulled out of the national campaign. Rotana replied by acknowledging the Egyptian heritage stating that the purchase was legal from the various owners of the originals. Furthermore, it had invested large sums of money in remastering the damaged negatives and most importantly the company is based in Cairo. This means that it employs Egyptians, it has its originals in Egypt and it shows the Egyptian films round-the-clock on its free-to-air film channels.

The debate over the ownership of the negatives of the Egyptian classic films raises some issues. By virtue of having remastered the film and having it broadcast in its original language the media company has discharged a major part of its responsibility towards the Egyptian viewer. However, it is the subtitled version of the film (the DVD) that harms both the company and the reputation of Egyptian cinema abroad by virtue of its defective subtitling. By offering inadequate subtitling, Rotana could be said to subverting the cinema industry in Egypt. An analogy to the translation of Egyptian literary classics is perhaps in order. If classic literature written by Egypt's prominent novelists such as Naguib Mahfouz, Ihsan Abdelqudous and Youssef Idris is translated by well-known and accomplished native English translators the like of Denys Johnson-Davis, William Hutchins and Humphrey Davies, shouldn't the subtitling of films based on these novels merit the same treatment?

#### The audiovisual scene in Egypt

The argument on whether the subtitling of Egyptian classic films should be entrusted to experienced or accomplished subtitlers has not been examined in Egypt simply because the professional context is lacking. The demand for subtitled programs to feed the mushrooming satellite channels, all broadcasting around the clock, has not been mirrored by a demand for subtitling courses or subtitler training opportunities. Subtitling in Egypt has traditionally been a one-way street: subtitling foreign films and television drama into Arabic and prior to the digital age of satellite channels there has been one subtitling company in Egypt: Anis Ebaid & Sons founded in the 1940s (Al Ahram : 1980). The proliferation of satellite channels created the demand for subtitled programs which in turn invited channels to hire more 'translators' to 'translate films' into Arabic. It is perhaps insightful to observe that Arabic does not have a word for subtitling but uses the combination 'film translation', even in the credits of a subtitled film one could read "Translated by..." instead of 'subtitled by...'. Despite the fact that subtitling into Arabic as a professional practice lacks both professional training and academic examination (Gamal: 2008) it continues to respond to market needs on an *ad hoc* basis and despite some well-known and documented challenges (Al Ahram: 2006, Alsharqalawsat: 2003). However, the subtitling of Egyptian programs and feature films into foreign languages and particularly Egyptian films of significant form is a rare activity that has

very little demand in Egypt. In a nut shell, Egypt has always been an importer of audiovisual material and subtitles very little of its own into English. The only subtitling of Egyptian films seems to be confined to international film festivals and in this case the subtitling is privately commissioned by the producer and/or director and is rarely examined. On the other hand, Swedish subtitler Ivarsson and Carroll comment on the logistics of subtitling and points to the important but neglected area of post-production “directors do not care about what happens to their films overseas”(1998: ii). It is also insightful to observe that official translation programs in Egypt (and the rest of the Arab world) continue to disregard audiovisual translation and focus on print translation. For instance, in 2011 several conferences were held by Arabic language academies in Egypt, Jordan, Lebanon and Saudi Arabia to examine ways to strengthen Arabic in the age of globalisation and have suggested several strategies to boost the use of Arabic as well as the national translation programs. However, the multimedia world remains outside their immediate concern and translation on screen does not merit even a mention. It is in this light that the subtitling of Egyptian films and particularly those deemed to be classic films of export quality, should be viewed and judged. Historically, there has been no opportunity neither for the training in or the examination of subtitling Arabic-language films into English.

#### Significance of the DVD industry in today's world

While the term DVD is mostly associated with feature films it is increasingly becoming associated with the audiovisual translation world. In addition to subtitling and dubbing, audio-description for the deaf and hard of hearing viewers, it is also associated with the do-it-yourself or how-to books. Several books, including a book on audiovisual translation (Cintaz: 2007), come with a DVD. As culture in the Twenty First Century is increasingly becoming reliant on online and digital technology, an increasing number of institutions began employing the multimedia format of the DVD as the most convenient format for presenting and storing information and more significantly for making it accessible. DVDs are now used in almost every domain where accessibility through multilingual translation is required. This covers cinema, tourism, law, marketing, advertising, finance, health and investment to name but a few common areas. For emerging economies keen on attracting investments, a single DVD could provide the most convenient and affordable format for producing vital information that is portable, affordable and accessible.

#### Examining translation in the multimedia format

Digital technology over the past two decades changed completely the way translation is produced and consumed (Gambier: 2003, Diaz Cintas: 2007, 2008, 2010). Most translations are now produced and accessed on screen and are associated with more channels: visual, acoustic, video, colour and text. This multimodal format has in turn made translation a complex process that must account for these channels. Whereas traditional print translation was mono-dimensional in the sense that it relied almost solely on text, the current multimodal translation accounts for more. In the case of DVD translation and particularly in the case of feature films, subtitling is a lot more than just translation. The dean of Japanese subtitling Shimizu published a number of articles on the art of subtitling which were collected and

published posthumously in 1992 under the title “Subtitling is not translation”. The dictum originally referred to the fact that in subtitling a film dialogue not everything said is necessarily translated due to the constraints imposed by the medium of film/screen. In the multimodal age, the dictum could be seen in a different light and this time it is not only seen as a reductive form of translation but as a more inclusive form that accounts for other meaning-making features of the medium. In film, and as Abe Mark Nornes (1999) explains translation must be mindful not only of the words spoken, but also of the words unspoken (non-verbal communication), and the other meaning-making features of décor, cultural references, proxemics, kinesics features that contribute to the (target) viewer’s understanding of the subtitled film.

De Linde and Kay (1999) also observes that while native viewers are capable of processing meaning-making features in film “simultaneously” target language viewers tend to process such features “serially”. This means that subtitling must account for a lot more than just the dialogue. Multimodal discourse analysis (O’Hallaron: 2006) offers subtitlers a *modus operandi* that enables them to capture these meaning-making features in a detailed fashion that would make translation easier to account for all features that are deemed necessary for translating meaning and not just the audio. While multimodal description is a slow process (Baldry and Thibault: 2006) time-consuming and a commercially unviable (Taylor: 2003) and even “costly and boring” (Lemke: 2006) the purpose of multimodal analysis has significant relevance to the examination of multimodal documents such as film. One of the main advantages is that it identifies the diverse features that help in making meaning in film. While it is arguable whether a multimodal analysis would benefit a subtitler with undeveloped film literacy, it is almost certain that multimodal analysis is a step in the right direction towards acquiring a heightened awareness of meaning-making features in film and would enhance the subtitling process by making it more sensitive to the visual than to the audio, which is the current situation in the Egyptian DVD subtitling practice. O’Hagan and Ashworth concur that “increasingly translators needed to become computer literate, and now it is becoming increasingly necessary for them to be literate with digital media so that they are able to process various digital content that is subject to language facilitation (2002: 132).

## Conclusion

The events of the Arab Spring in Egypt in 2011 have brought to the fore the importance of the digital technology and social media. The controls exercised by the old regime have crumbled with the espousing of online technology by a massive young population estimated at 405 of the population. The young have espoused digital technology to form new groups of soccer fans The Ultras, political opposition parties April 6<sup>th</sup> Movement, made Facebook the virtual meeting place and are now exploring the field of on-line authoring. For generations literary figures and education specialists have been bemoaning the low level of reading by young Egyptians. While it is indisputable that reading is, and has never been, a national pastime, the new digital age has brought with it some opportunities. Thousands are now contributing online and this energy, if harnessed, may help leading institutions such as the Library of Alexandria to lead the way into enriching the Arabic content online. Reading habits will change in the new digital age and schools must begin putting some of its curricula

on DVD to teach the young how to deal with the new tool, and how to manipulate its features and ultimately author and contribute content and not simply consume it.

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The logo for the International Association for the Advancement of Academic Research (iafor) is centered on the page. It features the word "iafor" in a light blue, lowercase, serif font. The text is enclosed within a circular frame composed of two concentric, hand-drawn style arcs. The outer arc is a light orange color, and the inner arc is a light blue color, matching the text. The overall design is minimalist and academic.

*Leadership in Learning and Teaching Through International Cultural  
Communication*

Marina Azarenkova

0410

National Mineral Resources University, Russian

The Asian Conference on Education 2012

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The great task of the peace is to work morals into it. The only sort of peace that will be real is one in which everybody takes his share of responsibility. World organizations and conferences will be of no value unless there is improvement in the relation of men to men.

Si Frederick Eggleston

The visible difference in the whole definition "Multicultural communication" depends on the differences in culture and historical experience of the countries – participants for the long period of their existence. Even from the position of the so called "pure definition" multicultural world declares about necessity of intercultural communication through tolerance and intellectual development on the base of moral principles as unique value of mankind's existence. To be able to appreciate new approaches to international intercultural cooperation in Learning and Teaching one must look and look all things, and here is where the teachers in different countries step in. Life around us may tell us about all these things from the point of view of political, economical, social, moral, ethic and aesthetic items of our living, but the very teacher has the wonderful power to show them to us. And to classify it. And to explain it to those interested, that nothing is politically right, that is wrong morally. The very long teaching practice with school and university students demonstrates clearly two important intellectual and psychological intercultural communication models, contributing greatly to raising-upbringing A LEADER, responsible for sustainable development of the whole world due to personal professionalism and unique personal development. The role of a teacher is especial as new approach to International multicultural communication itself. A teacher is able to draw our attention to students personality, emphasizes his individuality, character, talents and abilities, he reveals to us the inseparable links that exist between him and surrounding society. Only a leader we have been teaching and upbringing in a student auditorium, penetrating successfully and optimistically through international intercultural communication principles using productive methods of teaching, - enables us to feel the spirit of the times. Leadership in the new conditions of living is a phenomenon. The more we while learning-remembering, suffering, trying to understand and remember, comprehend the past of our motherland and different people, the greater is our solicitude for the future, the deeper we appreciate and love what is ours, the fuller we appreciate and protect what is not ours. In accordance with Leadership as one of the main principles of IIC and the core of the communicating-cooperation we have been approbated some productive methods of teaching-learning on the base of International Intercultural Communication. As a result, it appeared to be wider than even expected. The very IIC as a very sphere of study became a completed perfect complex system-state of intellectual and moral world-conception items, guaranteeing people readiness to be fruitful and useful, sense of stability and sustainable development in a family, community, society, country, world. The teachers work proves, that "We can't direct the wind, but we can adjust the sails".

Common sense is in our case like insight. It lies in engaging in worthwhile activities.

The very teachers unite in their searching for effective methods of teaching the obligatory regulations and notions – firm, understandable, valuable, unforgettable and significant, common for everybody in the world from the position of common sense as the unique value. The wisest Alfred Robert Thatcher ever said: "You work hard, not because work is everything, but because work is necessary for what you want." The Unity of teachers as style of professional thinking, practical method of solving the problems of those taught and need the assistance - is the scientific approach in growing national and international intellectual and spiritual mentality, overcoming any crisis or preventing it. That is what the International Teachers Association has been carrying out, and as any good will and good deed needs time for embodiment.

Educating in a wide sense means a special unique mission. Those carrying out educated function see their mission as that of reconstructing the world attitude to values that are more rich than oil. It is a historical mission, in the point of which is arising people of different countries unite their efforts in restoring their national self-confidence within and its power and prestige abroad. It starts at school, goes on at the University, flows into Society – endlessly.

Taking into account such wise truths as "People do not fail, they give up" and "Life is not so much a matter of position as of disposition" - wise teaching is to affect on forming the whole attitude for life, so important while crises as well of without it.

Affecting the attitude-forming, the teachers in combined efforts shape the personality, enable to feel oneself to be in responsibility for others in their striving to perfection through self-estimation (evaluation) as a lifeguard in a need and a victory.

The task itself is tremendous by scale. The first one is the teacher's personality, applied with all traits are in demand in new conditions. The societies demand the extraordinary qualities of the educator's teaching, inseparable from the robust normality of the intellect.

The other side of the coin is necessity of broadening the whole sphere of social problems, as the assumed right of society. The whole approach is correct both chronologically and logically. In the hard new conditions of any crisis the teachers happen to demonstrate their democratic and pluralistic ideals, derived from the very point of the profession, enabled them to combine in their actions the national and universal aspirations.

Circumstances and persistence are major components in the development process of establishing teacher as a leader of any society. International teaching-stability is based on independent process of educating-making, when the teacher's professional genius is used by them to combine, by the necessity of the past with a shrewd sense of the future. The teachers are to become the main part of the developmental state-engine, able to take into account exclusive national goals with imposed and compulsory inter-and trans-national means of educating implementation. Their contribution to children and adults let the latter to apply their knowledge to the gifts of nature and the items of civilization in order to satisfy their needs maximally safely preventing any crisis. Due to the simple mathematical reasoning the Universal values are equal to highly-skilled teaching itself as method and practice.

The magic of insight comes to those are ready to be in accordance, open and professional. That is why the teachers-professionals are to have the psychological maturity to deal with any arising problem. They are assertive in their thinking style by teaching the students to accept challenges, enrich their life, maintain their self-confidence and remain flexible.

In the conditions of crisis in the society the very teachers themselves will examine some of the alternatives and innovations that are being proposed as ways of improving education. It is the very case when expectations alone can produce positive changes in "learning ability" of the society, the children and adults ones on a way to Leadership in a future.

In new conditions teachers put a strong emphasis on Team work. Team work is a core-idea of organizing A Learning Center. on a base International Teacher's Association.(Denmark). The results of the work having been analyzed in some schools and Universities are promising.

Training Methods of Good Teaching being applied have been performed as workshops. They were: 1. Lesson-workshop rotation. 2. Apprenticeships, assistantships and Inter-ships as

intellectual following managing of teaching.

3.Role-playing evaluating. 4.Audiovisual method in class.5.Lectures.

The Key-idea of the Learning Center is Managing effective leadership in Teaching.

Accordingly, there are some necessary personal traits the Learning-Center workshops make possible to shape in successful teachers for achieving desired results in helping people to come away any crisis more or less painfully. The traits are like these:

1.Enthusiasm .2.Conscientiousness.3. Emotional.;4. Social boldness.5.Intuitiveness .6.Charisma. 7.Practicality and High Energy.. Self-confidence and resilience – are common traits. We name it self-assurance.

In a wide sense educating means is a historical mission, in the point of which is arising people of different nations to the realization of a notion” unite. ”To unite” means to tie or unite their efforts in restoring their national self- confidence within, and it’s power and prestige abroad.

A unique individuality is reliable and useful as a lifeguard in a need and in a victory. Tolerant approach to education as method and action, should provide teachers and students with the intellectual tools and social skills of communication in the society in order to cope with the complex human, spiritual – moral and technical problems in present and future. It is right to represent concrete goals as finding a solution, not winning a war. It is wrong to belittle, attack or destructively criticize. It is right to have teacher’s whole international community practically good communication skills from the most trivial conflicts like –who is the most important? It is right to respect all peoples feelings, even if disapprove their actions sometimes.

At the process of penetrating through the whole idea of tolerant education, firstly theoretically, we developed a series of interviews with teachers and students from Sweden, Denmark, Japan, Poland, Russia, the Baltic countries and different regions of the world, promoting of Tolerant Educational Thought and Research. It was extremely important for educators of all nations to popularize tolerant education as essential basis in sustainable development of a democratic an peaceful mentality and culture, as a foundation of an intellectual and moral success in our teacher’s business. Linking the knowledge generated in a systematically firm and scientifically promoted tolerant teaching and upbringing, we form independent thought in the minds of the general public. A series of interviews would be launched as ”Tolerant Education Today: Conversation with Contemporary Thinkers”, and provided by qualified teachers, specially trained for that purpose, effectively linked to academic or vocational training in all fields. The results of different levels of complicity interviews showed that it would necessary to convert into data the information directly given by teachers, interested

. A true, real tolerance, as patience, let us freely express our ideas and not to fight against the very sphere of a human being thought. It demands a nobility and honesty from every person, responsibility and reliability, as a rightness of a life. A tolerance is a very high and significant word to be used in vain. A real and honest human –being’s life has only one way – to a tolerance as a knowledge, ready to learn to Leadership as a life position, stimulus, motive, achievement ,evidence, experience.

The whole understanding of this truth inspires teachers and students with a determined love for work not only in getting useful knowledge from teaching ,but joint-combined learning, training, coaching, schooling and doing the best in every kind of practice. We named this practice as Diplomacy of living and teaching-learning in Peace with yourself and the others. That is why the important step in our scientific method realization was a collection of experimental facts or data. So, we consider the process of a new personality formation not as something “imposed by external force, including the so called “pure education”. We consider it to be an independent

inner perfection of an individual, as insight, when the whole education promote the personal's development without discouraging it occasionally. Declaring some necessary items of a new education we take a definition of "A Winner" - A Leader .

The winner sees an answer for every problem. So, the peace-education declares to be a winner, a friendly, cooperative person, getting along with colleagues, class-mates, neighbors, relatives, yourself. Some practical measures to increase the vitality in realization of true Peace-Tolerant education appeared to be effective and wise.

- 1.The Peace-Tolerant Education curriculum should contain a common core of learning pedagogical Psychology as a Philosophy of such education itself;
- 2.Focusing on a broad range of tasks requiring peace approach to family-school-university-community-society-country-surviving problems we propose tests and ideas-actions as indicators of Tolerant peace education.
- 3.Comparing analysis different tests, ideas and outcomes among different groups of population, children, young and adult let make possible and effective using tests as indicators of tolerant Peace-education.

Acting in such a way we mean realization of some expected results as transformation the present "culture of violence" in common understanding and recognition their own role in the happiness of the so called "close" and "far" people. The core of the solution we see in recognition, learning, realization and appreciation of life-values common for everybody in different cultures. The whole way is rather difficult, but it may have been overcome. In the face of chosen psychological method reaching tolerant education procedure we denote practical performance as "Inspired Teachers and Students".. Good teaching creates culture of communication in order to raise a New Personality – its norms, values, when systems of good teacher's qualification and wisely organized learning can transform culture itself.

International Teacher's Association has worked out principles of a tolerant education and a system of pedagogy methods leading to an upbringing and teaching a leader of a sustainable development world. The stability of international teacher's unity comes from the spirit of equality and oneness the noble values embodied in core universal unity.

Scientific psychological method of tolerant (peace) education, formulating right attitude and a new definition of a Happiness as a useful activity for the sake of common progressive development, does not depend on outward conditions. It depends on inner conditions that mean to think rightly. From the point of view of tolerant education to learn to think rightly means to create positiveness as insight inside and good actions for people outside.

We adapted Memorandum of a Tolerant -lover teacher, a Peace-lover psychologist. The document consists of three parts:

- 1 .A psychological portrait of a new time teacher
2. The Program of Action
3. Problem-solving skills and dealing with responsibility (charge) curriculum.

They look like common findings:

Tolerant-lover teachers are keenly observant, intelligent and have a great desire for learning and self improvement. They think in broad terms and are concerned with the world beyond their own personal sphere- town, nation, country, world. They are likely to become involved in community affairs, social organizations, they enjoy being part of a group endeavor and find themselves organizing, managing and supervising group activities. They are forward-looking and progressive, staying current and up to date. Having experimental mind they respond to contemporary social, political and cultural trends. Their strong points include concern for human welfare and social betterment. They establish themselves with wisdom.

Defining the trends, directions and approaches to a tolerant-peace education as methods of its realization, we proposed our teachers and students that they should choose for their own practice the most important definitions of a personal growth from a position of their own personality. We realized it in a course of a series-system of role plays, oriented to several goals to be achieved. We have done this work in different countries, so, the results gotten were very interesting. The task was to choose and to explain different items of personal-living values in order of their significance for a person. The final goal was to describe a tolerant leader as a personality of a new progressive society –civilization. So, the line of qualities to discussed looked like that below: sense of power, feeling important, feeling lovable, feeling self-confidence, feeling natured, feeling valued/respected, knowing and living by ones' values, feeling unique, feeling successful, feeling accepted, being assertive, maintaining one's integrity, managing stress effectively, daring to risk, being self-disciplined, having self-defined goals, managing conflict effectively, accepting responsibilities and challenges, feeling capable of influencing others, feeling in control of one's life, having positive body image, being able to accept praise and criticism, having broad range of emotions, being able to act independently and interdependently, feeling proud, being able to give and receive, feeling useful, feeling connected, feeling competent to make decisions, dealing effectively with peers and authority, feeling safe, knowing it's okay to make mistakes, feeling trusted/trustworthy, feeling competent to make decisions, dealing effectively with peers and authority, feeling safe, knowing it's okay to make mistakes.. All items consisted of a Tolerant Leader Image, but in different consequence due to each personal choice. Some problem-solving skills and dealing with charge we consider being the most important were:

- I can identify problems and propose possible solutions.
- I can find and use a range of information from different sources.
- I can distinguish between facts and opinions.
- I can evaluate different solutions to a problem and select the best one.
- I can be positive when faced with a new situation that is difficult.
- I can show I have a strength to adapt to a major charge.

In coming to a conclusion about our hypothesis, we are swayed only by experimental evidence. For some of these reasons, the source of quality of Tolerant education through International Intercultural Communication realization may be due to complicating factors as: good teaching, comfortable psychological atmosphere of teaching and learning, high level of living values knowing, including information about habits, even predictions in cultures of all potential participants. Hence when the critical temperature of misunderstanding and fears in some cases is approaching from below, the system of communication finds the exchange energy as intellect, moral living values and common sense as protection, security and cooperation in dependence of mutual understanding of personalities-leaders all over the world. We mean we governed principally by what the majority of people (schoolchildren, university students, teachers, parents) think about it. We constantly checked our hypothesis by experiment we called Actions and were guided solely by the results thus obtained. The actions proved to be interesting and useful when we had realized the close connection between tolerant (peace) education and Ecology of an Individual Soul, that gives a Personality an opportunity of observing the only and the very way to Happiness to be useful and demand – for everybody. It is the way to peace, by peace, for the sake of peace, having choice and flexibility, clearing away the mystery, act successfully through a fortunate case of survival, being inspired by the common task.” We owe the Peace on the Planet of a sustainable development people to our own efforts.”

Our preliminary work was constructed as a road to Personal Improvement, included progressive variants of concrete solutions on some behavior's aspects, necessary to be taken into account by teachers –leaders. We discussed effective measures of prevention-denial of drug problem; work, marital, financial ones; anger, physically abusive, poor appearance, loaded with secrets, depressed, high absenteeism from school or work, guilt, embarrassment, hides the alcohol,

argues with family member 's situations. We are sure all these problems being ignored form a base for any conflict starting in a family and completing in a world community.

The International Teachers Association represented and approbated international pedagogical methods, and having compared all of them had chosen the very right and universal – a tolerant education, as a complex of principles and methods useful in the study of time-dependant cooperative phenomena of development.

A tolerant education serves humanity, and teachers are the very persons have the power to face.. In a team-work it becomes a unique task of communication, responsible for the successful result of the tolerant teaching-learning as a whole process. By modeling virtues, exercising powers, and letting innermost values guide us, those involved and interested become the embodiment of these virtues, powers and values.

In tolerant teaching teacher's values clarify what they stand for. It gives them commitment to follow those highest values as responsibility, confidence, sense of useful, stability and high professional qualification. That is why the teachers are capable to propose the students the tasks should be solved out in the process of common-team work. The tasks are:

1. To identify the core values which underlie the global vision statement concerning a Personality , A Leadership, A Communication under circumstances of an international team-work;
2. To identify the barriers which prevent us from adopting and living those core values and following the best models of behavior and intention.
3. To develop strategic action plans (organizational, community or personal) in order to overcome those barriers and thus make the Global Vision Statement of a new personality a reality.

A Tolerant teaching itself has a fast-growing research culture, bringing together a unique combination of a knowledge about teaching and an artistic combination of professional skills, subjects and educators, quality parenting findings and a wise theoretical new approaches of international researchers to unite everything in a strict system of a new understanding world global vision. Exciting alliance of teachers from different countries on a base of International Teacher's Association established a Learning centre for teacher training and continuing professional development. Thus, step by step the very Philosophy of a tolerant education as a nonseparate unite of teaching-learning has been forming, contributing greatly to strengthening of a vibrant and friendly research community.

In a process of a constant working out the most effective methods of a tolerant(peace) education we must take into account the very humanitarian technologies in a poliethnic and multicultural sphere.

To know the quality of inner moral and intellectual energy in our students was very important. In order to use this energy the knowledge of the main items of tolerant education, strictly combined with antinationalism and fundamentalism seemed to be very useful for making up a principally new look at the problem and creating a strategy of students's actions. We organized some workshops, sittings, conferences, role-plays, maximally close to a reality of a modern life from the point of view of professional managing and prevention conflicts in ordinary socium's existence. One of the most crutial problems to be solved by intercultural cooperation as teaching-learning was connectedness.

Communicative functions have been making up in the process of communication in an auditorium and outside. A document, called as "Ground Rules and Ground Norms" has been worked up in order to help students in making-up right decisions and prove rightness professionally. They were:

1. Be nonviolent- no “killer phrases”.
2. Leave “baggage” outside.
3. Build on each other’s idea.
4. No idea is a bad idea.
5. Be honest and open.
6. Listen and understand.
7. Participate actively.
8. Start and end on time.
9. Respect confidentiality (build trust).
10. Build team work.

The structure of a such system compound from rules and norms was effectively serving itself as a guide on the path of communicative value of so complicated, even hard material for over thinking. To guarantee pragmatic and cultural knowledge through real communication four levels fore levels of theoretical and practical activities had been proposed to follow:

1. Surviving. 2. Adjusting. 3. Participating. 4. Integrating. Within each level we have organized the functions into general types as school and then college, university of effective living. They were: A. Basic needs. B. Socializing. C. Metalinguistic .D. Professional. E. Cultural.

That means, the emphasis for all teachers in their principal-centered to a tolerant education position is an urgent necessity to negotiate and communicate not only their students and colleagues in their own countries, but with educators and students, youngsters and adult – abroad. So, a document – Demands for a new generation teacher as an ideal educator had been worked out and approbated in different countries So, in our teaching and learning practice we are trying to build and keep alive Emotional Health and Professional effectiveness as A Key and Instrument in forming a tolerant education as a whole.

- On a base of a scientific-methodical centre of an International Teacher’s Association a prolonged system of a practical daily work for teachers and students in a line of a tolerant education has been worked out and is checking up systematically concerning analyzing of results gotten in different countries. There are some recommendations , being important in the course of a work teacher’s team from different countries:
- Read a lot about different trying to find out a motive and reason for a tolerant learning-teaching in mental, social and political sphere of material having been read at classes and outside.
- Choose your own tolerant, loving and giving attitude and attention to people and share it with them.
- Be able to define the subject and object of Peace in approaches to a tolerant education as final expectations and results of activity.
- Know the names and biographies of well-known Peace-loved educators, writers, psychologists, scientists, actors, sportsmen, doctors, etc.
- Be able to list some most effective ways to eliminate conflict and wars from life of Humans, and, particularly, terrorism as a kind of war with a help of rightly chosen tolerant education for a world.
- Taking into account, that we, teachers of the world have a goal to shape a new personality, a leader, when a tolerant education is a base and a module of a competence a Human being Personality in a sustainable development world, on a base of International Teacher’s Association Learning centre has been worked up a prolonged scheme of a tolerant education for mutual benefit and effectiveness teaching in different countries. Being supported by UNESCO, it appeared to be useful as a main direction of development. There are some moments of the whole system seemed to be important:
- Realizing the final aim-goal as upbringing of a highly professionally skilled and highly organized from a position of adopting human living values Tolerant personality of a new world, we represent a Tolerant education itself as the very possible and unique in recognizing under the multinational circumstances of a modern world. Tolerant education

not only stretches from formal education, to training, to raising public awareness. It is also considers how entrenched learning through socialization may need to be challenged (and/or preserved).

- A tolerant teaching for a new world, developed on a base of ITA, is tied to the development of the tolerant education-upbringing itself and perspectives, but also influences it through interpretation and clarification of that agenda. International unity of teachers, being supported by UNESCO in research approaches and practical activity, approbated the main principals of this organization as alive and effective:
- 1.Future thinking: actively involves stakeholders /our teachers and students/ in creating and enacting an alternative future without wars and multinational conflicts;
- 2.Critical thinking: helps individuals assess the appropriateness and assumptions of current decisions and actions;
- 3.Systems thinking: understanding and promoting holistic change;
- 4.Participation: engaging all in sustainability issues and actions.
- So, in united activity the teachers of the world develop capacity with regard to leadership as a product of a tolerant education. Through ITA's activity became possible to build mechanisms to promote leadership development in national systems of education in the world. International Teacher's Association role both for and as sustainable development of a new personality should be emphasizes strongly by improving the culture of a traditional educational system within a tolerant education and upbringing.
- An idea about international tolerant education must raise a profile of education as a whole internationally. It must gain resources of all kind from governments to make basic education of a new level an entitlement for all .Education is a motive, a source, a moving power and an engine in the process of a personal development, guaranteeing decency, prudence and Following to this common direction of teaching and upbringing we automatically enrich the notion "What counts as a tolerant education"? It is concerned with organized/formal/ international education programmes and in providing opportunities for the widest number of people possible to participate in a world of sustainable development. Realizing the final aim-goal as upbringing of a highly professionally skilled and highly organized from a position of adopting human living values Tolerant personality of a new world, we represent a Tolerant education itself as the very possible and unique in recognizing under the multinational circumstances of a modern world. Tolerant education not only stretches from formal education, to training, to raising public awareness. It is also considers how entrenched learning through socialization may need to be challenged (and/or preserved).
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- An idea about international tolerant education must raise a profile of education as a whole internationally. It must gain resources of all kind from governments to make basic education of a new level an entitlement for all .Education is a motive, a source, a moving power and an engine in the process of a personal development, guaranteeing decency, prudence and wisdom. As UNESCO document declares, "It is education of a certain kind that will save us, as leaders, the issues now looming so large before us in the twenty first century"[1.R.Wade,J.Parker, 2008, p.5].We believe in our common sense professionally. So, constructing a tolerant education we stay as practical, as generous in our ideas, keeping eyes on the stars and our feet on the ground due to Dante's old phrase , presenting life witty solutions as professional reliability.

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*Measuring the Readiness to Adopt a Japanese Laboratory-Based Education Model:  
The Case of Indonesia*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

The Laboratory-Based Education (LBE) model is implemented by the majority of universities in Japan and has been proved to generate research, patents, and publications both nationally and internationally. Another indicator of success in the Japanese LBE is the set of independent research skills demonstrated by the students.

This study aims to design an implementation roadmap of the LBE model for universities under the jurisdiction of the Ministry of Religious Affairs (MORA). However, this paper only focuses on the measurement of the readiness and enthusiasm of people for LBE adoption. This is based on the Rogers' Diffusion of Innovations Theory which highlights that the environment contributes significantly to the successful adoption of innovation.

The questionnaire-based data collection is used to identify the readiness factors for LBE adoption. Several pertinent factors are important for the success of LBE implementation as a new approach, such as management commitment, resource provision, employee commitment and training. Based on the responses from people in management who are considered to be representative of object institution, the greatest mean was in the commitment of management to supporting the adoption of LBE (mean = 6.067), followed closely by employee commitment (mean = 5.861). Besides gaining information from the management level, the questionnaire was also distributed to the non-management level of the integrated laboratory in which the LBE will first be implemented. The mean of non-management readiness in terms of support for the management level in respect of LBE was high (mean = 5.828), while enthusiasm for the success of LBE was also high (mean = 5.175).

**Keywords:** Laboratory-Based Education, Indonesia, innovation, higher education

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## Introduction

Innovation is often understood in the context of the discovery of new products that are considered as 'firsts' in the market. In fact, innovation is not only limited to new products but also encompasses new concepts or approaches that aim to achieve organisational goals (Rogers 2003). Innovation plays a very important role in the education sector worldwide, including Indonesia. Innovation in the higher education context can be in the form of a teaching program, teaching style, or other aspect of education, and is highly necessary to compete with other universities.

Improvements in the education sector, particularly in Indonesian higher education, must include everyone who attempts to compete at the local, regional or even international level. This is an important fact to be considered by universities under the Indonesian Ministry of Religious Affairs (MORA). The latest data released by MORA shows that the Ministry controls fifty two public institutions (MORA 2012a), yet in spite of this relatively high number of higher education institutions under their jurisdiction, only five MORA universities are included in the list of Indonesian top 100 universities (MORA 2012b).

Concerning the fierce competition in the education sector, higher institutions under MORA, particularly those that offer study in science and technology fields, need to improve their academic performance by, for example, increasing community-based research, number of publications, patents and so on. In addition, teaching style and teaching programs, among other things should be continuously improved. This kind of improvement will indirectly increase the quality of university graduates and make them more attractive to stakeholders. The question that arises from this issue, then, is how to solve the problem.

Returning to the discussion on innovation in higher education, we propose that the education model should be changed to achieve a higher level of publications and patents. As observed by the first author of this paper, some higher institutions under MORA, and indeed the majority of higher education institutions in Indonesia, are still implementing classroom teaching which is mainly based on the use of textbooks. A similar situation occurred in New Zealand universities, as highlighted by Mintrom (2008) in his study on pressures and dilemmas in managing the research function of a university. Mintrom (2008) also pointed out that the general advancement of knowledge comes from research-based activities, which is a very different approach to the practice of classroom teaching, tutorials, and laboratory sessions. In Japan, academics are accustomed to combining textbook study and research output in their teaching as a consequence of the high number of research activities undertaken. Moreover, the involvement of students undertaking research projects with academics is also high in Japan. Final year students (Bachelor Year 4) join their desired laboratory in seventh semester, and some programs request that students join the laboratory earlier, in their sixth semester. This situation has positive implications for research, for both academics and students. For example, students can focus more on their research project, hold regular meetings with their supervisor, and so on. For academics, there is a higher possibility of generating publications and patents from the research projects they supervise. This situation does not exist in the majority of Indonesian higher institutions, including MORA universities. It has implications that relate to the low number of students who can graduate on time; for instance, the average number of students who graduated on time (4 years) in one department of a MORA university in 2011 and 2012 was only 15.98%. Moreover,

this will impact on the accreditation of the department. A national accreditation evaluation, designed by the Indonesian Ministry of Higher Education, regularly evaluates the performance of higher institution in Indonesia, and this accreditation level is important because it impacts on the level of research and academic subsidies received from the government.

The first and most urgent element in the adoption of the Laboratory-Based Education (LBE) model is to provide a supportive environment in which students and academics can work intensively on their projects. In this way, academics can involve students in their research as part of the students' final projects.

Several universities in Indonesia, such as the Institut Teknologi Sepuluh Nopember (ITS) and the Universitas Hasanuddin, have started to follow the way of Japanese universities by implementing the LBE. The adoption of LBE by these Indonesian universities is because of the significant benefit of this concept experienced by Japanese universities, e.g. greater linkage to industry, increased publications and a higher number of patent applications granted year to year. According to a statistical report issued by the World Intellectual Property Organization (2012), Japan has the highest average number of patents granted up to 2008 compared to the United States of America and other leading countries such as China, Korea, the United Kingdom and Canada. In those countries, universities have the potential to be contributors to a portion of those granted patents.

The on-going implementation of LBE by some leading universities in Indonesia, as well as the significant contributions of LBE in Japanese universities, are worthy of consideration by MORA universities. The implanting of this Japanese education style can serve as a role model to increase the academic performance of MORA universities. However, adopting a Japanese-style education in MORA universities, particularly those which offer science and technology programs, is not a simple task. Firstly, the measurement of readiness to adopt this model/innovation should be assessed. The readiness of laboratory personnel to adopt the change in education style in MORA universities is extremely important, since the integrated science and technology laboratory will be the starting point for implementing Japanese-style LBE. This must be followed by the observation of existing MORA universities, and in particular, the integrated science and technology laboratories. Observation to gain a deep understanding of Japanese universities and their laboratories and systems must also be carried out. The output of this research will be a roadmap for the implementation of Japanese-style LBE into MORA universities, and part of the roadmap will propose a re-designed laboratory within the object institution to support the adoption of the model. However, this paper will only focus on reporting the measurement of readiness to adopt LBE within the object institution.

### **Laboratory-Based Education Model**

The Laboratory-Based Education (LBE) model has been implemented by the majority of universities in Japan and has been proved to generate research, patents and publications both nationally and internationally. In addition, an indicator of success in LBE implementation in Japan can be seen from the independent research skills gained by final year students. As

previously stated, final year students (Bachelor Year 4) have to join their desired laboratory, where they normally work under their *Sensei* (research supervisor) on their research projects.

According to Soemantri (2011), the LBE concept has several objectives, as follows:

- To improve the quality and relevance of science and engineering education
- To increase the involvement of faculty members in research
- To increase student involvement in the laboratory
- To increase interaction between faculty members and students

The most visible outcome of this model in the academic environment of Japanese universities is shown by the proximity of the *Sensei*'s office to the students they supervise. The students (final year of Bachelor degree, Masters and PhD) have a work desk from which they normally work on the research project. Figures 1 and 2 show the laboratory in a Japanese university which provides an appropriate environment for students to work in on their research projects. 'Appropriate environment' refers to a sole-user desk, internet access, online journal access, and student email account provided by the university as a means of receiving academic information.



**Figure 1** Student research laboratory in a Japanese university



**Figure 2** Experimental laboratory which also serves as a location for students to work on their research

Typical differences between laboratories in Japan and Indonesia are presented in Table 1.

**Table 1** General characteristics of laboratories in Japan and Indonesia

Aspect	Japan*	Indonesia**
Definition	A place designed for students to work on their research project, attached to either the experimental laboratory or an independent space	A place for laboratory sessions/experiments as part of teaching
Laboratory structure	Linear	Top-Down
Facility related to students	A work desk set, equipped with features such as internet access and a university email account to receive academic-related information, plus 24-hour access to the laboratory	None
Funding	Research grant mainly from industry or government	Mainly from university (for procurement, operational, small research grant)
Research environment	<ol style="list-style-type: none"> <li>1. Regular meetings, e.g. weekly, with research supervisor</li> <li>2. Close relationship between laboratory members (helping one another) → culture in the laboratory</li> <li>3. Establishment of university-industry linkage (ease of obtaining particular data and using industrial equipment)</li> </ol>	<ol style="list-style-type: none"> <li>1. Irregular meetings with supervisor</li> <li>2. Students mostly working independently</li> <li>3. Lack of university-industry linkage</li> </ol>

\* Observation in a Japanese university (generally typical of all Japanese universities)

\*\*Observation in a university under MORA in Indonesia (generally typical of other Indonesian universities)

Several of the points from Table 1 are highlighted below.

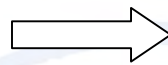
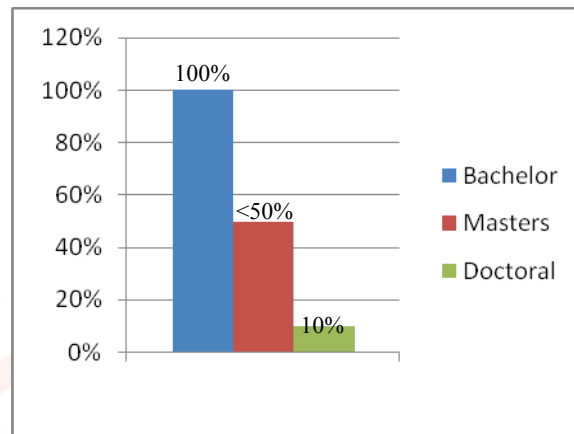
The laboratory structure found in the object institution has a top-down structure in which the laboratory normally has an organisational-style structure, i.e. top management, middle management and administrative staff. In Japan, most laboratories are independent and have a very lean structure, i.e. Professor, Associate Professor, Assistant Professor and students (final year of Bachelor, Masters and PhD).

The establishment of university-industry linkages in Japan has been a feature of the mutual university-industry relationship for several years; for example, Hane (1999) highlighted that the *Gakujutsu Shinkokai* or Japan Society for the Promotion of Science (JSPS) held licenses for university patents with 58 local Japanese companies, the majority of which were small or medium enterprises. This practice continues to address the needs of industry through research in Japanese universities to this day.

Of the LBE concept, it can be said that the LBE does not merely increase the ability of students to conduct research independently; it also enriches the course material of academics as a result of the research undertaken. Ragunath (2007) emphasized that education is not limited to classroom teaching alone, but includes shared research experiences and knowledge transfer.

In our opinion, the LBE model is not only a model that involves students in their supervisor's projects; it is also a grouping within the research area that clearly shows what research groups the faculty supports. This kind of research specification easily provides a way in which a group can expand its research area.

Figures 3 and 4 describe the differences between universities in Japan and Indonesia in terms of laboratory attachment in the way that research is grouped. Figure 3 illustrates the composition of final year students (Bachelor), Masters and PhD students in Japan when they join a particular laboratory.

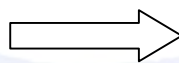
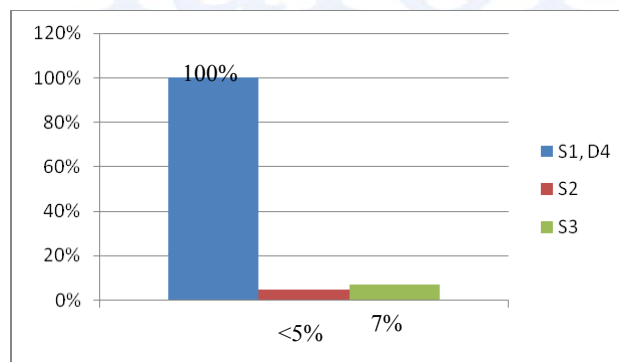


Member of lab = research group

**Figure 3** University in Japan

Source: adapted from Usagawa (2011)

Figure 4, by contrast, shows the situation of public universities in Indonesia where the student is not encouraged to join a laboratory that supports their research. Here, research groups are normally non-existent and lead to students having to work independently.



Research group ??

**Figure 4** University in Indonesia

Source: adapted from Usagawa (2011)

Another concern of the LBE is in the layout of the laboratory (refer to Figures 1 and 2) which, in most laboratories in Japan, serves as a teaching and research area for students. This is different from Indonesian universities, particularly a MORA university. The laboratory mainly serves only for laboratory sessions and is closed after office hours. This means that there are no activities for students, especially for Year 4 Bachelor students in the laboratory outside office hours. Concerning the space for students, Figures 5 and 6 show the Computer Integrated Manufacturing (CIM) Laboratory of the object institution in which there is unused space. This space is quite large and could easily function as a laboratory desk space for final year students to work on their research. In essence, the necessary space could be found by providing independent rooms or by employing the unused spaces inside the laboratory to provide research desks for students.



**Figure 5** CIM Laboratory



**Figure 6** Unused space in CIM Laboratory

Laboratory-Based Education (LBE) is considered by personnel in the object institution to be a new approach, and it is therefore important to understand people's readiness and enthusiasm for innovations such as LBE. Their perspective about a new approach is very important because it can act as a guide to the possible success level of the innovation if it is adopted. The measurement of people's readiness and enthusiasm to a new approach is reported in this paper.

The elements of Diffusion on Innovations Theory (Rogers 2003) that contribute to this research and are considered in the design of this questionnaire to gain useful information from respondents are as follows:

1. Compatibility
2. Communication channels
3. Leader characteristics
4. Organisational slack
5. Change agents

*Compatibility* -- It is necessary to assess the compatibility of LBE with the values and culture that exist within in the object institution.

*Communication channels* -- These influence the rate of innovation adoption, particularly the speed of adoption (Rogers 2003).

*Leader characteristics* -- It is important to measure the management characteristics relevant to innovation adoption; for instance, the willingness of management to be actively involved in the implementation of innovations.

*Organisational slack* -- According to several studies, organisational slack has a positive relationship with organisational innovativeness (Rogers 2003). This means that organisations with available resources are more ready to adopt innovations.

*Change agents* -- Rogers (2003) explains the importance of change agents to the successful diffusion of an innovation such as LBE. Besides the management level of the integrated science and technology laboratory of the object institution, there are entities that belief has influence in the decision to adopt innovation.

## **Methods and Analysis**

This research will consider the readiness and enthusiasm for change of people in the sample laboratory. It is important to know that the starting point for changing the environment in support of LBE will be in the integrated science and technology laboratory of the object institution.

To gain appropriate data from respondents, several administrative issues needed to be taken into account when designing the questionnaire, such as the length of the questionnaire and how easy it would be to read and understand (Cooper and Schindler 2003). Addressing these issues is important because respondents are usually very concerned about the use of their time when they complete a questionnaire.

The questionnaire was designed in two parts, Part A and Part B. Part A covers respondent details, such as their position in the laboratory, number of working years and so on. There are four sets of questions in Part B of the questionnaire that explore the level of readiness of management level in relation to resources, management support/attitudes toward innovation, employee commitment and training provision. Another twelve-item questionnaire was designed to measure the readiness of Pranata Laboratorium Pendidikan (PLP) non-management laboratory assistant staff to adopt LBE and to support management in that adoption. A further three questions for PLP to assess their enthusiasm for the adoption of LBE were also included in the questionnaire. Although the questions given to management personnel and PLP were different, both sets measured the readiness aspect of innovation adoption. All questionnaire items were adapted from previous study conducted by Amar and Davis (2010).

For the purpose of this research, the responses from management and non-management (PLP) levels are considered to be representative of the views of the integrated laboratory. As stated earlier in this paper, the perspectives of people from the integrated science and technology laboratory of the object institution are important for assessing the success of the future implementation of the innovation.

## ***Demographics of Respondents***

Of the 28 respondents, 9 of 10 management people participated in the research (90%), while 100% of responses (19 out of 19) came from PLP. The majority (66.7%) of the management level has < 1 year working experience in the laboratory of the object institution. Approximately 47.4% of the non-management level have 1-3 years of working experience in the laboratory of

the object institution.

### ***Readiness for LBE***

Twenty-eight responses were gained through the questionnaire survey conducted in June-July 2012. Because of the statistically low number of respondents, the data analysis will only use the descriptive analysis and non-parametric test to show the mean of readiness and the mean differences of the two groups of respondents.

For management personnel, the mean of the readiness to adopt innovation in terms of resource provision, management support, employee support and training was good. Almost all responses have mean  $> 4$  which indicates that management people have a readiness to adopt innovations such as LBE. The two greatest means were in the commitment of management to support the adoption of LBE (mean = 6.067) followed by employee commitment (mean = 5.861).

Non-management (PLP) people showed their readiness to support management if LBE was adopted (mean = 5.829).

Using the Mann-Whitney Test, there were no differences in the median grades of resources, management support, employee commitment and training on the working group (p-value 0.193, 0.147, 0.601 and 0.294 respectively; all are  $> 0.05$ ). There was also no difference in the median grades of readiness at non-management level based on the number of working years; for example, 1-3 years and  $>3$  years (p-value 0.214 and  $> 0.05$  respectively).

### ***Enthusiasm for LBE***

With regards to enthusiasm, the non-management (PLP) level demonstrated their enthusiasm for the success of the new approach. The mean average for enthusiasm was 5.176. As mentioned several times in the paper; the importance of measuring the level of enthusiasm is significant because the starting point for LBE implementation will be in the integrated laboratory of the object institution. For the PLP group, there were no differences in the median grades based on their length of working years; using the Mann-Whitney test, the p-value was 0.644 ( $p > 0.05$ ) for people working for 1-3 years and  $>3$  years alike.

## **Discussion and Conclusion**

This paper has presented several observations concerning the Laboratory-Based Education (LBE) model as well as the key results of a questionnaire survey to help evaluate the readiness and enthusiasm for a new innovation such as LBE. The information gained from the survey will be used as the foundation to develop a roadmap for the implementation of LBE in MORA universities, and in particular for the object institution that was the subject of this study.

The research involved people from the integrated laboratory of science and technology of the object institution. As stated in the previous section, the starting point for the implementation of LBE will be in the integrated laboratory of the object institution. Because LBE is perceived as being 'new' by people at this institution, it is important to measure their readiness and

enthusiasm for LBE. The commitment of leaders or management level staff, and the support of laboratory personnel, are among important aspects that must be clarified before the full adoption of the innovation.

Twenty-eight responses were received from the management and non-management levels in the integrated laboratory of a object institution. The small number of respondents was because there were only 30 people in these management and non-management positions; however, the majority of responses gained were 'positive', which is greater than 4 on the 1 to 7 agreement scale. These 'positive' responses are the first picture of the 'openness' to innovation from the object institution, which is a very important concern in the adoption and implementation stages of an innovation. In general, the positive perception of innovation will assist in the success of implementation.

It is interesting to note the differences in median grades using the Mann-Whitney test, because it is found that there are no differences in readiness in terms of management commitment and support, resource provision, employee support and training among personnel at management level in the object institution who have different lengths of working experience. At the non-management level, it is also shown that there are no differences in median grades between respondents with different working year experiences.

The results presented in this paper are useful for designing the LBE implementation roadmap for the object institution, or to other MORA universities that offer science and technology fields. For example, the commitment of management to supporting the adoption of LBE is the most influential factor in innovation adoption. By considering this factor, therefore, the implementation roadmap should provide training for the management level to assist in understanding the innovation, while at the same time encouraging support for the innovation. Innovation, whether it is in the form of hard technology or soft technology, needs support from management to achieve success.

The other interesting result came from the non-management level of the object institution which shows that there is a 'positive' view of the innovation in the agreement to support management in the implementation of LBE. Willingness to work as a team and to learn new things related to LBE, for example, will be important factors for the success of LBE implementation. In the implementation roadmap, this group of people should also have appropriate training to improve their knowledge and understanding of the innovation.

The results presented in this paper are expected to provide useful information for designing the implementation of the LBE model. There is, of course, limitation in collecting data by means of a questionnaire survey. The number of respondents involved is low because the research focus is only on representatives of the integrated laboratory of the object institution as the proposed place to implement LBE. Based on the low number of responses and adhering to statistical rules, e.g. normality of data, some of the descriptive statistics and non-parametric test results are presumably sufficient to judge the readiness and enthusiasm of people for the LBE innovation.

Further work will continue to develop the implementation roadmap for the LBE model. The quantitative data will be accompanied by interviews with people, particularly the decision

makers of the object institution, to explore certain necessary aspects in more detail. Re-designed layouts of the research institution's laboratories will also be proposed. The proposed re-layout designs are expected to support the success of LBE implementation in MORA universities. In short, this research supports the implementation of the LBE to improve relative academic performance, but it is not limited to the science and technology fields, and it is possible for other fields, such as social science, law, Islamic studies and others, to adopt this innovation.

## Acknowledgments

This work was supported by The Indonesian Ministry of Religious Affairs (DIPA Grant 0084/025-04.1.01/00/2012). The authors would also thank Mr. Budi Saksono for assisting with data collection in Japan.

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*Changes in the Role of Elementary School Teachers in Taiwan over the Past 60 Years*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

The role of teachers frequently changes according to changes in society. This study uses historical and documentary analysis to analyze the image of teachers, which governments aimed to shape in the context current to the time, from the perspectives of social change, the teacher cultivation system, relevant legislature, and teacher compensation. Using historical and documentary analysis, this study investigates changes in the role of elementary school teachers in Taiwan over the past 60 years. Finally, we provide a conclusion and recommendations for future studies.

Keywords: Social change, role of elementary school teachers, teacher cultivation, teacher compensation

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## **I. Introduction**

Although every country has its own method for educating teachers, they all hope that teacher education develops professional educators who benefit the development of education. When analyzing teacher education, Chi (2002) noted that the ruling authorities in Taiwan faced numerous domestic challenges at the beginning of the 1970s. At that time, the Normal Education Act implementing monopoly power of the teacher education system was announced. This was primarily related to the preservation of ideology and national hegemony. The government hoped that teachers would teach the party state ideology and serve as the primary channel for controlling social thought. Schools were a site of political socialization; teachers became pawns of the party state, accepting specific knowledge and influence in specific fields.

After martial law was lifted in 1987, the social atmosphere became increasingly open. Society criticized the closed, conservative, and backward teacher education system and requests for educational reform increased daily. For the Executive Yuan Educational Reform Committee, teacher education became an important aspect of educational reform. The Teacher Education Act announced in 1994 brought the largest transformation to the teacher education system in history. The education system moved from being unitary and closed to diverse and open, from a publicly funded system to a reserve-style system that relies primarily on individual payment with public stipends. After changes in the political and economic environment, the government implemented strategies to transform the teacher education system and resolve existing problems. Additionally, the role of teachers also changed following reforms to the teacher education system.

Teacher education was influenced by the role of teachers that the government aimed to cultivate. Chen (1998: 146) stated that all teacher training systems served the government. Under this perspective, the Taiwanese government has determined the role of teachers throughout changes to the teacher education system over the past 60 years. This study explores this issue from a historical perspective, analyzing the changes in Taiwan's teacher education system and the compensation and social prestige of teachers to understand the roles the government and society established for elementary school teachers.

## **II. The Changing Role of Teachers Caused by Changes in Related Laws**

### **i. The Role of Teachers in an Authority-Oriented Teacher Education Model**

After the Nationalist government moved to Taiwan, according to “Normal School Law” and “Normal School Regulations,” normal schools were subject to the teaching objectives and policies of the Republic of China. Emphasizing strictness, competent teachers were trained for elementary schools. The training goals were to strengthen the teachers’ constitution, cultivate their personal character, educate them in national culture, enhance their scientific knowledge and ability, and foster the habit of hard work. This led to interest in studies on children’s education and lifelong education services (Taiwan Provincial Government Department of Education, 1987: 2-3). Using the Pingtung Normal School at that time as an example, one of its famous “Three Actions” was an emphasis on labor; thus, teacher education focused on promoting nationalism and habits of hard work.

The “Normal School Student Training Standards” announced by the Ministry of Education in 1958 not only specified academic admission tests, but also greater teaching of the Three Principles of the People, national spirit educational material, and the president’s instructions. During weekly meetings or other gatherings, the Three Principles of the People and Sun Yat-sen’s teachings were presented and, to explain the national policy of resisting Communism and the Russians, the conspiracies and atrocities of the Communists of the Russian empire were reported (Taiwan Provincial Government Department of Education, 1987: 217-28). Public reports from the Executive Yuan indicate that before 1984, normal school students and elementary school teachers were required to assist in the government’s campaigns promoting Mandarin Chinese.

Normal education teachers could not escape government interference. The monolithic teacher education system was a representation of national ideology. The “Normal Education Law” reinforced the importance of teacher education by recommending teachers receive strict physical and mental training and professional education to become competent teachers who promote national spirit. The “Taiwan Provincial Normal College Student Group Education Achievement Investigation Interim Implementation Essentials”

announced in 1980 divided the achievements of normal college students into two categories, class activities and social activities. “Patriotic spirit,” which comprised 20% of class activities, referred to the display of patriotic actions and sentiment, such as cherishing the national flag, respecting leaders, standing to honor the national anthem, advocating the Three Principles of the People, promoting national policies, supporting government decrees, making patriotic donations, denouncing unfavorable views of the nation, and stopping or reporting rebellious behavior (Taiwan Province Department of Education, 1987: 126). The government’s control on individual thought is evident in every regulation. According to the traditional teacher education system described by Fan (2008: 69), the government expected teachers to champion national spirit by enrolling in government-funded conservative normal institutions that would shape them into teachers who felt responsible to enforce national policies. Thus, teachers were national machinery who promoted government ideology.

The results of implementing the teacher education reforms in the “Teacher Education Act” in 1994 were diverse. Fwu (2000) stated that social change significantly influenced the “Teacher Education Act.” By implementing this act, teacher education channels were diversified, the teacher education system was liberalized, the hiring of teachers was delegated to schools, and teacher professionalism was enhanced. Today, the teacher education system has officially transformed from a monolithic system to a diverse new system.

## ii. The Role of Teachers in Market-Oriented Teacher Education Models

After the Ministry of Education established the “Teacher Education Act” in 1994 and the “College Teacher Curriculum and Standards Setting” in 1995, ordinary universities were allowed to develop a curriculum for teacher education. By 2005, 10 years after the teacher education curriculum was liberalized, the “Teacher Education Act” had been revised 10 times. A number of these revisions further modified teaching practices and the approval system. Thus, under the trend of marketization, teacher education wavered between two possibilities, that is, academia guiding the market or the market guiding academia. The role of teachers was also ambiguous, somewhere between professional and nonprofessional. However, because a reserve-style teacher education system was

adopted, the supply of teachers increased significantly. This, combined with a sudden drop in the national birthrate, led to a serious imbalance, where supply outweighed demand. The domestic scholar Wu (2006: 2) called this the “period of lost control” in the development of teacher education. Official teachers, substitute teachers, and “wandering teachers”<sup>1</sup> were regarded as level divisions by student parents. Although official teachers held a high social status and substitute teachers were “dissatisfied, but controllable,” wandering teachers were regarded as “flawed products.” In early Taiwanese society, teachers were considered the voice of knowledge. Under globalization and easy access to media and the Internet for knowledge, the position of teachers has become insignificant. Additionally, the number of teachers has increased significantly, hindering the preservation of the prestige and status formerly held by teachers.

The greatest power behind open and diverse teacher education systems is marketization. Under marketization, the teacher education system in Taiwan was reformed from a planned to a reserve system. The characteristics of teacher supply and demand changed from the high-level mosaic fit relationship of the past to a quasi-labor market relationship, where supply exceeded demand (Chi & Hwang, 2009). The role of the government also changed from control to supervision. Following the diversification of teacher education, numerous qualified teachers travelled extensively seeking employment, with the number of people willing to join the teaching profession significantly outnumbering the available positions. Huang and Sun (2003) indicated that when the government removes the umbrella of teacher education, or when the market is saturated, teachers cannot become even a market vassal and eventually drown in a saturated market; the role and social position of teachers is also marginalized.

The planning of teacher education by related government agencies only emphasized “diversity.” They failed to assess teacher demand or supply and demand in advance. Diverse teacher education policies consider being a teacher to be a type of profession, and emphasize adequate reserve education. However, by blindly following the market,

<sup>1</sup> Because of the oversupply of teachers, numerous unemployed teachers travelled throughout Taiwan seeking employment during schools’ annual teacher selection. This led to media mockingly labeling these teachers “wandering teachers.”

teacher education eventually faced a serious imbalance of supply and demand. The teacher education system was transformed from a monolithic system, where the number of teachers was insufficient, to a diverse system, with an oversupply of teachers. The government employed monolithic teacher education policies to guarantee quality teacher education. However, because the number of teachers was insufficient, secondary and elementary schools continued to employ numerous unqualified or substitute teachers. After the implementation of diverse teacher education policies, individual interest in being a teacher was emphasized; however, whether people had the appropriate abilities was not considered, strict replacement mechanisms were not executed, and the ideals of teacher professionalism and quality were not achieved. Yang, Lin, and Liu (2007) reported that diversified teacher education policies lead to two major problems, an imbalance in the supply and demand of secondary and elementary school teachers and a decline in teacher quality. Although “diverse education” was established as the goal, the significantly more important aspect of teacher quality was ignored.

The “Teachers’ Act” issued by the Ministry of Education in August 1995 became the legal foundation of teacher rights and responsibilities. Despite careful examination of the clauses in the Teachers’ Act, evidence of national ideology cannot be found. This demonstrates how the government’s hegemony of teachers was replaced with teacher and guardian autonomy. Article 26 of the “Teachers’ Act” delineates methods for organizing teacher associations. Article 27 defines the fundamental duties of teacher organizations as follows: maintain teachers’ professional dignity and autonomy; collaborate with authorities on teacher engagement and engagement criteria at every level; research and resolve educational problems; supervise the management, operation, and payment of savings to former teachers; attend teacher appointments and appeals, visit statutory bodies related to teachers; and organize self-discipline conventions. Teacher organizations have become an important force for monitoring school activity. Article 16 states that teachers’ rights include advising on school education reforms and executive items. Teacher education and student guidance is implemented according to a code; schools enjoy professional autonomy over their regulations. Besides greatly increasing their status in school executive affairs, teachers were officially recognized as professionals. On September 28, 2002, numerous teachers marched the streets calling for

three labor rights. On June 1, 2010, the “Amendment of Certain Provisions of the Labor Union Act” was passed on its third reading, and on May 1, 2011, its implementation began. The greatest impact of this act was that teachers were allowed to form unions. Traditionally, teachers were expected to focus only on learning and the paragons of virtue; however, after losing the burden of sagacity and advocating professionalism and autonomy instead, the issue of how to promote ethics to students emerged again.

### **III. Examining Changes in the Role of Teachers Using Preservice Teacher Education Models**

#### **i. The Role of Teachers in an Authority-Oriented Teacher Education Model**

The Nationalist government seized control of Taiwan after the war in 1945, ending 50 years of Japanese rule. At that time, Taiwan already had four normal schools, Taipei First Normal School, Taipei Second Normal School, Tainan Normal School, and Taichung Normal School (Cultural and Educational Bureau of the Taiwan Governor-General Office, 1940: 254). Wang (1999) indicated that in the “National Government Organization Law” issued during the political tutelage period, the chairman of the Nationalist government assumed responsibility of the Standing Committee of the Chinese Nationalist Party, the head of the five branches assumed responsibility for the chairman of the Nationalist government, and the rank and power of the Nationalist Party exceeded that of the Nationalist government. In other words, after the Nationalist government seized control of Taiwan, an era of party rule began.

In 1949, the Nationalist government was defeated in China. After moving to Taiwan, in addition to martial law, every aspect of politics, the military, economy, education, and culture was employed by the government to deter communist thought. In 1951, the government promoted the national policy of “resist Communism and Russia,” beginning with normal schools implementing military discipline and education. For example, when Huang (2003: 47) was serving as principal, the Taichung Normal School used meetings, speeches, student dramas, external theater groups, and the national teacher education sports week to promote opposing Communism and Russia among students. After moving to Taiwan, the government pursued innovations in education to build the country.

“Teachers are number one, teacher education comes first” became the mantra of education (Sun, 1963: 69).

In the 1950s and 1960s, Pingtung Normal School provided “resist Communism and Russia” presentations, “national spirit education,” and campus-wide national spirit tests annually. The school also frequently held campus-wide speeches on topics such as, “the Maoists are not China” and “what is actually happening in the bandit region and the process of pursuing freedom.” The school further established youth party divisions within Pingtung Normal School for resisting Communism and Russia (Huang, 1986:54–58). This indicates that schools actively participated in party activities and cooperated with the government to host speeches, integrating national ideology into the curricula and lives of students.

Regarding educational funding following World War II, according to statistics by the Taiwan Province Department of Education, from 1944 to 1949, annual educational funding was 6.41%, 8.41%, 20.78%, 25.79%, and 24.91% of the total budget, respectively. Until 1954, more than 20% of the national budget was allocated to education (Department of Education, 1955: 305). Data from the Chief Executive Office (1946) indicated that in 1946, the annual education funds per secondary school student, professional school student, and college/university student was NT\$554.68, NT\$719.70, and NT\$6,056.39, respectively. The amount allocated for each normal school student was NT\$5,649.14. From the perspective of educational systems, this indicates that after the Nationalist government moved to Taiwan, teacher education standards declined from their specialist level under Japanese control to a moderate level (Peng, 2011: 87). However, the funds the government allocated for each normal school student approached the amount allocated for specialist university students. That the government invested a higher ratio of educational funds into normal schools indicates the importance the government placed on developing teacher education. Teaching students experienced military-style management; their food, clothes, residence, and behavior were controlled. Upon graduation, teacher education students were distributed among secondary and elementary schools. Shen (2004: 87) described normal schools as their own societies, with significant financial investment from the government, militarized management, and

future employment priority for students. When these teaching students became teachers, their duty was to recreate this society. The militarized controls are evident in the memories of early graduates from these normal schools.

Liu (1998: 354) recalled studying at Tainan Normal School from 1954 to 1958:

**“Staying at the dormitories, living a class-based group life, each day’s work and rest based on the sound of the horn, the signal for waking at six in the morning...and the “morning roll call,” “morning self-study,” “raising and lowering the flag,” “evening self-study,” “evening roll call” every day. Unless something important occurred and we had arranged a vacation in advance, every student was required to attend.”**

This shows that teacher education was controlled, life education was valued, and a patriotic consciousness and national spirit was integrated in life education. Cai (1998: 351), who graduated from Tainan Normal School in 1956, indicated that the greatest difference between teacher education and ordinary secondary education was a thorough implementation of life education:

**“The sound of the horn in the morning woke you suddenly; the bugler played the signal to rise. When the loud horn broke the silence of the dawn, you did not dare continue to sleep. To rise, dress, wash your face, brush your teeth, and organize your things, you were limited to 20 minutes, which is certainly quick. Orderly and clean, we wore khaki military training clothes and, making quick steps toward the drill grounds, assembled under the morning sun...**

**...sitting on long narrow benches with no backs, four people sat in a row according to regulations. The required posture involved sticking out your chest and maintaining a straight waist, with your arms clamped to your sides. From the bowl to the mouth, students must not eat and speak at the same time. Any slight mistake, the military instructor could appear to correct you at any time...”**

This shows that the government implemented military-style control of the food, clothes, residence, and behavior of teaching students. The entire student body wore the same uniform and lived together in dormitories. Students could not enter or leave the school at will. Chen (1998: 349) stated that when studying at a normal school “we were together from dawn to twilight, eating and sleeping together.”

Considering international trends, by the beginning of the 1970s, every country had adopted globalized and international standards of teacher education (Kao, 2002: 91), whereas Taiwan’s teacher education system was monolithic and closed, with a curriculum that trended toward unification. The government consciously or unconsciously ignored certain structural dimensions of the teacher education system; thus, in the 50 years after the war, the government monopolized Taiwan’s teacher education system. The group-style instruction of teacher education was the government’s “ideology factory”; teachers even endorsed government policy and assumed responsibility for “political socialization.”

Although the government used teacher education to impart ideology, the life education in teacher training significantly influenced students. Most graduates of normal schools approve of the life education they received. Huang (1997:129–130) recalled the life education she experienced at Hualien Normal School:

**“Every week, every class was responsible for a “labor service” and required to finish the work within a limited time. At that time, because lawn mowers were extremely rare and personnel was abundant, we became ‘volunteers,’ planting trees, cutting the grass, smoothing soil, and moving rocks. Whether it was winter with freezing wind or summer with the hot sun, a task was a command, and we had to complete it on time... Additionally, students sent representatives to manage food, purchasing, and kitchen supervision, and every week there was a food review meeting. As secondary school students, we grew up considerably ...”**

Lin (1997: 140) describes attending Hualien Teachers College in the following extract:

**“Besides living in a regular routine, every week we also had labor service, such as weeding, landscaping, and digging. The things we never did at home we did at school. Even after a typhoon, we were required to dig up slit at the lake. Under the hot sun, our sweat dripping onto the dirt... even now I remember it like it was yesterday.**

**However, unexpectedly, the good life habits developed during my years at Hualien Teachers College helped me endure the later days when I had no one to care for me, and I even had enough strength to help others.”**

The recollections of these alumni reveal how capable teachers were cultivated during this period. By implementing education opportunities in every aspect of life, enables students to learn through doing, the government hoped to cultivate teachers who valued “service” and “labor.” The influence of these programs was extensive. Chen (1986: 158) described the influence of teacher education at Pingtung Normal School: “After receiving this training for three years, in my 30-year career of teaching and studying, I have always aimed to contribute to the country.” This is precisely what the government aimed to achieve, that is, when the students become teachers, they reproduce the life education they learned at normal schools in elementary schools.

Wang (1998: 332) recalled that when receiving teacher education, the school emphasized cultivating teachers who could “act as teachers, family, friends, and servants.” Teachers and students’ were counseled together, emphasizing mutual support and life education.

When Li<sup>2</sup> served as principal of Hualien Normal School, the lyrics he wrote for the school song, “words are the teachers of people, actions are a model for people,” expressed the school’s and society’s hopes that education students would become an example. Thus, teacher colleges employed hidden education and expectations to increase the importance of ethics and national spirit among students

## ii. The Role of Teachers in the Market-Oriented Teacher Education Model

<sup>2</sup> Sheng Li was the first principal of Hualien Teachers College following its transformation from Hualien Normal School. He was the fourth principal in the history of this institution, serving from 1956 to 1964.

After the lifting of martial law, the authoritarian education system was examined, and the monolithic teacher education style implemented by the Ministry of Education was questioned. Most criticism targeted how teacher education was used to promote government ideology under the party-state system. Examples of these criticisms can be seen in the second committee of the Legislative Yuan in 1993 (Legislative Yuan, 1993: 485), where Legislator Wan-Zhen Chen presented her experience, emphasizing that the Nationalist Party must be banned from demanding publicly funded students join their party. After diversity and open development was implemented, teacher colleges were no longer the only channel for teacher education. However, after students completed teacher education programs, they were required to pass examinations to obtain official teaching positions. Recently, teacher education organizations have been inexplicably driven to marketization. An example of this is the increasing influence of evaluations on the content of Taiwan's higher education. Teacher education organizations must accept evaluations because they influence the number of admissions approved by the Ministry of Education. Following graduation, the pass rate of teacher education students, and the number and ratio of students who pass the employment examinations, are important evaluation indicators. Therefore, curriculum teaching, teacher examinations, and evaluations are closely linked, driving teacher education organizations toward market and performance development.

Curricula for cultivating teachers have trended toward "credits programs." People wishing to become elementary school teachers must first obtain 40 credits from foundation courses including educational psychology, education philosophy, education sociology, and theories of education; at least two subjects must be studied. The teaching method course comprises the principles of education, class management, educational testing and assessment, teaching media and operation, curriculum development, and principles and practices of guidance. At least six credits must be from the teaching methods course, and at least 10 credits must be from the core courses.<sup>3</sup> The practicum

<sup>3</sup> The foundational subject curriculum includes the following: 1) Mandarin pronunciation and speaking; 2) writing characters; 3) children's literature; 4) children's English; 5) local languages; 6) ordinary mathematics; 7) theories of natural science; 8) theories of life technology; 9) theories of social learning fields; 10) music; 11) keyboard music;

and teaching materials provides four credits. At least eight credits must be achieved from the fields of teaching materials and methods. Elementary school teachers were traditionally required to be knowledgeable in every subject. However, after the implementation of the credits program, teacher education students can select courses to obtain the credits required to earn their certificate, before attending the teacher examination. Under these conditions, many question whether educational demands can be satisfied. Although teacher education is diverse, reduced professionalism seems likely.

The universalization of higher education and the development of media and the Internet have increased the circulation of knowledge. Under the market mechanisms, the role of teachers has trended toward meeting market demands. Official teachers, substitute teachers, and reserve teachers have been categorized using subjective methods.

#### IV. Transformations in the Role of Teachers Considering Teachers' Compensation and Prestige

##### i. The Role of Teachers Considering Teachers' Compensation

According to data in the National Income Statistics Report (2009: 13) published by the Directorate-General of Budget, Accounting and Statistics, Executive Yuan, the average annual income in Taiwan was NT\$1,582 in 1951; NT\$6,103 in 1961; NT\$19,777 in 1971; NT\$90,314 in 1981; NT\$227,244 in 1991; NT\$415,336 in 2000; NT\$388,665 in 2001; and NT\$471,797 in 2009. The monthly salary of elementary school teachers was just NT\$75 (Yang, 2011), and their annual income was approximately NT\$900, less than the national average. In the 1960s, the monthly income of elementary school teachers was approximately NT\$600. Chen (2011) reported that as a wood carving apprentice during that period, he could easily earn between NT\$3,000 and NT\$4000 per month, indicating that teacher salaries were comparatively low.

In 1967, the average annual income in Taiwan was NT\$10,028. According to salary calculations at that time, teachers who graduated college earned NT\$695 per month, with an annual income of approximately NT\$9,000. In 1971, the average yearly income was

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12) arts and crafts; 13) performance and art; 14) theories of art; 15) health and sports; 16) folk sports; and 17) scouts.

NT\$16,777 (Directorate-General of Budget, Accounting and Statistics, Executive Yuan, 2009: 13; Yan, 2007: 41). In 1973, compensation for one day of work was approximately NT\$50 (Wu, 1997: 68); monthly incomes were approximately NT\$1,300; and annual incomes were approximately NT\$15,600. However, teacher compensation remained unchanged, indicating that in the 1970s in Taiwan, teacher compensation was below the average among professions.

Before the 1970s, although teacher compensation was not high, the publicly funded system and guarantee of future employment made teaching enticing for low-income families. Wang (1997: 124) stated the following when studying at a normal school in the 1960s:

**“The students who qualified to study at Hualien Teachers College in the 50s<sup>4</sup> were generally from poor families. Their reasoning was innocent. They believed that entering Hualien Teachers College honored their ancestors; thus, they were satisfied and happy.”**

Zhang (1997: 132) discussed student opinions regarding studying at normal schools during that time:

**“The boys who studied at normal schools were mostly from impoverished households. They had no choice but to demean themselves. Therefore, they frequently appeared unable to attain their ambitions, to the point that they frequently complained.”**

Becoming a teacher was not the first choice of students who performed exceptionally. However, normal schools provided publicly funded education to students who were poor but performed exceptionally.

Educational organizations continuously monitored teacher compensation during the early period. In 1964, during Pan's<sup>5</sup> inaugural speech as Head of the Department of Education,

<sup>4</sup> The “50s” referred to in this section is the 50s according to the R.O.C. calendar.

<sup>5</sup> Chen-Chew Pan graduated from the National Teachers College. On April 21, 1964, Pan took over as head of the

he commented on teacher status and compensation:

**“Respect the status of teachers. Improve welfare for teachers. Restore the traditional virtue of respecting teachers and ethics. The phrase ‘good teachers rejuvenate the country’ demonstrates the great responsibility that teachers have and the majesty of their position. Therefore, we must encourage society to respect and increase the self-confidence and self-respect among teachers. How can teachers set a good example when their lives are impoverished. The public know this. Hereafter, exhaust yourselves, use every possible condition, and do everything you can to improve the welfare of teachers.” (Dictated by Chen-Chew Pan, interview by Zhong-Sheng Zhu and Shao-Yi Guo, 2004: 163)**

Recently, the diversification of teacher education has led to an oversupply of teachers. In 2009, only 0.9% of teachers passed the elementary school examination (Ministry of Education, 2009: 262). Under a faltering economy, teaching jobs are stable. Additionally, teachers are only required to have a college degree to earn an average salary of NT\$30,000 per month. Compared to the NT\$22,000 first proposed by the government, teacher compensation is higher than that of other professions. This is the reason over 10,000 people sit the elementary school teacher test annually although the pass rate drops to new lows every year.

When compensation for teachers is low, public funding and employment guarantees can attract exceptional students to the field. When teacher compensation is comparatively high, how are exceptional students attracted to the field? After talented people have invested themselves into teaching, teacher education policies and the position the government sets for teachers are the crucial factors for retaining exceptional teachers.

## ii. Examining the Role of Teachers and the Prestige of the Teaching Profession

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Taiwan Province Department of Education. He has attended the nine-year national teaching plan and implementation. On June 8, 1972, he resigned from being head of the Taiwan Province Department of Education. Later, Pan chaired the Youth Commission, the Taiwan Province branch of the Nationalist Party, the Youth Corps, the Nationalist Union, and Academia Historica.

Although, to date, no scholars have investigated teacher compensation and the prestige of the teaching profession in the 1970s in Taiwan, numerous memoirs indicate that the teaching profession was a decent option for impoverished families.

In 1970, Lin (1981:100–119) investigated the occupational prestige of 40 common professions. University professors were ranked second, secondary school teachers were ranked fourteenth, and elementary school teachers were ranked sixteenth. When a similar investigation was performed again in 1979, university professors ranked second, secondary school teachers ranked thirteenth, and elementary school teachers ranked seventeenth. Educators hold a high position in all occupational prestige investigations. In 1990, Lin again investigated the prestige of the teaching profession and its professional image and reported that the teaching profession is ranked high and considered prestigious (Lin, 1991). Hwang (2003) investigated the structure of Taiwan's occupational prestige and socioeconomic status scale, classifying secondary and elementary school teachers as professionals. In the five levels of socioeconomic status, all teachers were located in the highest levels. The results of investigations in 1971, 1979, and 1990, which spanned almost 20 years, and those of a socioeconomic status investigation in 2003, did not change significantly over time. The results indicate that although teachers do not earn high salaries, they are respected by most people.

To date, the “Education Fundamental Act” announced in 1999 has been amended twice, once in 2005 and again in 2006. This law is the legal foundation of education, officially providing guardians with the right to participate in education. Under the trends of universal information and greater guardian rights, teachers' professionalism faces closer scrutiny. In 2008, Liu conducted “A Survey Study of the Occupational Prestige of Teachers and the Influencing Factors,” and discovered that teachers received the same high level of approval and occupational prestige in various regions. Additionally, despite the varying backgrounds of the respondents, all of them ranked teachers in the first or second level of occupational prestige. Compared with the results found by Lin (1991), this indicates the occupational prestige of educators continues. This notion is deeply rooted (Liu, 2008) because Chinese people have traditionally emphasized respecting teachers. Additionally, the government considers education to be the foundation of the

nation and a sacred job that preserves culture. Teachers are expected to possess “specialized knowledge and ability” and be “content with poverty” because they focus only on principles. This is why teachers had comparatively high occupational prestige during Taiwan’s early history; this level of prestige remains today. However, because of the enhanced rights of guardian, and the increased availability of knowledge, guardians demand teachers meet even higher standards.

## **V. Conclusion and Outlook**

Regardless of how society changes, the role of teachers and teacher compensation is monitored closely. This study adopted a historical context as the primary axis and analyzed the qualities teacher education aimed to cultivate using changes in regulations and education models. We also analyzed changes in teacher compensation and social prestige, deriving the conclusions presented below.

### **i. Conclusions**

**(I.) Considering changes in teacher education laws and regulations, the government’s control of education has decreased, shifting from obvious regulation to invisible control. After the implementation of the “Teacher Education Act,” marketization became the primary influence on the teacher education system. An oversupply of teachers increased the professionalism of the teaching profession.**

Although the government’s control of teacher education has declined, the teacher examinations evaluating the quality of teacher education programs reveal that the government has not completely rescinded control. Instead, the government has simply shifted from obvious political control to control through regulations.

Since the Teacher Education Act was implemented, marketization has influenced the teacher education system. The development of teacher education became a type of “crash course,” and teacher education practices have become a type of “technical training.”

**(ii.) During the authoritarian period, although the government injected ideology into teacher education to cultivate teachers with national spirit and patriotism, the life education they also provided produced teachers who were passionate about**

## **education.**

During the authoritarian period, the government maintained discipline using military control methods and used teachers to promote political ideology. However, teacher education emphasized a mentor system and life and ethics education, strengthening students' characters. When these students eventually became teachers, their ability to care for others contributed to an image of teachers being passionate about education.

### **(iii.) Teacher compensation indirectly influences their social prestige and status**

During the authoritarian period, because of teachers' low salaries, numerous elementary school teachers relied on tutoring to boost their income. However, when teachers tend toward being a "utility," society's perception of them is influenced, leading to a decline in the prestige and status provided to teachers. When society develops rapidly and the economy is healthy, the teaching profession is not the first choice of exceptional students. When exceptional students of impoverished families study at teacher colleges, they tend to perceive they have not achieved their ambitions. During economic decline, when teacher compensation exceeds that of graduates with equal academic credentials, teaching becomes a highly desired profession. Thus, teacher compensation influences their social prestige and status.

### **(ii.) Outlook**

Changes in the teacher education system indicate that the role of teachers has also changed. If transferring knowledge is the primary goal of teachers, then teachers are merely technical artisans of knowledge. However, teachers are also responsible for cultivating student character, values, and attitudes. To prevent teacher education from becoming a formality, diversification should be a strategy, not a goal. This can also resolve the teacher supply and demand problem. Diverse teachers and teacher quality cannot be equated directly, and teacher professionalism and quality cannot be sacrificed merely to obtain numerous and diverse teachers. Only when teachers' professionalism is enhanced and their role strengthened, can their professional status be increased.

Furthermore, teacher education cannot be transformed entirely by market mechanism; the government should establish teacher education policies emphasizing teacher education systems, adjust the number of teacher education students, and enhance the quality of teacher education. Additionally, teacher education organizations should provide evaluations, progressive teaching, guidance for advanced students, and career planning. We hope that improving teacher education in Taiwan can increase the professional status of teachers and establish a global perspective based on local cultural development.

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*Multilingualism and European Border Regions - A Polish-German Case*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

Promoting multilingualism through learning foreign languages is one of the goals of educational policy of the European Union. At the beginning of 2008 the European Commission's Group of Intellectuals for Intercultural Dialogue prepared the report "A Rewarding Challenge, How the Multiplicity of Languages Could Strengthen Europe.", according to which the European Union should encourage its citizens to learn a *personal adoptive language*. A special socio-political context to realise this idea are border regions, as they are said offer a unique possibility to get acquainted with the language and culture of neighbours. This communication is particularly difficult in the case of more or less unrelated languages. A perfect example of such a situation is the Polish-German linguistic and cultural relationship as it has been shaped under various historical and socio-economic circumstances, which are presented in the paper. This is followed by a discussion of the contemporary multilingual landscape of the Polish-German region, as the prestige, the attitudes and the representations of each language are different.

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## Introduction

In the Charter of Fundamental Rights the European Union treats linguistic diversity as a fundamental value and Europeans are encouraged to follow the so called '1+2 principle', which means mastering their mother tongue and two other foreign languages. One of the suggested orders for the languages learnt/taught in the border regions is: mother tongue plus neighbour's language plus English. Turning specifically to the *personal adoptive language* mentioned for the first time in the report 'A Rewarding Challenge, How the Multiplicity of Languages Could Strengthen Europe' (2008) it should be highlighted that a language different from both the language of identity and the language of international communication, and rather a sort of second mother tongue than second foreign language is meant. Moreover, as the authors of the report suggest: 'Learning that language would go hand in hand with familiarity with the country/countries in which that language is used, along with the literature, culture, society and history linked with that language and its speakers.' (p. 7). Border regions, due to geographical proximity, are said to a special socio-political space, as they offer a unique possibility to get acquainted with the language and culture of neighbours. There arises a question how these assets are being used by European citizens?

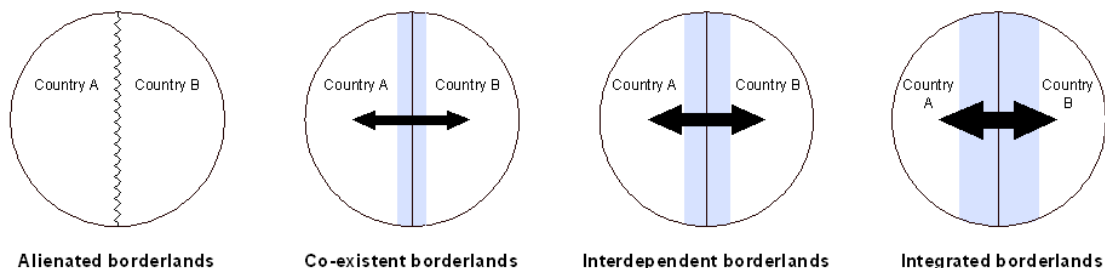
Using the Polish-German border as an example, the paper shows how historical and socio-economic circumstances shape the contemporary multilingual landscape.

## Definitions

As border regions are said to be a kind of laboratory, in which multilingualism is the objective reality, the relevant terms: multilingualism and borderlands will be explained in the beginning.

Although there have been many attempts to characterize the term multilingualism, it is far from easy to give its explicit definition. According to Weskamp (2007: 33) multilingualism can be understood in two dimensions: individual and social. Individual multilingualism means mastering more than one language, while social is connected with the linguistic situation in the countries, in which multilingual landscape is reality e.g. Switzerland.

Borders have long been a prominent theme in many disciplines of science. Attempts to define the term 'border' have tended to be consistent in terms of its role as a separating line, but in the broader understanding the border has an ambivalent character and one of the features of a border is its degree of openness to the diffusion of people, ideas and goods. Martinez (1994: 7) basing on the study he conducted in the US and Mexico proposed the following division:



1. alienated borderlands- border is treated as a barrier and is functionally closed, and cross-border interaction is totally or almost totally absent,

2. co-existent borderlands- the border is no barrier anymore and remains slightly open, people take the first contacts, but the mutual cooperation is limited to a certain degree,
3. interdependent borderlands- the border is stable, there are good, friendly and cooperative contacts between the people. Economic and social complementarity prompts increased cross-border interaction. For Martinez (1994: 9) are the U.S.-Mexico borderlands a good example of strong asymmetrical interdependence, while a more balanced interdependence may be found in parts of western Europe, where economic inequality among neighbouring nations is less of a problem than e.g in regions where Third World conditions predominate or in general in the Western Hemisphere,
4. integrated borderlands – the border is permanently stable, residents of both countries perceive themselves as members of a common social system. In the ideal situation both nations have the same level of development. There is unrestricted movement of people and goods across the boundary. This situation is rare and can be found only in Western Europe.

After having explored the types of borders, we can outline the reasons for the fact why European borders nowadays tend to be more open and stable than other borders. Using the Polish-German border as an example, which is not a typical European border, the next section shows how historical and socio-economic circumstances shape the reality. Scholars have long characterized the Polish-German border as a deeply troubled region. In contrary to Western Europe, where the cross-border cooperation started to develop gradually after the Second World War, East European countries were separated by the Iron Curtain.

### **Polish-German border from 1945 till today**

In this section, a brief historical outline will be given. The modern Polish-German border is marked by the Odra and Nyssa River. It was established in 1945 at the Potsdam Conference as a conclusion of negotiations between Great Britain, the Soviet Union and the United States. It is not an exaggeration to say that Poland has experienced one of the largest boundary changes after World War II. Its borders shifted westward with the allocation of pre-World War II German eastern territories to Poland as compensation for the annexation of Poland's eastern provinces by the Soviet Union that same year (Allen 2003, in Brym 2011 ). Poland acquired a large amount of territories, which cover a space of 103,000 square kilometers, and handed over 180, 000 square kilometers of land to the Soviet Union (Yoshioka 2007: 274). German residents were evicted from the region, and the area was repopulated by a Polish population displaced from Poland's former eastern territories. Germany was divided into two separate states. East Germany (German Democratic Republic), together with Poland (The Republic of Poland, from 1952 on The People's Republic of Poland) became a member of the Soviet bloc, whereas West Germany a member of the Western block. East Germany confirmed the border on 6 July 1950 in the Treaty of Zgorzelec (*The Agreement Concerning the Demarcation of the Established and the Existing Polish-German State Frontier*), while West Germany have not acknowledged it until 1970, when Chancellor Willy Brandt signed the Treaty of Warsaw.

After the Treaty of Zgorzelec, six distinct phases have become apparent in the role played by the border in the bilateral relationships.

According to Kurcz (1992: 12-13) the first lasted from 1950 to 1956, and the border had in this period the function of a strong barrier. The second phase after 1956 (till 1960) was characterised by some common political events especially in cross-border towns Görlitz/ Zgorzelec and Frankfurt (Oder)/ Słubice. During the third phase the Treaty of Friendship,

Cooperation and Mutual Assistance (1967) was signed, but the border was still a strong barrier with nearly no contacts between the citizens. The fourth phase started with opening the border in January 1972, what can be treated as a miracle. In this time there were finally opportunities for contact between Poles and East Germans. Because of Solidarity- the first independent trade union federation founded in Poland in the 1980s, which gave rise to an anti-communist movement, aiming at advancing the causes of workers' rights and in general social change the East German government decided on 30 October 1980. As far as the third and the fourth phases are concerned, we can talk about co-existent borderlands. The fifth phase started in 1980 and one year later the Polish government reacted to the rising Solidarity movement by declaring martial law so the border became again a barrier. It has to be highlighted that Solidarity movement is considered to have contributed to the fall of communism. As the socialist governments in both Poland and East Germany collapsed in the early 1990s, the bilateral climate improved markedly. The sixth phase described by Kurcz is characterized by two important Treaties. The first one is "Treaty between the united Germany- Federal Republic of Germany and the Republic of Poland on the confirmation of the frontier between them" (14 November 1990). Under the terms of the treaty, both sides:

- reaffirmed the frontier according to the 1950 Treaty of Zgorzelec with its subsequent regulatory statutes and the 1970 Treaty of Warsaw;
- declared the frontier between them inviolable now and hereafter, and mutually pledged to respect their sovereignty and territorial integrity;
- declared that they have no territorial claims against each other and shall not raise such claims in future.

The second one: "The Polish-German Treaty of Good Neighbourship and Friendly Cooperation" (17 June 1991). The most crucial issues included in the Treaty were: promoting the language and culture of the neighbor, cooperation in the border region and respecting the rights of minorities.

What deserves special mention is the fact that after the end of the Cold War the legacy of the Iron Curtain continued to divide Europe, but on the other hand the creation of Euro-regions can be seen as a positive unifying symbol. The first Euro-regions, in other words co-operation structures were established in Western Europe on Dutch-German border (1958), while in Eastern Europe it was possible to create them after the end of the Cold War. Along the Polish-German border we can distinguish four Euro-regions:

1. 1991- Neiße-Nisa-Nysa (Poland/ Germany/ Czech Republik)
2. 1993- Pro Europa Viadrina (Poland/ Germany)
3. 1993- Spree-Neiße-Bober (Poland/ Germany)
4. 1995- Pomerania (Poland/ Germany/ Sweden)

They all have aims in common: bringing together citizens from both sides of the border through political, cultural and educational cooperation. As an example, One of the most visible outcomes of the cooperation between Poland and Germany is the university, Collegium Polonicum in Ślubice, which was founded in 1992 and is a place of scientific cooperation between Poles and Germans.

It has to be highlighted that from 1990 to 2004, with the exception of East Germany, the former Iron Curtain coincided with the external border of the European Union. Since Poland's entrance into the European Union in 2004, passports have not been required any more for

German and Polish citizens to travel between the two countries. Moreover, the control of border customs checkpoints along the Polish-German border was abandoned on December 21, 2007. According to Mirwaldt (2010) 'there is an expectation that cross-border cooperation and cross-border contacts will thus facilitate citizen understanding and reconciliation, particularly across historically difficult borders such as the Polish-German.' Understanding is not possible without knowing the language of the neighbor. The border regions as places of communication offer a possibility to communicate with neighbours in languages spoken in the border regions.

### **Learning languages in the border region**

The research history on the European languages in the 20<sup>th</sup> century started with the basic idea that a good European language is an inflectional language, a language that looks like Polish or German or Latin, reflecting the Indo-European inheritance (Heine / Nomachi 2010: 1). According to Haspelmath (2001: 1492-1510) it is possible to maintain that there is a European linguistic area which is due to specific historical factors, namely the following:

- Retention of Proto-Indo-European structures and processes of assimilation of non-Indo-European to Indo-European languages.
- Influence from a common substratum of a pre-Indo-European population in Europe.
- Contacts during the great transformations at the transition from late antiquity to the early Middle Ages in Europe.
- Latin and the common European culture of the Middle Ages.
- The common European culture from the Renaissance to the Enlightenment.

Both Polish and German are written using the Latin alphabet. As far as the differences are concerned: Polish belongs to the Slavonic subgroup of Indo-European languages, and is the second most widely spoken in this subgroup, and the first most widely spoken in West Slavic branch (to which belong also e.g. Czech and Slovak), while German belongs to the Germanic subgroup alongside with English and Dutch. German is the most widely spoken first language in the European Union, whereas Polish the sixth.

People decide to learn a language for different reasons and have different attitudes toward languages. The authors of the report "A Rewarding Challenge, How the Multiplicity of Languages Could Strengthen Europe" (2008) suggest:

By drawing a clear distinction, when the choice is made, between a language of international communication and a personal adoptive language, we would encourage Europeans to take two separate decisions when it comes to language learning, one dictated by the needs of the broadest possible communication, and the other guided by a whole host of personal reasons stemming from individual or family background, emotionalities, professional interest, cultural preferences, intellectual curiosity, to name but a few.

The language of the international communication is nowadays English. Although the term 'lingua franca' is nowadays best known for global English, its concept in the original meaning was different. Etymologically seen it comes from Arabic *lisan al farang* and was used as a contact language e.g. between Arabic speakers and travelers from Western Europe (House 2008: 66).

Attempts to describe motivational aspects in the language learning process can be traced back to Gardner and Lambert (1972). In general attitudes toward languages can be divided into two

groups: instrumental and integrative. An instrumental attitude reflects a desire to learn a language for utilitarian purposes e.g. for enhancing one's career. An integrative attitude reflects a need to get acquainted with the cultural identity and to form interpersonal relationship with speakers of the target languages. It is significant to stress that this distinction is too simplistic, because we can differentiate various types of these attitudes. For the aim of the study conducted in the Polish-German border region the attitudes were divided into 4 groups:

1. geopolitical (due to proximity to Poland/Germany)
2. hobby
3. pragmatic
4. personal

The first step was working out an quantitative questionnaire for the target groups: adult German people learning Polish (233 participants) and adult Polish people learning German (478 participants) and obtaining required information concerning e.g. the following question: What is your attitude towards the language you learn?

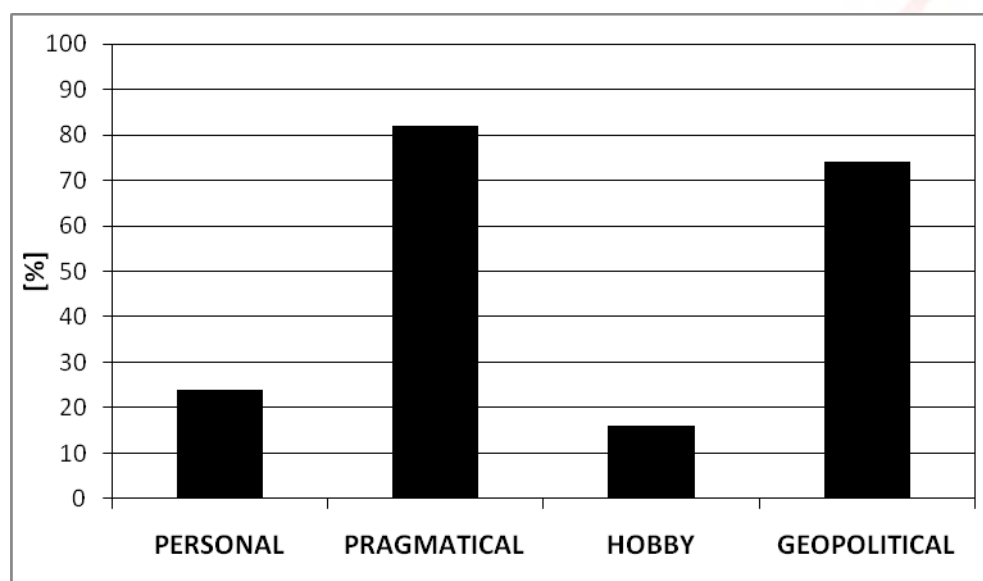
The target groups were asked in multiple-choice questions to name all (out of 4: geopolitical, hobby, pragmatic, personal) which refer back to them.

Moreover, they were confronted with the open question: what problems do you have with the language you learn?

The next stage of fieldwork in the Polish-German were qualitative interviews with Polish and German language instructors.

Combining two methodological approaches seemed to be necessary, because 'the use of multiple, independent methods of obtaining data in a single investigation in order to arrive at the same research findings' (Mackey/ Gass 2005: 181) helps to assess reliability.

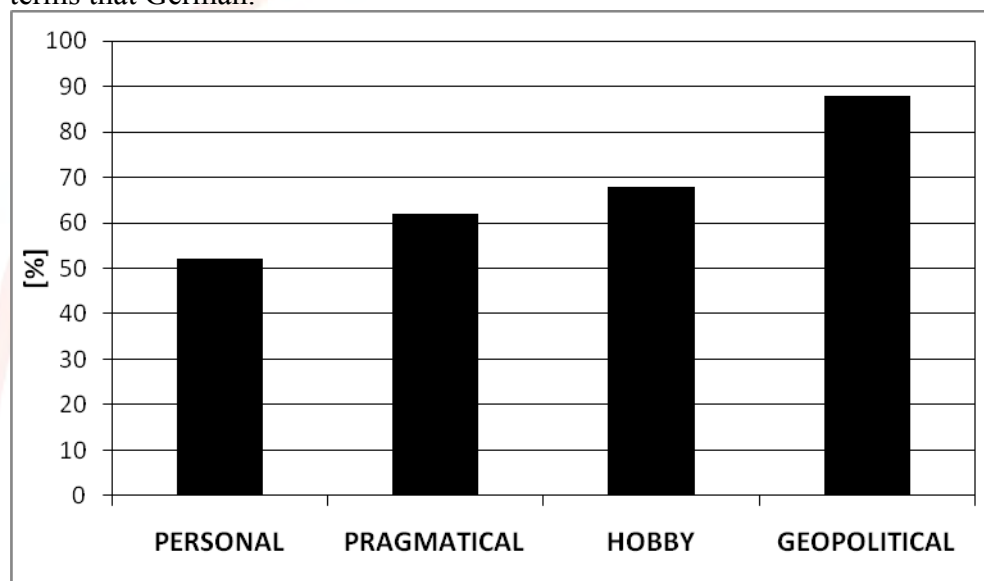
In general the results of a quantitative study reveal that attitudes towards German (Table 1) are mainly pragmatic.



**Table 1: Attitudes towards German**

The more detailed answers were grouped into logical categories: I need German for my professional future, for my professional career or for my job. Without doubt German is being perceived as a language with an instrumental value. Geopolitical reasons are also of importance; in other words it can be stated that living in the border region offers a unique possibility to learn the neighbours' language. A little bit surprising is the last position of a hobby.

To examine the research question on the possible differences in attitudes towards German and Polish there has to be made a comparison. We can see from the table 2 that Polish is mainly being learnt for geopolitical reasons or as a hobby, so it is being regarded in more affective terms than German.



**Table 2: Attitudes towards Polish**

It is interesting to note that among the responses concerning hobby one of the main answers was that it is being perceived as a key to slavonic languages and cultures. The quite high rank of pragmatic attitude towards Polish is surprising, as it was supposed that the personal attitude would be of greater importance.

Concluding, it has to be noted that the attitudes towards both languages are different. All these findings must be judged in the light of the study's limitations.

The results of the conducted study reveal one common problem named by instructors of both languages. These are pronunciation problems in Polish and German.

The main aspects that were named in the group of Polish language instructors can be summed up as: **Stereotypes and lack (or not enough) motivation**

The following statements illustrate it in a very good way:

The most students we have are at levels A1 and A2 (beginners), our pronunciation of ś, ć, rz, ż is a very big problem. (Interview 1)

Polish is in students' eyes a very complicated and exotic language, but many people are ambitious enough to learn it. So it's possible. (Interview 2)

The main problem in the teaching process are stereotypes, even not those which concern Poles or Poland, but those connected with the Polish language. (Interview 3)

Polish seems to the students to be difficult and 'rustling'. But all my students know what piwo (beer) is (Interview 6)

As far as German language instructors are concerned, the following aspect was brought to light: **Dominance of English its and alleged easiness in comparison with German**

A lot of Polish students are learning German, much more than vice versa, but the tendency is sinking even here in the border region, because of English (Interview 4)

English seems to be much easier and practical that is why probably more and more students are deciding to learn it. (Interview 8)

The participants of the study also confirmed that pronunciation is the biggest problem that they have in the learning process.

## Conclusions

Summing up, the Polish-German border regions have undergone transformation: dividing lines that were once closed and have now become zones of cooperation.

The conducted study confirms that socio-economic circumstances shape the contemporary multilingual landscape as attitudes towards neighbouring languages are different. It is difficult to estimate if the idea of *personal adoptive language* has chances to be strongly established in the region. As pronunciation problems, stereotypes and alleged easiness of English were named as main problems there should be found some common solutions, how to motivate the students more effectively. As far as the Polish-German context is concerned, learning languages spoken in the border region can succeed only when it is carried out in mutual cooperation.

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*Online Language Learning: A Learner Perspective*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

In an attempt to provide insights into how online learners learn, this study surveyed 46 online learners of two fully-online university language papers. The questionnaire, consisting of 19 five-point Likert questions and 13 open-ended questions, concentrates almost entirely on the difficulties and challenges confronting online learners, and on how learners adjust and adapt to online learning. Results confirm overwhelmingly that online learning is individualized/personalized, and that the commonest learning pattern is paired or small-group. Learners expressed great frustration over the difficulties in: *finding partner to work with, finding common available time to work together, keeping in touch with the class and the teachers, keeping self-motivated, and being a self-regulated learner*. Other problems include lacking communication, interactions, socialization, and instantaneous feedback. Findings were compared, through correlative analysis, with the difficulties and challenges identified by online teachers in the CALL literature. Many correlations were found.

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## 1. INTRODUCTION

Current computer-assisted language learning (CALL) research seems largely to focus on and identify various pedagogical challenges confronting online language teachers. Online language learners, arguably the most important participants in this adventure, seem to be largely overlooked. What are the challenges they have been facing? How do they take up the challenges and adapt to the new learning environment? Specifically, how do they engage, interact, pair/team up, and collaborate without the benefit of a traditional classroom? All of these challenges and more seem under-investigated in the literature.

Two major CALL research areas in recent years have, legitimately and naturally, centered on the experience of the online teachers who found themselves engaged, in an overnight fashion in many cases, in revolutionary ways of teaching, and on the online learners who are no more prepared than their teachers in this new adventure, namely, online language learning.

While the examinations into teachers' experiences are wide-arranging and far-reaching, (e.g., virtual classroom management, online tasks design, online community building, online assessment, scaffolding, pedagogical shift, to name just a few), the investigations into online learners seem to be limited to learners' attitude towards, perception and evaluation of, satisfaction and performance with certain online learning tools, methods, or a particular setting of an online program.. The findings are typically "positive" and "favorable" in nature. They seem to suggest that online learners are, by and large, getting on with their learning with few problems and issues. If there are any, they are minor ones. For instance, Yaneske and Oates (2010) investigate what benefits students perceive when Wimba Voice Board (VB) was implemented within a MA module for language learners to support asynchronous audio discussion. Positive appraisals from students such as "able to post audio message", "easier to identify their (students') strengths and weaknesses in feedback delivered by audio" are among the benefits reported in the study. Yaneske and Oates did, to their credit, ask what difficulties students had experienced when using a VB. Typically, students' report was somehow channeled into reporting technical difficulties instead of addressing the most pressing and real issues of online learning, e.g., pair/group interactions, group-work, etc.

Let us have another example of study on online learners, by Lai and Gu (2011), which investigates students' use of technology outside the classroom to self-regulate their language learning. The overall findings are encouraging, as "the participants reported positive perception of and engagement with the use of technology for goal commitment, resource regulation, cultural learning regulation, and affection regulation" (p325).

We will look at, again, another recent study briefly which is entitled *Learners reflections on and perceptions of computer-mediated communication in language classroom: A Vietnamese perspective* (Nguyen, 2011). Findings were all extremely positive, including: participants enjoyed the technology-enhanced class in general; it helped improve students' computer skills and collaborative experience.

Another similar study, which attracted my attention immediately when I saw it, has the title of *Learner Experiences in Web-based Language Learning* (Son, 2007). It

investigates students' perceptions and attitudes towards web activities, and finds that to be, no surprise, POSITIVE, yet again!

However, no one seems to be asking the hard questions. How difficult was it to study online? What were the difficulties? How did you (students) take up the challenges and adapt, or avoid the challenges, rather?

It's important to note that most of the studies cited above are not online learning in a strict sense. Rather, they are blended learning combining face-to-face teaching with some CALL elements in those courses. Contrary to that, the current research project looks at online learners who studied in a *complete* online course without any physical classroom or face-to-face interactions among teachers and students. The difficulties these learners encountered are more real and cannot be easily remedied by reverting to, even just momentarily, traditional classroom teaching methods.

Needless to say, inquiries into online learner difficulties demand urgent attention by CALL researchers. There needs a, perhaps, "re-think of the online pedagogical approaches" as claimed by Sun (2011) after her examining, from a teacher's perspective, two online language papers which she had taught for almost four years. She finds that

- 1) the assumption that *Virtual Classroom* and the *Online Learning Community* existed in online language teaching is mere myths;
- 2) online language teaching is, characteristically, one-to-one and small-group teaching;
- 3) an urgent call is needed for a radical pedagogical shift in online language teaching from teacher-centered approaches towards a personalized, small-group orientated, multi-dimensional model of teaching.

In the same spirit, it is wrong to assume that online learners are having a smooth sailing in this new adventure. The picture, painted by most of the CALL literature which survey learners, seems to be telling us that online learners may have, at times, various attitudes, perceptions, preferences on certain things, but they are, most of the time, agreeable and satisfied, and most importantly, trouble-free in their learning.

This is not the case from the experience of this writer. Some serious, critical investigations into the ways online learners learn in general, and specifically what the difficulties (big or small) are confronting them, become imperative in CALL research. If it has been a terrible struggle for the online teachers (many of us are still struggling) in the online learning enterprise, it's rather arrogant for us not to look into the learners'.

It is the intention of this research project to, therefore, bridge the gap between "satisfactions" and "dissatisfactions (namely, difficulties and challenges)" of the online language learners.

Having done the "justice" for online learners by urging more critical research on the ways they learn, one issue remains. Findings and claims made by the online teachers or researchers such as those above by Sun (2011) beg for parallel studies and verifications of some kind, not least by online learners. It is, therefore, the second intention of this research project to carry out a correlative analysis. The findings by

the teachers and researchers found in the CALL literature will be compared and correlated with the difficulties and challenges identified in this study. To just what extent do the challenges for online teachers match those for online learners?

## **2. THE RESEARCH PROJECT**

### **2.1 The Context**

The virtual learning environment (VLE) is Blackboard in which the two fully online papers under investigation reside. Both papers are semester-long. They were developed, between 2007-2008, specifically to be the alternatives for two campus-based, face-to-face papers in the Bachelor of Arts (Chinese) program. The first online paper (Introduction to Chinese I) became operational in 2008, followed by the second one (Introduction to Chinese II) in 2009. They are run alongside the campus-based ones and immediately attracted a large number of students. They became very popular among students in various bachelor degree programs at the university who are doing Chinese major, Chinese minor or Chinese elective papers. The flexibility in time and space offered in online learning seems to fit in well with students' busy schedule of study. The two papers have by now been delivered for more than ten times.

All the class members of the two online papers in that four-year period (2008-2011) were considered prospective participants. However, not all of them could be contacted due to many of them having graduated or left the university with no further contact details. We had to use, as the recruitment instrument, the email list of an online organization (Chinese Program Community) at the university which all of the students belonged, or had once belonged. An advertisement of the questionnaire was sent out to all the past students who were still on the member list. There were about 140 of them in the list, but we couldn't be sure whether those email addresses were current and still in use by our intended participants. After several mass emails, a total of forty-six students elected to participate in the study by taking the survey at SurveyMonkey. It's worth noting that not all the 140 prospective participants had passed the online papers. Some of them may have failed those papers. We did not have any particular recruitment criteria to either include or exclude any particular types of students. It was the researcher's intention to include as wide-ranging views as possible on online learning –of both those who successfully passed the papers and those who failed.

It's also worth noting that the context of this research project, i.e., the settings and the participants, is the same as Sun (2011)'s project, which discusses the pedagogical challenges for online teachers from a teacher's point of view. The current one – investigating the online learners - is a logical next step. It will be interesting to see what Sun (2011) says does match what the students say in this study.

### **2.2 Aims of the Project**

It is the intention of this research project to depart from the majority of previous studies on online learners, which mainly focus on the general attitude, perception, evaluation, satisfaction, and performance of the learners towards certain use of online technologies. This research project will probe directly into learner problems. The supposed problems or difficulties drawn-up by this researcher are based on formal

and informal feedbacks given by the students while they were doing the online papers. They represent the frustrations both expressed by the students and observed by the teachers. In many cases, they are frustrations *felt* by the teachers too. Needless to say, the researcher had also been informed by the CALL literature when formulating those hypotheses (questions and statements in the questionnaire). We will not only put those hypotheses to the test by asking participants' opinions on them, but also want to make sure there is plenty of room for the participants to spell out their own problems, issues and frustrations.

Numerous previous studies have reported that online teachers have been in the forefront of making changes ever since the beginning when they became, in an overnight fashion in many cases, an online teacher, e.g., remoulding themselves into one-to-one or small-group tutors, giving up lecture-type teaching and facilitating small group learning instead, building online learning community, to name but a few. It is hard to imagine that they can survive in this new adventure without having to learn and adopt new things and without having changed their teaching behaviors and methodologies to a certain degree. What about the online learners then? What changes have they made in order to survive and succeed?

Another concern this researcher has is the truthfulness and validities of the findings and claims made by the online teachers and researcher in the CALL literature, such as those made by Sun (2011). It begs, as we argued earlier, for verifications, clarifications and explanations, especially by the online learners.

Shaping by the above considerations, the aims of this research project become apparent; that's to:

1. provide an overview of student experience in fully-online language learning in terms of the difficulties and challenges confronting them;
2. detect any changed behaviors in online learning, as oppose to traditional classroom learning;
3. discover any emerging/new patterns of learning brought about by online leaning technologies and pedagogies;
4. compare learners perspectives resulted from the investigation above with teachers' perspectives on those issues found in the current CALL literature in order to discover correlations and discrepancies between the two.

### **2.3 Methodology**

The research instrument in this study is a survey employing both qualitative and quantitative methods for data collection. This is a retrospective research with all the prospective participants being past students who had completed the online papers under investigation, and many of them had in fact left the university. The advantage of that is that the survey questionnaire could ask all the questions the researcher wished to ask and include all the aspects relevant to the study as the researcher saw fit. Proper procedure was followed in obtaining ethics approval from the university, and the platform for the survey was SurveyMonkey.

The survey is in the form of an anonymous questionnaire which consists of thirty-two questions, and is divided into two parts, with Part One being further divided into four sections, as briefly indicated below:

## Part One – General Characteristics of Online Language Learning

- A. Participation (Questions 1-4)
- B. Group-work (Questions 5-8)
- C. Instructional material (Questions 9-14)
- D. Learning style (Questions 15-19)

## Part Two - Personal experience (Questions 20-32)

All the questions in **Part One** are opinion-scale type where questions or statements about some general characteristics of online language learning are put out and participants are asked to indicate to what extent they agree or disagree by picking one number on a five-point-scale, e.g.:

Group-work and project-type work are important parts in online learning.

- 1. Strongly Disagree
- 2. Disagree
- 3. Neither Agree nor Disagree
- 4. Agree
- 5. Strongly Agree

Questions in **Part Two** are open-ended questions asking participants to share their personal experience in online language learning, e.g., *Without the benefit of a traditional classroom, how did you socialize in an online class?* Participants are urged to answer those questions in as much detail as they can, and are reminded that answers from all them will collectively form a picture of what online language learning is really like. These are qualitative data (see Appendix 1 for the all the questions in the Questionnaire).

The results were analyzed using SPSS. Statistical data obtained from the first part of the survey (19 Likert-scale questions) is presented in four tables with each representing one area of online learning: participation, group-work, instructional material and learning style. The tables summarize the percentage of response to the five-point Likert scale (1=strongly disagree and 5=strongly agree) with means and deviations. It will paint a comprehensive picture as to what are the difficulties and challenges for online learners and how they rate the level of difficulty.

The second part of the data analysis concentrates on the responses of the open-ended questions in Part two of the questionnaire. The thirteen questions in this section are designed to further elicit students' personal experiences and ask them to think and provide us with more details (related to the supposed difficulties detailed in Part One) and more problems and issues which they may have. Towards the end of the questionnaire, several questions are devoted in getting participants to think of and report on their particular ways of learning in the online setting, in the attempt to uncover emerging or changed learning behaviours, both in individual and group (large or small). It was hoped that some kinds of new learning patterns or models could emerge from students' the responses.

Data collected from the responses of the 13 open-ended questions are grouped into two major themes (topics) for analysis and discussion:

1. the difficulties and challenges
2. the change of learning behaviors and emerging new learning methods

Upon the completion of discussion and analysis of all the questions in the questionnaire, a summary will be drawn up, which will be compared with the list of challenges for teachers discussed in the Introduction section of this report. A correlative study will then be carried out. Through correlative analysis, the extent to which the challenges for learners match the ones for teachers will be closely examined, along with a brief discussion on how we could best address these difficulties and promote successful new ways of learning.

### 3. RESULTS

As mentioned earlier, we only managed to compile an e-mailing list of 140 students, yet without being sure who would receive the invitation to participate and who would not, as all the students we surveyed were past students. We received, nevertheless, forty-six responses, giving a response rate of approximately 33%.

#### 3.1 Participation in online learning

The first four questions in the questionnaire concern *student participation* in online learning. “Not enough opportunity for peer interaction”, “difficult to participate and engage in an online class”, “interactions were limited to small group”, and “not having a functioning online community” were the difficulties we put to the students. Student responses overwhelmingly tilt to the “agree” and “strongly agree” scales, with the means (on a five point Likert scale) being 3.22, 3.87, 3.83 and 3.13 for Questions 1, 2, 3, and 4 respectively (see Table 1 below). In particular, those who “Agree” and “Strongly agree” in Questions 2 is as high as 80.4%, which seems to confirm, rather convincingly, that students are indeed interacting and learning in small groups in online setting.

**Table 1: Students’ Experience of Online Learning Participation (%)**

Questions/Statements	N	1. Strongly Disagree	2. Disagree	3. Neither Nor	4. Agree	5. Strongly Agree	Mean	SD
1. There was not enough opportunity for peer interaction. I found it more difficult to participate and engage in an online class than a traditional classroom.	46	4.3	26.1	15.2	52.2	2.2	3.22	20.37
2. Instead of interacting with many people in a class (multi-dimensional interactions), my interactions with classmates	46	0.0	2.2	17.4	71.7	8.7	3.87	29.68

were often limited to a small group of classmates.								
3. I learnt in a small group rather than in a big class, e.g., I only practiced with a handful of classmates, as I knew fewer classmates than I would have done in the traditional classroom setting.	4 6	0.0	6.5	15. 2	67. 4	10. 9	3.83	27.0 8
4. Much work was needed by the teacher to foster the building of an online learning community	4 6	0.0	21. 7	43. 5	34. 8	0.0	3.13	19.8 4

### 3.2 Group-work in online learning

In this section, we have four questions again asking, students' opinions on group-work, project-type work, learner cooperation and collaboration, and group discussion. The words of the questions are on the positive (as opposed in the last four questions), and the responses are overwhelmingly positive too (see Table 2 below). While all the means being rather high (3.39 and above), the response for Question 7 stands out in particular with its mean being 4. No one disagrees, let alone strongly disagree, with the statement that learner cooperation and collaboration should be encouraged in online learning.

**Table 2: Students' experience of group-work in online Learning (%)**

Questions/Statements	N	1. Strongly Disagree	2. Disagree	3. Neither Nor	4. Agree	5. Strongly Agree	Mean	SD
5. I liked the group-work we had to do	4 6	0.0	8.7	19. 6	60. 9	10. 9	3.74	23.8 9
6. Group-work and project-type work are important parts in online learning	4 6	2.2	4.3	8.7	67. 4	17. 4	3.93	27.1 3
7. Learner cooperation and collaboration should be encouraged in online learning.	4 6	0.0	0	17. 4	65. 2	17. 4	4	26.7 2
8. There needed to be more group discussions on study-related matters amongst class members and with the teachers.	4 6	0.0	13	41. 3	39. 1	6.5	3.39	19.0 4

### 3.3 Instructional material in online learning

The next set of questions (question 9-14) concerns with instructional materials in online learning, which is, as the researcher pointed out to the respondents before they had started filling out the questionnaire, *not specifically referring to the online Chinese papers they had done at the university. Rather, they represent the aspirations and ideals as to how online instructional material should be.* Respondents were asked to look back to their experience in online learning and see how much they would agree with those statements.

The intention was to gauge students' opinions on 1) task-based instruction, 2) authentic teaching material, 3) learner initiatives in designing online instructional materials, 4) learner co-construction of course material and resources, 5) learner creativity and 6) the role of the instructional materials in developing student's real-life problem-solving and critical thinking skills. We did not expect a lot of feedback, as learners may not be familiar with the area of teaching materials in general. However, responses were overwhelming again. Instead of a lot of ticks in the "neither agree nor disagree" scale as we had expected, responses show very high means for each question, with the mean of Question 11 being the highest in all the responses in the Questionnaire: 4.09 (see Table 3).

**Table 3: Students' Experience of Instructional Material in Online Learning (%)**

Questions/Statements	N	1. Strongly Disagree	2. Disagree	3. Neither Nor	4. Agree	5. Strongly Agree	Mean	SD
9. Online language learning instruction should be task-based rather than rote learning.	46	0.0	2.2	47.8	37	13	3.61	21.38
10. Online language learning material should help develop real-life problem-solving and critical thinking skills.	46	0.0	8.7	15.2	60.9	15.2	3.83	23.70
11. Authentic learning materials should sometimes be used.	46	0.0	2.2	13.3	57.8	26.7	4.09	23.64
12. Learner initiatives should be encouraged rather than everything prepared and spoon-fed by the teacher, e.g., having some topics of learning suggested by learners.	46	0.0	11.4	15.9	63.6	9.1	3.70	25.05

13. Learners should be encouraged to co-construct class resources and the learning environment, and co-create new learning and knowledge.	46	0.0	8.7	39.1	37	15.2	3.59	17.35
14. Learner creativity should be encouraged.	45	0.0	2.2	24.4	57.8	15.6	3.87	23.37

### 3.4 Learning style in online learning

The last set of statements (Questions 15-19) inquires about the ways online learner learns (see Table 4). We need to look into them one by one as each question represents an individual, separate issue of learning style, except Question 16 and 17 are inquiring the same thing: the personal learning environment.

Self-directed and self-regulated learning (in Question 15) may have been new jargons for some students (2 respondents opted to skip the question), but their responses (75% agree and strongly agree) seem to indicate that they do have experiences on that are aware of this an important issue in online learning.

Questions 16-17 concern with having choices in online learning, in which learners, as individuals, figure out and form their own learning environments. Data collected shows strong agreement (means: 3.76 and 3.70) among students. It confirms that they did, to some degree, pick and choose, and learned in their own various ways.

The next statement in the questionnaire (Question 18) represents an attempt to find out whether online learners prefer online learning because of their personal learning preference, need, social life and technology choice are being met. Results suggested that was the absolute case for 65.2% of the respondents. 8.7% disagreed, though.

The last statement is about whether learners had control over their learning. 60.9% said they did.

**Table 4: Students' Experience of Learning Style in online learning (%)**

Questions/Statements	N	1. Strongly Disagree	2. Disagree	3. Neither Nor	4. Agree	5. Strongly Agree	Mean	SD
15. Without a classroom and the presence of a teacher, I found online learning to be more self-directed and self-regulated.	44	0.0	6.8	18.2	50	25	3.93	19.38

16. Online learning is individualized or personalized learning. It allows flexibility, encourages self-direction and choice, e.g., I did not always just follow the teacher's instructions, or I was able to re-arrange learning material, or choose my own online tools, and configure the learning environment to best suit my learning goals and needs.	4 6	0.0	10. 9	21. 7	47. 8	19. 6	3.76	17.7 4
17. I believe other class members formed their own personal learning environments too.	4 6	0.0	0	41. 3	47. 8	10. 9	3.70	22.9 6
18. My preferences, needs, social life, technology choices, etc. were better served by online learning.	4 6	0.0	8.7	26. 1	41. 3	23. 9	3.80	16.0 8
19. I felt that I had control over the learning process.	4 6	0.0	8.7	30. 4	43. 5	17. 4	3.70	17.2 8

### 3.5 Online Learners' Personal experience

The thirteen open-ended questions (Questions 20-32) in the Questionnaire were designed to give ample space for participants to describe, reflect and comment on their personal experience of online learning. The major themes ran through all the 13 questions are the same as those in the 19 Likert-scale questions in Part One: 1) the difficulties and challenges, and 2) the changes of learning behaviors and emerging new methods of learning.

It is interesting that the data around the topic of learner difficulties and challenges scattered around in almost all the responses for the 13 questions, very often without direct probing. Students seemed to be thinking of these difficulties all the time! A summary of the difficulties includes:

- following the material online
- being a self-directed, self-regulated learner
- keeping self-motivated
- ensuring constant engagement
- staying on task
- finding a partner to study / pairing up
- interacting with others
- getting hold of people through email
- socializing (e.g., I cannot socialize without meeting up with them face-to-face)

We have two questions (Questions 24 and 25) asking *the question* specifically. In Question 24, we listed 11 could-be difficulty areas and ask respondents to tick as many items as were applicable to them. The result (see Table 5) shows that the biggest difficulty in online learning is to "follow the schedule and study regularly" (50%), followed by "finding partners to work and practice with" (41.7%). The next

biggest problem is “finding a common available time work with a partner”. The third biggest difficulty is “technical difficulties”, which was expected and but will not be further investigated in this project as numerous previous studies have dealt with that.

**Table 5: Learner Difficulties**

<b>What other difficulties did you encounter during the course? (tick as many items below as were applicable to you)</b>		
<b>Answer Options</b>	<b>Response Percent</b>	<b>Response Count</b>
1) Technical difficulties, e.g., getting online, or going into the Virtual Classroom (vRoom), or getting online tools to work (e.g., Voice Recorder, the Studio to record paired oral presentations), etc.	44.1%	15
2) Finding “partners” to work and practice with	47.1%	16
3) Finding a common available time to work with a partner	44.1%	15
4) Sticking to the pair-work or group-work schedule	17.6%	6
5) Keeping in touch with the class	32.4%	11
6) Keeping in touch with the teacher, e.g., turning up at the weekly Virtual Classroom sessions	29.4%	10
7) Keeping interested in the course	20.6%	7
8) Keeping motivated	26.5%	9
9) Following the schedule and study regularly	50.0%	17
10) Keeping the assessment deadlines	2.9%	1
11) Being self-regulated as a successful learner should	26.5%	9
12) Others. Please state:	2.9%	1
<b><i>answered question</i></b>		<b>34</b>
<b><i>skipped question</i></b>		<b>12</b>

In Question 25, we asked the specific question again for students to share with us the “most challenge thing” in online learning. Responses include:

- having less communication with the teacher
- finding partners to work with
- keeping things up
- writing and listening

- studying consistently on weekly basis
- desolation (I felt lonely)
- oral presentation

Date collected for the second theme (topic) of this project, i.e., the change of learning behaviors and emerging new ways of learning, are mostly found in the responses for Questions 26, 27, 29 and 31. The information given by the students on this topic (theme) is very little, unfortunately. As a matter of fact, none of the responses for Question 26 (*In the new learning environment (as opposed to traditional classroom learning), what changes and what effort did you have to make to adapt?*) answered the questions straight; instead, students mostly indulged in their leaning difficulties again which have already appeared in other questions-responses.

Subsequently, when students were asked whether they had noticed any new ways/models of learning by other class members (Question 29), almost all the respondents but three (out of 34) replied with a simple “no”.

#### 4. DISCUSSION

The areas of difficulties and the challenges for online learners have clearly emerged as a result of this survey. The most salient and talked about ones seems to be:

- finding partner to work and practice with
- finding common available time to work together
- keeping in touch with the class
- keeping in touch with the teachers

These outcries points directly to the root of the problem in online learning: lacking a physical place where students can meet, study and hang out routinely at a fixed given time. Under the circumstances, students have no choice but make changes and adapt. This can be proved by students overwhelming confirmation of their having to interact and learn in a small group (Question 2). Interestingly, they did not seem to be aware that they had made an effort to change in the ways they learn, and the small-group learning, which they had become heavily relied on, was the new learning model/pattern we have being looking for and to confirm. This helps to explain the surprising (for the researcher) and “innocent” answers of “no” in Question 29 and 34 when they were asked about changes and new learning methods.

It is possibly, due to the lack of it, students highly rated group-work, project-type work, learner cooperation and collaboration, and group discussion in online language learning, especially in the area of learner cooperation and collaboration. The positive assertion of the benefits in online learning should not be ignored.

In assessing the design of instructional materials for online learning, students showed their strong appreciation over task-based instruction, authentic teaching material, and learner initiatives in designing online instructional materials. They also placed strong emphasis on the development of real-life problem-solving and critical thinking skills.

As for self-directed and self-regulated learning in online setting, student’s responses are of no surprise, as they had been telling us how difficult it was for them to stay and

keep focused in the papers. The topic of self-motivation had resounded throughout the survey. Online teachers must take heart to this issue and work hard to help students develop self-directing and self-regulating skills.

There have also been confirmations from the students that they did, as individuals, choose various learning tools, figure out and form their own learning environments. Data collected shows that not only they believed that were the case, but they actually did operate in their own ways to a great degree throughout the course. Individualized or personalized learning has become a unique feature in online learning, which online teachers must no longer ignore. There urgently needs further studies into how individual learners operate in their own learning environments, how individuals link up with other learners, and what can be done to foster and enhance individualized learning.

Learning difficulties identified by the students here correlate favorably with what is said by the teachers and researchers in the CALL literature, especially those by Sun (2011), e.g., the dysfunction of the virtual classroom and the small-group learning centers scattering independently around the online learning community.

## 5. CONCLUSION

Learner difficulties in online setting are real and will not fade away, if one looks into the fundamental causes for that – the disappearance of the traditional classroom. Urgent, serious and critical investigations become imperative. Pressing issues such as interactions, group work, instructional materials, learning methods and teaching methodologies, etc. need to be addressed and closely examined in all online language courses. The focus of these studies should be moved, at least to some extent, from the online teachers to online learners. This is to ensure that all the decisions made and solutions adopted are well informed by learner experiences. The goals are to make decisions and solutions which will serve online learners' interests to the greatest possible extent.

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*Powerful Impact of YouTube Upon Presentation Skill Development of MBA Students*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

The influence of English and digital technologies becomes growingly intense in the Internet era where English is used as the *lingua franca*. Specifically, in the today's business world, giving presentations in English is turning to be a common feature of working life ever more. When giving a presentation in English, even those with high English proficiency tend to be agitated, apprehensive, reluctant, diffident, etc. Many presenters feel terrified that their presentations are not powerful and attention-grabbing enough due to a lack of suitable techniques and skills. More importantly, the only feedback from the instructor may be deemed inadequate. The present study examined the influence of YouTube on the presentation skill development of 195 MBA students in a 36-hour intensive English course in June 2012. With the course contents consisting of 30% lecture and 70% practices, the participants were trained to familiarize themselves with presentation skills as an essential requirement of the business world. After having been given in class, all presentations were then uploaded onto YouTube. Employing a simple 4-option questionnaire, the co-authors asked the participants to express themselves by describing and comparing their feelings evoked from the in-class votes compared to the views gained from the Internet network. The findings revealed that most participants (66.7%) believed that, combined, both approaches enhanced their English learning with greater effectiveness, while 28.2% preferred merely the in-class presentation activity ensuring higher reliability than YouTube. Despite being the generation of cutting-edge technology, only 5% preferred presentation uploaded onto YouTube only.

*Keywords: English learning, MBA students, presentation skills, Thailand*

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## 1. INTRODUCTION

When the world becomes borderless, mounting globalization facilitates the exchange of knowledge and ideas. An international language like English has become invaluable and inevitable. This situation is true for both non-English immigrants and for the people of the non-English-speaking host countries. For the former group, non-English immigrants must learn English as the official language of the English-speaking country in order to survive. For the latter, both immigrants and hosts must be able to speak English for effective communication in diverse settings such as at the workplace, hospital, school, department store, etc. As a member country of the ASEAN Economic Community (AEC), Thailand will become a bilingual nation. The country thus needs to prepare her people in the domain of English proficiency. It has been observed that Thai learners, who are traditionally reticent, tend to value harmony and respect to authorities (Lohsiwanont, 2001, pp. 33-39). Examining the cultural adjustment of 15 Thai Ph.D. students at a Midwestern university in the U.S., Lohsiwanont (2001) found three major difficulties, one of which was oral English proficiency (p. 65).

Cultural norms are found to be a major influence affecting language use (*see* Macias, 1987; Heath, 1983; Delpit, 1988; Delpit, 1992; Heller 1997; Jaturongkachoke, 2001; Lohsiwanont, 2001; McDermott & Varenne, 1995; Sakdisubha, 1987, for instance). Macias (1987), for instance, found that cultural conventions of some non-English speaking students may cause them to be silent as silence means respect in their culture. However, in the English-speaking classroom, especially the American one, all students are expected to share thoughts and be voluntarily involved in class discussions. Extensive research has been conducted the effect of the racial and cultural background on English acquisition (e.g., Heath, 1983; Delpit, 1988; Delpit, 1992; Lohsiwanont, 2001; Long, 1998; McDermott & Varenne, 1995; Heller 1997), especially when there is a collision of two or more languages where one becomes *dominant* and the other *inferior* (Grosjean, 1982). Such introversion may even make plenty of non-native English learners sound incompetent. Students who are considered incompetent in English may experience limited opportunities for both the realms of education and employment.

This current study explores how YouTube, a new mode of pedagogical media, can be used to help Thai students to become proficient Thai-English bilinguals. It is interesting to know whether or not the cultural trait of being *reserved* has changed or still continues to exist, and YouTube can help these young-blood Thais to overcome their shyness, diffidence, and considerateness (if any). It will also establish a record of English as a Foreign Language (EFL) learners' attitude towards sharing knowledge on YouTube.

## 2. INFLUENCE OF THE INTERNET MEDIA UPON ENGLISH LEARNING

It is obvious that the Internet has great contribution in English learning and teaching process. Loads of researchers and technological gurus have reported that the fast development of technology has created a novel learning way by using IT while countless e-learning courses

emerge everywhere (*see* Brandon, 2005; Crichton & LaBonte, 2003; Dudeney, 2007; Dudeney & Hockly, 2007; Frendo, 2005; Horton, 2006; Limlumlertkul & Liu, 2010; Leong & Koh, 2012; Martin, Parker, & Deale, 2012; Pagram & Pagram, 2006; Pufahl, Rhodes, & Christian, 2001, among many others). In Thailand, modern technologies like the Internet, computer, and digital become common in its educational and occupational realms. Even Thai first graders now learn how to use tablets. The following section provides information on studies of the use of technologies in language teaching.

Horton (2006) stated that e-learning is the use of digital, information, and computer technologies to construct learning experiences in distant modes. Brandon (2005) asserted that this pedagogical approach allows learners to access pedagogical contents which will be included in the common templates along with instructions and examples. Willie (1979) found that the use of media positively correlates with language development; nonetheless, to have plenty of e-learning courses may be useless. Brandon (2005) suggested there may be only an online course, but that one must be able to transform the business. Online or e-learning can support three organizational tenets for learning: timely topics, greater freedom, and cost retrenchment, while the actual learning remains the same or even better (Crichton & LaBonte, 2003). In Thailand, the importance of the Internet is highlighted for information retrieval (Pufahl et al., 2001).

Pagram & Pagram (2006) proposed that e-learning includes an immeasurable variety of electronic materials in instructions comprising CD-ROM, computer-based learning, and web-based learning, among many others. Likewise, there are plenty means of communicating via the Internet, but people usually use only the World Wide Web and e-mails (Dudeney, 2007). Dudeney and Hockly (2007) claimed that the introduction of the Internet or other technologies to the classroom is not easy because some negative attitude towards the world of technology still exists (pp. 8-9).

In this study, the authors thus use the term e-learning to cover the use of YouTube, a website or the Internet medium, as a form of e-learning. The usual classroom-based pedagogy remains the same as known for centuries. YouTube is the only one electronic medium employed under examination in this business English classroom. In the current study, the co-authors will look specifically into both optimistic and pessimistic attitudes towards technology which may arise from the presentation activity.

### **3. HOW TO TEACH BUSINESS ENGLISH**

In his book *How To Teach Business English*, Evan Frendo (2005) has suggested that “teacher” function as a *trainer*, who alters learners’ behavior or ability so that they can perform a particular job effectively,” a *coach*, who knows how to help learners to recognize their personal strengths and weaknesses so that they can plan the lessons and activities accordingly,” and a *consultant*, who offers knowledge gained from his or her business know-how and expertise (p. 5). Keeping these roles in mind, the co-authors planned to teach around 240 MBA students by starting the class with some necessary concepts of grammar, reading and writing, or so-called “linguistic competence.” For the speaking part, oral presentation is used as a means to apply such linguistic competence to their real-life experiences, or so called

“discourse competence.” To master English, students need to be well-equipped with both linguistic and discourse competence as strong foundation (Frendo, 2005).

As the Internet became popular among students at the moment, if you key the words “Oral presentation,” approximately 8,350,000 websites will pop up (September 30, 2012). If one looks into YouTube and click the same phrase, millions of websites display. What is meaningful here is that the Internet drastically intrudes our daily life at all realms including education, business, and medicine, among many others. In a study conducted with students in the United States, positive perception was found among the respondents “as a means of enhancing learner-learner, learner-instructor, learner-content, and learner-interface interaction” (Martin et al., 2012). Such constructive influence made the co-authors—who were also the co-instructors in the present course—decided to use the Internet for business learning and teaching. As billions of people love to watch YouTube and there are many sample videos of good presentation there, the authors came to a decision to embrace such website in their pedagogy. Most recently, Leong and Koh (2012) studied the attitude towards online education or online learning among lecturers of higher education in 5 schools including Schools of Business, Engineering, Computing & Information Technology, Language Centre, and Centre of Excellence for Pre-University Studies. They have found that School of Business lecturers have shown the most positive views of online course. Thus, in this study, it is interesting to examine whether business students favor the use of YouTube in their English learning or not.

#### 4. AEC2009-2015 AS A NEW REQUIREMENT

To non-specialists in the field, ASEAN stands for the Association of Southeast Asian Nations. As a member state which is a political paragon in the region, Indonesia became the ASEAN Secretariat. To empower its ten member states, consisting of Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Viet Nam, the ASEAN Economic Community (AEC) was formed with its roadmap from 2009 to its full enforcement operations in 2015 (Association of Southeast Asian Nations, 2009). According to such roadmap, professionals and skilled labor can cross the border more legally and conveniently, whereby an exchange of personnel will be widely accepted (Association of Southeast Asian Nations, 2009, pp. 29-30).

As a State Member, Thailand, where interculturalism has long been highly valued, has warmly embraced the new economic requirements in a vast variety of aspects including employment and English as a *lingua franca*. Fasold (1987) addressed a remark that even though Thailand has never been colonized, English, *a world language*, has been taught to Thais fundamentally for economic reasons (p. 10). In Thailand, at least one foreign language is compulsory for all students (Pufahl et al., 2001) and that language is English. Regarding AEC as the most recent requirement, Thai subjects have to adjust themselves both at work and in their study life to survive.

For the former reason—employment, to abide by the AEC roadmap, many private behemoths started to hire foreign staff from Cambodia, Myanmar and Viet Nam. Likewise, Thai applicants for a private company’s job have to attain the 550+ TOEIC score. Even the

employed have to develop and/or maintain their English proficiency accordingly. A good example of a telecommunication state-owned conglomerate's endeavor to drive its employees to master English was well demonstrated in Chanseawrassamee's most recent work (2012).

For the latter—education, numerous Thai academic institutions have increasingly provided many bilingual and international/English programs from the kindergarten level up to the university level. A similar trend has been found in the higher education programs in both public and private institutions; namely, 356 international programs in 1999, 465 in 2002, and 521 in 2003 (Office of the Educational Council, 2004, p. 149).

In the present study, YouTube is used as a way for MBA students to learn English and become more outgoing via YouTube. The influence of YouTube on learning English will then be examined. Approximately 240 MBA students in the Flexible Program took the Intensive English Course for 36 hours. Even though the MBA Flexible Program is a Thai program and the English subject is a non-credit course, the students are found to be eager to be prepared their English skills for the full form of AEC enforcement in 2015. Significantly, the number of class hours has doubled from 18 hours in almost twenty previous cohorts to 36 in the most recent one—the cohort investigated in the current study. This is an obvious attempt of a public higher-education institute to cope with the forthcoming AEC in two years ahead.

## **5. METHODOLOGY**

### **5.1 Nature of the Intensive English Course at a Postgraduate Institution**

The Intensive English Course is a non-credit course which lasts 36 hours. The class meets once a week on Saturday for 6 hours per day (from 9 to 16 hours) for 6 weeks. The course is provided at an outstanding postgraduate institute in Bangkok. The major purpose of the course is to prepare the MBA students for reading textbooks and assignments, most of which are in English. However, as the time passed and the imposition of technology and English became apparent, teaching English by using the grammar-translation approach may be deemed improper. The co-authors thus added some interesting activities, e.g. self-introductory talk, oral presentation, etc., to make the class more interactive and lively. In the previous cohorts, students were asked to present on an exciting variety of topic including moon cakes, mobile phones, tourist spots, and cars.

Each day, grammatical concepts, reading assignments, and writing practices were provided in one 3-hour session. The other 3-hour session would allow all students to apply what they had learned in the first session to their speaking and/or presentations. For this batch, students were assigned to give a presentation on the “buffet restaurant.” The presentation was tape-recorded on June 16, 2012, which was the third day of class so that there would be some time for each group to increase the views. The second author undertook the task of uploading the videotape of each group onto YouTube, but one. Group 6 Cake Makeup of Section 2 had videotaped the group presentation and uploaded the file onto YouTube itself a week before

the other videotapes were uploaded. It is thus interesting to know whether such variables can affect the results or attitude of the participants in the current study or not.

In each speaking/presentation period, a brief glimpse of preparatory presentation skills and techniques were provided. Concurrently, students learned how to pronounce English at the word, sentence, and passage levels. Some speaking activities included tongue twister, stress and rhythm, *-ed* and *-es* ending pronunciation, non-existent sounds in Thai, and patterns of professional business English statements. The students were then asked to do many speaking tasks both individually and collectively. Winning each activity, each group was rewarded. When giving presentations, students had to learn how to make a good introduction, systematic outline, understandable visual aids, effective ending, and ample questions&answers. The reward for presentation depended on the prompt in-class votes as well as the views on YouTube. In this research study, the group which had won the in-class votes in each section were awarded 12 gift vouchers from Oishi Express, a Japanese restaurant. Each voucher was valued at 450 baht. The winning group based on the number of views on YouTube received gift vouchers from Oishi Grand for 12 persons. The gift voucher cost around 650 baht each. The impact of rewards upon the students' learning progress, in-class interaction, and learning attitude is fully discussed in Chanseawrassamee's work (2012).

To persuade MBA students to pay more attention to the Internet results, they were apprised of some famous people such as Justin Bieber who became successful because of YouTube. As there were over 200 students in this cohort, the class was divided into two sections. Each section studied the same lecture topics alternatively in the morning and afternoon sessions.

## 5.2 Number of in-class votes and number of views after being posted on YouTube

This portion reports the number of both in-class votes and views which, to some extent, is believed to influence the option selected by the students in each section. Table 5.1 shows the number of views each group of the first section gained.

**Table 5.1 Number of all options selected by MBA students of section one**

Group	Brand Name	Total Vote (June 16)	Total View (June 30)	Total view (July 7)	Total View (July 14)	Total View (Sep 30)
1	Siam Savory <sup>1</sup>	10	526	910	1,692***	1,789
2	The Eight Eggs <sup>2</sup>	10	312**	312**	312**	312**
3	Choco Flex <sup>3</sup>	2	325	558	577	597

<sup>1</sup> See <http://www.youtube.com/watch?v=w4Vn8I9CuSM&feature=channel&list=UL>

<sup>2</sup> See <http://www.youtube.com/watch?v=VeeZ9ujl6K0&feature=plcp>

Group	Brand Name	Total Vote (June 16)	Total View (June 30)	Total view (July 7)	Total View (July 14)	Total View (Sep 30)
4	Sweetest Things <sup>4</sup>	10	83	106	151	160
5	Ka-Nom-Thai <sup>5</sup>	1	78	107	119	147
6	Full Moon Buffet on the Beach <sup>6</sup>	18	258	328	348	361
7	7 Bizarre <sup>7</sup>	16	301	435	645	691
8	May Rise <sup>8</sup>	14	640	926	1,189	1,251
9	Wow Zaab <sup>9</sup>	6	19	111	135	142
10	Le Saab Hour <sup>10</sup>	30*	268	314	330	346

**Remarks:** \*This group won the in-class vote.

\*\*This group's number of votes did not change all through the whole course and beyond.

\*\*\*This group won the view vote.

In the first section, Group 10 Le Saab Hour won the in-class vote on June 16, the day when the presentation was made by all groups. However, based on the views after uploading the video file onto YouTube, Group 1 Siam Savory won the contest. Only one group—Group 2 The Eight Eggs—did not change its number of views even three months passed (as of September 30, 2012). According to a computer science professor, such phenomenon can happen if the attempt to add the number of views made from the same URL was detected. This phenomenon also occurred to Group 10 Village Buffet Restaurant of the second section (see Table 5.2 below).

It is well worth mentioning that throughout the first day of posting the videotapes from June 16 until September 30 that there have been no destructive, offensive, or disapproving comments posted by viewers.

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<sup>3</sup> See <http://www.youtube.com/watch?v=dRvRZvMnde8&feature=plcp>

<sup>4</sup> See <http://www.youtube.com/watch?v=hJo1oFggi1Y&feature=plcp>

<sup>5</sup> See <http://www.youtube.com/watch?v=lvhfjUSWm9o&feature=plcp>

<sup>6</sup> See <http://www.youtube.com/watch?v=SO7f0max1n8&feature=plcp>

<sup>7</sup> See <http://www.youtube.com/watch?v=OiTBjx52DY&feature=plcp>

<sup>8</sup> See <http://www.youtube.com/watch?v=VmOiMTI4MZA&feature=plcp>

<sup>9</sup> See [http://www.youtube.com/watch?v=rGg-4\\_0Mi54&feature=plcp](http://www.youtube.com/watch?v=rGg-4_0Mi54&feature=plcp)

<sup>10</sup> See <http://www.youtube.com/watch?v=nhMlbkwQoU8&feature=plcp>

**Table 5.2 Number of all options selected by MBA students of section two**

Group	Brand Name	Total Vote (June 16)	Total View (June 30)	Total view (July 7)	Total View (July 14)	Total View (Sep 30)
1	Kaiseki Ryori <sup>11</sup> Buffet	7	16	290	294	298
2	Lady Blah <sup>12</sup> Blah	1	219	301	325	347
3	Low Cal Buffet Restaurant <sup>13</sup>	7	19	157	472	515
4	Zab...Zaa Buffet Restaurant <sup>14</sup>	1	519	868	964	1,003
5	Dezato <sup>15</sup>	2	22	1,000	1,939	2,105
6	Cake Makeup <sup>16</sup>	43*	990	1,202	1,951***	2,127
7	Der Ka Der Esan Buffet <sup>17</sup>	33	74	121	135	149
8	World Wine Lounge <sup>18</sup>	8	69	169	243	253
9	7 Heavens <sup>19</sup>	6	30	120	215	237
10	Village Buffet Restaurant <sup>20</sup>	6	310**	310**	310**	310**

**Remarks:** \*This group won the in-class vote.

\*\*This group's number of votes did not change all through the whole course and beyond.

\*\*\*This group won the view vote.

<sup>11</sup> See <http://www.youtube.com/watch?v=r6ZGa3PmVeU&feature=plcp>

<sup>12</sup> See [http://www.youtube.com/watch?v=xOQnMb12\\_ms&feature=plcp](http://www.youtube.com/watch?v=xOQnMb12_ms&feature=plcp)

<sup>13</sup> See <http://www.youtube.com/watch?v=KzfKhkIndsY&feature=plcp>

<sup>14</sup> See [http://www.youtube.com/watch?v=RHOGHd5h\\_hl&feature=plcp](http://www.youtube.com/watch?v=RHOGHd5h_hl&feature=plcp)

<sup>15</sup> See <http://www.youtube.com/watch?v=OsQMjwoHMss&feature=plcp>

<sup>16</sup> See <http://www.youtube.com/watch?v=om8INhBcHuM&feature=plcp>

<sup>17</sup> See <http://www.youtube.com/watch?v=7loRYZev1zl&feature=plcp>

<sup>18</sup> See <http://www.youtube.com/watch?v=NpzsenjGJ9Q&feature=plcp>

<sup>19</sup> See <http://www.youtube.com/watch?v=S8W-Ys-91Bg&feature=plcp>

<sup>20</sup> See <http://www.youtube.com/watch?v=jM9oQTPxnzY&feature=plcp>

In the second section, Group 6 Cake Makeup won both the in-class votes and YouTube views. Like the first section, only one group's number of views did not change. As aforementioned, such phenomenon led to the same elucidation: when the repeated attempt to add the number of views made from the same URL is detected, YouTube automatically blocks such transactions.

As there were some significant differences in the videotaping and uploading time, which may modify the results of both sections, it is interesting to know if such results may or may not affect responses to questions in the questionnaire.

### 5.3 Questionnaire

In the present study, both authors acted as the participatory co-researchers as they were the two instructors of the course. The co-authors' main purpose of introducing YouTube into their course was due to the website's growing popularity among modern, young Thais. Despite such belief, the co-authors wished to test if the new approach fitted their students and could help them to learn English more effectively. The 2-page questionnaire was designed to determine whether students liked either one of in-class activity and also presentation videotaping share on YouTube, or both, or neither of them. In particular, the co-authors wanted to know if YouTube could really help young Thai learners to come across their shyness and diffidence as a cultural trait. Initially, a singing contest was planned to be included. Nevertheless, some activities including a sing-along contest, had to be removed due to temporal constraints. The number of students (approximately 240 in total) was also another factor of the best selected activities. The respondents were asked to complete the questionnaire in either Thai or English as they wished. In the questionnaire, they were asked to select the most favorable way of learning related to making an effective presentation in English. Four options available for them to select only one were:

- (1) Prefer English presentation as an in-class activity only;
- (2) Prefer English presentation as exchange of knowledge on YouTube;
- (3) Prefer English presentation both as an in-class activity and exchange of knowledge on YouTube; or
- (4) Dislike English presentation both as an in-class activity and exchange of knowledge on YouTube

Percentage of each option was then calculated to find the respondents' overall preference. Open-ended questions for free expression of opinion were also provided for each student's free articulation. One hundred per cent of the participants were willing for further informal discussion.

### 5.4 Participant

On the last day of class, questionnaires were distributed, filled in, and returned from 195 students (male: 80; female: 115) out of the entire 240 in the "Intensive English" course

provided at a postgraduate institution in Thailand. Their ages were between 23 and 38, with an average of 27 years old. Their fields of study varied from one to another because this is an MBA course, which, by nature, incorporated diverse fields of study comprising technology, information technology, biotechnology, engineering, English, arts, decorative arts, science, political science, medical technique, veterinary science, commerce, accounting, management, finance, finance & banking, statistics, marketing, economics, international business, and law. To take this intensive course, all these students had passed a written examination and an interview at a famous postgraduate institute where this research was conducted. Hence, the participants were considered to have a medium to high degree of English proficiency. Since the participants in the current study were young generations of the country who were believed to be adept at the Internet and/or other multimedia skills, the introduction of YouTube was performed in order to see whether or not such cutting edge of computer technology will assist in their English acquisition and development.

As the “Intensive English” course was provided before the first semester began, all participants were new to each other and needed to learn to work both as an individual and as a group. This Intensive English course thus functioned as a place where all newcomers learned to know each other whilst learning English.

## 6. FINDINGS & DISCUSSIONS

This portion discloses the number of each option selected by each section. Table 6.1 shows such a number.

**Table 6.1 Number of each option selected by MBA students of sections one and two**

Section	Option 1	Option 2	Option 3	Option 4	Total
<b>1</b>	23	5	70	0	98
<b>Percentage</b>	<b>23.5</b>	<b>5.1</b>	<b>71.4</b>	<b>0</b>	<b>0</b>
<b>2</b>	32	4	60	1	97
<b>Percentage</b>	<b>33</b>	<b>4.1</b>	<b>61.9</b>	<b>1.0</b>	<b>100</b>
<b>Total</b>	55	9	130	1	195
<b>Percentage</b>	<b>28.2</b>	<b>4.6</b>	<b>66.7</b>	<b>0.5</b>	<b>100</b>

Table 6.1 reveals that most respondents of both sections (66.7%) prefer the instructor to employ both in-class and Internet activities (Option 3) rather than either or neither activity. Fewest participants selected Option 4. This may be explained in the sense of saving-losing face culture in Thailand, where teachers or instructors are highly respected. In the Thai culture, saying something against the teacher may be deemed unacceptable or even aggressive.

Looking at Option 1, the percentage of preference for in-class activity of the first section is roughly 10% lower than the second section. There seems to be some relevance to the way Option 3 was chosen by the two sections. .

Option 2 gained a very low percentage in both sections. This may be mainly because of the unreliability of the Internet votes for the time being. Students tended to depend more on the real-time activity rather than in the cloud. While most students who chose Options 1 may have firmly believed that it would be fairer if all participants experienced the same in-class activity together, students who chose Option 2 may valued the tenet of knowledge exchange online. For this group of students, even though the in-class votes seemed fair, reliable and spontaneous, posting their presentation on the Internet may have been regarded as a door to be seen and appreciated.

Despite the majority of Option 3 alike, the higher percentage of the first section (71.4%) is found approximately 10% over the second one (61.9%), in reverse to Option 1. This can be best explained by the winning group of each section. For the first section, different groups won the in-class and Internet contests. Students in this section may have regarded the Internet views as an additional means to win. For the second section, the same group—Group 6 Cake Makeup won both the in-class votes and the YouTube views. Some students may be of the opinion that the result was, to some extent, unfair.

As each Option entails plenty of comments and complaints, it will be better to let respondents articulate their comments freely. These constructive comments should be reported using the respondents' own words because they were not only involved in the presentation activity, but also other pedagogical concepts. These comments are precious to all instructors, educators, and program directors for the course improvement in the future. Subheadings 6.1 – 6.4 will reveal comments made by students of each section on the four options one by one.

**a. Discussion on Option 1: Prefer English presentation as an in-class activity only**

As discussed in Section 5, the differences between the results of the in-class votes and the YouTube views may affect the comments of the respondents. For that reason, the co-authors reported the comments made by each section separately.

**Section 1 (23.5%)**

Students of the first section loved the in-class presentation activity because it was deemed fairer than YouTube. It allowed students to freely express themselves and actively participate in the activity. Some students even asked for some more presentation practices. Details are followed.

- It looks fair as the audiences show up where the presentations really take place.
- The result comes from audiences who really participate in the presentation live rather than from the virtual attendance via the Internet.

- I like this way because the vote of YouTube presentations depends mostly on the name of the presentation. The presentation should focus on the content, not the key word.
- Taperecorded and live presentations are different in terms of atmosphere, setting, time, conciseness, readiness, etc. Unlike the in-class activity, clipped videotapes on YouTube just show part of such attempts.
- In-class votes seem to be fairer. YouTube votes are not real because they depend on the number of the size of a particular group's social network.
- In-class activity is completed in class.
- The in-class vote reflects the reality more than YouTube. One man one vote.
- It's a real communication in the classroom. All teams compete against each other. This is much better than YouTube.
- I prefer in-class votes because it is a way to practice English. I feel that I always actively participate in the in-class activity.
- In-class activities reflect the real number of students' votes and feedbacks in the classroom. The number of views on YouTube may not reflect the attention of the live audience. YouTube can be cheated.
- Live presentation creates more participatory feelings.
- Too many factors affect the number of views on YouTube.
- In-class votes are fair.
- There should be more in-class presentation activities.
- I don't like YouTube views because the number of viewers does not reflect or guarantee the quality of our presentation. If any group has more friends or acquaintances or more time, they can get a lot of votes. Fun presentations do not necessarily mean that they are good. I want the work to be judged by the quality not by quantity.
- In-class presentation makes students to become more confident in their presentations. This is good for our future careers.

## **Section 2 (33%)**

It would be best to let participants express their own voices. Like those in the first section, most students in the second section who favored this option mentioned that the number of views gained from YouTube was unfair, distorted, or even unethical. Some students were worried about the quality of the presentation and afraid that their work might be not worth being posted on YouTube. Some of their critical comments are as follows:

- In-class activities allow students to learn to know each other and exchange ideas. In-class votes are quite fair and transparent for all groups, while the YouTube views only reflect the number of clicks made by the same person. Personally, in-class activities are more useful.
- In-class presentation (including evaluation) is more advantageous and fairer than learning via YouTube because some students may be inconvenient to access the Internet. The number of views received is not transparent.

- In-class activities offer fair voting than the Internet views. On YouTube, the number of views can increase speculatively, thereby the number of views gained is unethical.
- The presentation on YouTube does not truly reflect the English proficiency, knowledge, or ability. I think in-class presentation practices should be more highlighted by adding more cases in different situations.
- In-class activities allow students to see the audience's behaviors and the class's response spontaneously. The exchange of ideas and comments is real, not exaggerated. More actions are brought into the classroom, which is quite different from YouTube.
- I believe that in-class activities allow students to participate more actively in the presentation. Students are sitting, watching others, and voting. This is much better than adding views on YouTube which can increase much more easily. It's not a good way to do or to give the fact/truth due to the fact that they can use many ways to increase the total views.
- In-class activities allow students to express themselves in the domain of knowledge applications, language usage skills, and self-introduction.
- The number of in-class votes is real according to the number of the present students in the real time. All in-class voters jointly perceive the atmosphere, teaching media, and interaction among students and between students and the instructor. The YouTube votes can't decide the real data.
- I don't want to use the number of views in selecting the winning group because the group which presents well may not win. The group which can present well may win because sharing the video on the Internet or any other media can be done quite easily. In-class vote is thus more preferable.
- Uploading the video on YouTube may be unable to measure the quality of the presentation because the number of views can increase by sharing link. Rather, in-class activity allows all to see the quality of the presentation of each group more clearly.
- Time used in preparing ourselves for the presentation is quite limited, thereby the work may not be good enough. The presentation thus should be done in class only and should not be posted on YouTube.
- In-class activities are not boring and fun being rewarded.
- All students get involved in the in-class activity. The number of views is not a good indicator for the best presentation.
- Students have ample opportunities to practice pronunciation, presentation, and aloud reading, thereby learning to know the rights and wrongs. YouTube has both advantages and disadvantages, but most views come from just clicking, not really watching the presentation or evaluating its quality.
- In-class presentation activity promotes expressiveness of students, but is not suitable for the class consisting of over 100 students. In addition, in-class votes may support and promote only students with higher English proficiency, but not those with lower to lowest. This activity thus may encourage only competent students to become outstanding rather than embrace all students.

- I prefer the in-class activity because over 100 students can show their potential, jointly do activities, and share attitude. The activity enables students to evaluate their own potential and try harder to fill their gaps.
- For the efficiency of the presentation evaluation, the in-class presentation activity is more direct to the point. This is because all participants jointly decide the winner and compare good presenters with the poorer. The uploaded files on YouTube are viewed by the voters who are not present in the classroom.
- In-class presentation activities enhance both listening and speaking skills. This can attract attention of the students and doesn't make them feel asleep and bored.
- It's unfair because the Group Cake Makeup had uploaded their presentation a week before the instructor did for other groups. The instructor should do this for all groups so that time is not a variable affecting the number of views.

In brief, the participants of both sections who preferred this option highlight the importance of fairness, spontaneity, close cooperation, active participation in class and among group members rather than on YouTube where everybody could see, but offered less face-to-face interaction. Respondents also valued class and presentation attendance as a means to practice English skills and exchange of ideas, thoughts, and experiences freely. Some even asked for such an in-class activity more.

The difference in terms of uploading time slightly affected the responses because there was only one person who stated such trouble. The following section reports the comments made by technological enthusiasts.

#### **b. Discussion on Option 2: Prefer English presentation as exchange of knowledge on YouTube**

##### **Section 1 (5.1%)**

Around 5% of the first section liked YouTube rather than the in-class activity. Only three explanations were provided by "*technogeeks*, a technology enthusiast" (Dudeney & Hockly, 2007, p. 9) as follows:

- I want to create a video file like an advertisement and add sounds rather than the in-class presentation which emphasizes only fun and produces unclear pictures.
- This is intended to exchange knowledge in a vast array, ubiquitous manner, and extensive publicity across the cyber world.
- Nowadays, the Internet is widely used and there are a lot of Internet users. Uploading the presentation onto YouTube allows exchange of knowledge to happen, enables diverse audiences to view our work, and invites comments from them for our improvements.

##### **Section 2 (4.1%)**

Only 4% of this section preferred the YouTube medium only. Despite such a few respondents who chose this option. The number is meaningful in the sense that it shows the trend of technogeeks. Below are some salient comments.

- YouTube allows me to practice English in various ways including listening, writing, and speaking. I just want the instructor to check my English script before giving a presentation. The sheets distributed in class should be bound for tidiness. It's a waste of time to go around and get the loose sheets one by one.

- YouTube is a medium for sharing knowledge. It allows students to receive comments or critiques from many people in various fields. We can bring those comments into our presentation improvement process in the future.
- The public can come and see the presentation. We can take the comments into our consideration and make our presentation better in the future.
- YouTube makes students to become more attentive because the video is open to the public, not limited to the class only.

From both sections, the answers, even few, are significant in the sense that Thailand is going to become part of the AEC in 2015, thereby this 5% from the first section and 4% from the second one can be seen as a signal of new generations who welcome comments from people around the world and become more and more open-minded. In other words, they feel positive towards the cutting edge of technology. This finding directly accords with many technological gurus in the 21<sup>st</sup> century (see Brandon, 2005; Crichton & LaBonte, 2003; Dudeney, 2007; Dudeney & Hockly, 2007; Frendo, 2005; Horton, 2006; Limlumlertkul & Liu, 2010; Pagram & Pagram, 2006; Martin, Parker, & Deale, 2012; Pufahl, Rhodes, & Christian, 2001, for instance) that learning via technology is unavoidable and irresistible.

Like other students who chose Option 3 in 6.3 below, students who preferred both pedagogical approaches have found that YouTube helped them to become outgoing and, simultaneously, encouraged them to perform better. This viewpoint accords with Hawthorne's effect that satisfactory performance can be created when people are overseen.

#### **c. Discussion on Option 3: Prefer English presentation both as an in-class activity and exchange of knowledge on YouTube**

While in-class activities only (Option 1) tend to be valued more because they ensure fairness, Option 2, despite its lower number, highlights the fact of modernity and technological absorption. This section has shown that a combination of both is preferable because students long for both real-life experience and share their thoughts to the global viewers. Some even mentioned that uploading their videotapes onto YouTube made them learn fundamentals of marketing like e-commerce. Some sample comments made by the first section are shown first.

##### **Section 1 (71.4%)**

- So fun and every member can join our presentation activities in the class and expand to others who can vote for our presentation too.
- In-class presentation may produce the fairer number of votes, but the number of views on YouTube may reflect the quality of the presentation which sparks more viewers' interest in the presentation.
- The in-class presentation highlights creativity without any impact of connections. YouTube focuses on connections. More friends, more views.
- In-class votes come from the impression on the presentation. Thus, the sequence of the presentation somewhat influences the number of votes. YouTube votes come from popularity or public relations. Both results come from different sources, so it depends on the objectives of votes.
- YouTube uploading can increase comments from outsiders about our work. These viewers come from assorted occupations, so their comments can help us improve our work in the future.

- In-class presentation allows the audience to see the preparation and attentiveness of presenters. The YouTube presentation requires a competent cameraman to record pictures and media, which is much more difficult. Both activities are thus interesting in terms of learning.
- In-class activities let the audiences to perceive the live atmosphere of presentations. On YouTube, the basic marketing principles, e.g. e-commerce, are learned.
- Both are interesting because the comments are made by both inside- and outside-class viewers.
- Each has pros and cons. In-class presentation let all group members to participate in the work. The audiences have a chance to learn how to present effectively from other groups as well. However, the vote result is made in a narrower mode. Votes on YouTube allow the outsiders to help judge the presentation. However, the number of views may not really reflect the number of viewers, just clickers.
- Gain new experiences both inside and outside class.
- In-class presentation activity allows the audience to see all preparations. The YouTube activity reflects the group's unity, attempts through an increase of views.
- In-class activity—prompt decision made by a small group; YouTube activity—long-term decision made by the public.
- I agree with this teaching method and both ways of presentation activities. This makes me feel that joining this class gives me more than knowledge.
- I like both ways. An interesting thing based on these two ways is that the in-class winner may not be the YouTube winner.
- The comments coming from both the class and the public can help add more perspectives.
- YouTube votes should have more control.
- In-class activity makes English not so boring and learning English from YouTube opens students' eyes to worldwide English.
- In-class vote is good because the audience's feedback is clear. However, the in-class vote may be based on fun rather than quality. Some may vote for their group however poor their presentation is. YouTube activity is also good, but it may be a result from sharing information or plenty of friends.
- In-class presentation creates fun and lightens the atmosphere. Uploading the presentation onto YouTube creates interactions among group members outside class. We became closer very fast because we mutually plan and present our group work.
- In-class presentation activity develops outgoing personality and enhances public speaking skills. Uploading the presentation on YouTube enables us to know the public impression.
- The preparation time should increase for another week. The video should show the presenters faces more clearly.

## **Section 2 (61.9%)**

Around 62% of the second section chose this option. This means that the majority of this section truly belonged to the modern world full of state-of-the-art technologies while firmly rooting themselves in the classroom-based pedagogy. In other words, they incorporated both traditional classroom and state-of-the-art online learning together. Their comments are shown below.

- Both are the best.
- In-class activities allow students to practice in front of the audience. So, they gain real-life experience. Uploading the video onto YouTube helps to gain more comments from the audience online.
- Both are ways of sharing thoughts in the form of presentation both inside and outside class. We can also attend and watch other groups' presentations, which are very useful.
- I like both kinds of the presentation activity because they are useful and knowledgeable. I can apply the knowledge gained to my daily life. The presentation activity also provides me a chance to familiarize myself with English usage. This activity thus allows me to develop my English skills, potential, and applications. It helps to encourage me to express myself or communicate more freely.
- The in-class activity is useful, whereas the YouTube activity attracts comments from others outside the classroom, which is also good. However, there should be some cautions in terms of rights and privacy. It is an activity in the institution. After uploading, anyone can come and see the video. Some presenters may not want to show off publicly.
- The in-class activity gets an immediate result and the result is direct. That is, the result accords the audience's mind. YouTube provides each group a chance to establish advertising strategies. Such techniques may prevent to evaluate the real satisfaction of the audiences.
- I like both ways, but the YouTube vote should be done in the long run, not in the short run. The number of views may be clearer in the long-term competition.
- In-class activity allows classmates to make comments. The YouTube activity allows the general public to critically comment. Students also learn to know how to work as a team in order to attract more people to view the presentation of their groups. I like both ways.
- I like both even though the number of views on YouTube may not accord with the fact.
- It's a way to allow students to jointly do an activity with other classmates in the classroom while allowing the general public to view our activity so that they see us in various forms. They can also join the activity by voting.
- In addition to the comments given by classmates, YouTube allows students to gain comments from the public. This allows students to learn both advantages and disadvantages of their posted presentation and such knowledge will enable them to improve their presentations in the future.
- I like both because they help me to develop my English skills. I can share the video and watch it repetitively in order to review my mistakes.

- More time should be given. The format of presentation should be assigned beforehand so that when being uploaded onto YouTube, all videos will have the same format and easy to understand.
- As for results of the presentation on YouTube, the presentation format should be more emphasized so that the format is suitable for viewing.
- I like the teaching method by incorporating both in-class and online activities. However, I don't like the way the number of views is used in deciding the winning group.
- In-class activity allows all students to actively participate and they become more enthusiastic and attentive to the class. The teaching and learning activity is not boring. I want the instructor to keep this teaching format. In addition, presentation uploading on YouTube encourages students to work harder and more efficiently.
- I like both of the activity—in class and uploading on YouTube because in-class activity emphasizes participation in other presentations and YouTube is world wide displayed.
- Both of them always make the students to participate in class. Moreover, they make the group of students know each other more and communicate more not only in class but outside class as well.
- The students knew beforehand that their presentation would be uploaded onto YouTube. This encourages the students to pay more attention and add more new ideas into their presentation. This is because our work is made public.
- They provide two-way communication.
- It's a way to share knowledge and information both in class and worldwide. Good idea!
- Add confidence to the presenter and feedbacks both in class and the public. More inspiration in giving a presentation.
- The in-class activity allows non-business students to learn new jargons and to become more confident. The YouTube activity opens a window for others to see us, share knowledge, and give useful feedbacks.
- Right now, the Internet becomes more and more important, so uploading a video onto YouTube allows other people to know what we are doing. However, the uploading method may sometimes experience technical problems, resulting in the stagnant number of views.
- This course covers a wide range of activities which make the class interesting, not boring. Good for further learning and self-development.
- I like both because they make the class fun. However, all students, not some, should be involved in the activity.

In short, the respondents who like both the in-class and the YouTube activities realize the growing importance of the Internet in their daily life. While they favor the social interaction which comes from group work, they embrace the global change in the area of technology, especially the Internet. Some even mentioned the technical problem arising from using the YouTube uploading application. Unlike the group which prefers only in-class activities, for this group, allowing the public to watch the in-class presentation videos and provide

feedbacks is seen as an encouragement rather than an obstruction. Despite the seemingly unfair number of views, respondents who prefer this option still have positive attitude towards the use of YouTube in the classroom. Such positive views include: personality improvement, English competency enhancement, active encouragement for better performance, and foundation for e-business, among many others. Next, Option 4 selection is quantitatively reported and qualitatively discussed.

**d. Discussion on Option 4: Dislike English presentation both as an in-class activity and exchange of knowledge on YouTube**

This option was the least selected by the respondents in both sections.

**Section 1 (0%)**

No one in the first section select this option. This may be concluded that most students loved the activity, whether in class or on YouTube. However, it can be also interpreted that they do not dare to show some resistance against the instructors who acted as the researchers in the present study. As noted by Lohsiwanont (2001), Thais preserve harmony and respect to authorities.

**Section 2 (1%)**

Outliers are always valuable and require scrupulous attention. Even though there was only one respondent in this category, it is worth mentioning his or her comments. The sole comment from a participant in Section 2 was:

“I like small-group activity. I think students gain more from working in a small group than a big one.”

As mentioned above, students are not culturally supposed to act against the teacher. As one can see in the answer, it does not look like that this student does not like the activity per se. However, as each section consists of around 120 students, it is quite impossible for the instructors to efficiently embrace all students. The fact that no one had known before that there would be a questionnaire handed out on the last day of class, and this questionnaire was distributed on the very last day can confirm a fact that, despite the huge class, this student kept coming to the class until the end of the course.

## **7. CONCLUSIONS, LIMITATIONS, & RECOMMENDATIONS**

Both the in-class and YouTube activities are found to be useful in the respondents' English learning. In spite of some serious difficulties, plenty of students positively regarded YouTube as a way to practice and sharpen their English skills, build up self-confidence, share knowledge & experiences, and provide them with a window of opportunity to receive public feedbacks.

It is also interesting to learn that though these young adults are familiar with modern technologies, some still have problems with YouTube or the Internet access, whereby making them prefer the traditional classroom-based pedagogy. Also, despite technological abundance in a developing country like Thailand, it may be too soon to conclude that all urban citizens fond of or excel at technology, can catch up with its cutting edge, or even have equal Internet access. Rather, the digital divide still exists in Thailand even in the urban area.

Although most respondents prefer a combination of the in-class and the YouTube activities, doubts are still legion, especially in the area of reliability, complexity, and system requirements of YouTube. Whether selecting Option 1 (in-class only) or Option 3 (a combination of the in-class and YouTube activities), many students mentioned some negative experiences when trying to increase the number of views for their groups; therefore, they may have some dislike, uncertainty, or even fears of technology—here YouTube. So, such technological introduction should be performed by teachers with due caution, profound knowledge, and deep sensitivity (*see* Dudeney, 2007; Dudeney & Hockly, 2007; Frendo, 2005, for instance).

As complex as it may be at the first start, the total number of respondents who preferred technology (a combination of Options 2 and 3) is greater than those who preferred the other two options. This is meaningful to all educators and instructors in planning their futuristic course content and activities. Like what many participants mentioned, technology makes their learning more fun and interesting. Significantly, the saving-losing face culture existing in Thailand for a long time gradually disappears from this young generation. Likewise, despite the personality trait of introversion among Thai students, the respondents mentioned that they became more outgoing and confident after joining the presentation activity in class and posting their videotape on YouTube.

The influence of Hawthorne's effect of being watched is also proved to be solidly constructive in the current study. A significant number of respondents stated that YouTube allows them to trace back how they had given their presentation. Also, they felt that they had to be more attentive and work harder because the video would be shown to the world, not in their class only. A student who preferred both ways of learning wrote, "The in-class activity allows non-business students to learn new jargons and to become more confident. The YouTube activity opens a window for others to see us, share knowledge, and give useful feedbacks."

Technology has apparently evolved around and gradually intruded in language pedagogy for centuries. As such, people involved in the field should embrace it while pointing out both advantages and disadvantages to our learners. We need to remind ourselves that technology can be used to enhance language teaching and learning. This paper is only one of the preliminary studies to ascertain that technology is keenly anticipated.

## 8. NOTES

We are grateful to Boonchai Hongcharu for allowing us to develop, provide, and improve an English intensive course in our own way. This academic freedom enables us to create non-threatening and lively environs for all our students who will be the future of our nation and the global community. Heartfelt appreciations also go to the *Proceedings of the Fourth Asian Conference on Education (ACE 2012)* taking place in Osaka, Japan during October 24-28, 2012. Full responsibility for any remaining shortcomings is entirely our own.

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*Feasibility Issue of Form-Focused Instruction*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

**Key words:** form-focused instruction; error corrections; task effect; teacher differences

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## 1. Introduction

Iwai and Kawamoto (2011) raised the feasibility issue of teachers using form-focused instruction (FFI) through feedback, particularly whether teachers are able to employ this method easily and unconditionally. Although there are sufficient amount of research that FFI is effective for students to notice their grammatical errors (e.g., Ammar & Spada, 2006; Norris & Ortega, 2000), the researcher feels that teachers cannot achieve FFI successfully, because there are other considerations that teachers have to deal with in the classroom. Therefore, the main purpose of this study is to find out whether teachers are able to FFI under any conditions. The central purpose of this study is to examine whether it is feasible for all teachers to implement FFI in their classrooms. Moreover, this study investigated whether teachers were able to draw students' attention intentionally and effectively to students' errors by providing linguistic feedback while engaged in meaningful language use. In the next section, I will briefly discuss the empirical studies that have been exploring this issue.

## 2. Literature review

According to Ellis (2001), FFI comprises the classical approach, focus-on-forms (FonFS), and focus-on-form (FonF). In the classical approach, such as Grammar Translation Method, this was designed to focus on memorizing grammar rules and translate text word-for-word. FonFS approach focuses on the aspects of all grammatical forms, which includes Audiolingual Method. In contrast, FonF refers to an instruction technique in which the attention to form or forms must be brief and unobtrusive. The key feature between FonF and the other former two approaches is that a main emphasis of FonF is not sacrificing on meaning. By narrowing the definition of FFI, I use Spada's (1997) definition as "any pedagogical effort which is used to draw the students' attention to language form either implicitly or explicitly" (p. 73).

Among the very few studies dealing with the teacher issue of FFI, two studies are referred to. Comparing the experienced and inexperienced teachers, Pica and Long's (1986) study examined the teachers in terms of their ability to modify input and interaction with their students. They examined teachers' use of questions, self-repetition, confirmation checks, and clarification requests. From their findings, they found quantifiable differences between the two groups, i.e., the experienced teachers being more skillful in their use of the target language.

In another study by Mackey, Polio, and McDonough (2004), they compared the experienced and inexperienced teachers in terms of their use of FFI techniques. They found that the experienced teachers used higher frequency of FFI techniques than the inexperienced teachers. The results of the two studies above imply that there is a certain teacher factor that affects the success of implementing FFI in their classroom, and substantial training is necessary for teachers to acquire skills to employ FFI. Although these studies provided a great deal of insight as to teachers' roles in FFI in an ESL context, they have not shown whether FFI can be extended in an EFL setting. In addition, it is not clear whether their findings have shown that FFI requires targeting a selected students' error or errors (FonF) rather than errors in general (FonFS).

While there are a few studies tackling the issue of teachers able to employ FFI under any condition, there are two which were conducted under content-based instruction. Content-based

instruction is designed to teach students about a particular topic that is taught in the L2. The first is Pica's (2002) study that investigated two highly experienced teachers teaching English of adult classes using literature, film, and American culture as content. She examined the effects of feedback, negotiation, and input in a meaning-based context in order to examine if teachers could assist students with difficult forms and structures. The study revealed that the teachers and students had interesting and meaningful discussion that did not require students' accuracy, since the classroom discussions encouraged opinion sharing and allowed students to express their views on the topic.

Zyzik and Polio (2008) investigated whether incidental FFI, students say something erroneous and then teachers correct the form, was effective in advanced literature courses. They examined three tenured-stream faculty members who were trained in literacy and cultural studies specializing in some aspects of Spanish or Latin-American literature. None of these instructors specialized in applied linguistics or language teaching. From their results, Zyzik and Polio noticed there was a lack of interaction between the teachers and students, because the teachers dominated the talk. When students had the opportunity to speak, the teachers provided corrected forms immediately in order for the students not to feel threatened or embarrassed by their errors. Finally, they also felt that the teachers avoided cluing as to where and what the students' errors were, since these types of feedback were lengthy and the teachers faced time constraints to cover the materials within limited time spans. The common factor of this study and Pica's (2002) is that they question whether or not FFI is feasible for teachers to employ FFI under any conditions.

Taking into account that there are very few empirical studies focusing on teacher providing FFI under any conditions, this study investigates the feasibility issue centering on the three research questions below:

RQ 1. Do teachers change their way of providing form feedback under any instructional conditions?

RQ 2. Do teachers differ from each other in the way they provide form feedback?

RQ 3. Do different task conditions affect the way teachers provide form feedback?

### 3. Method

#### 3.1 Materials

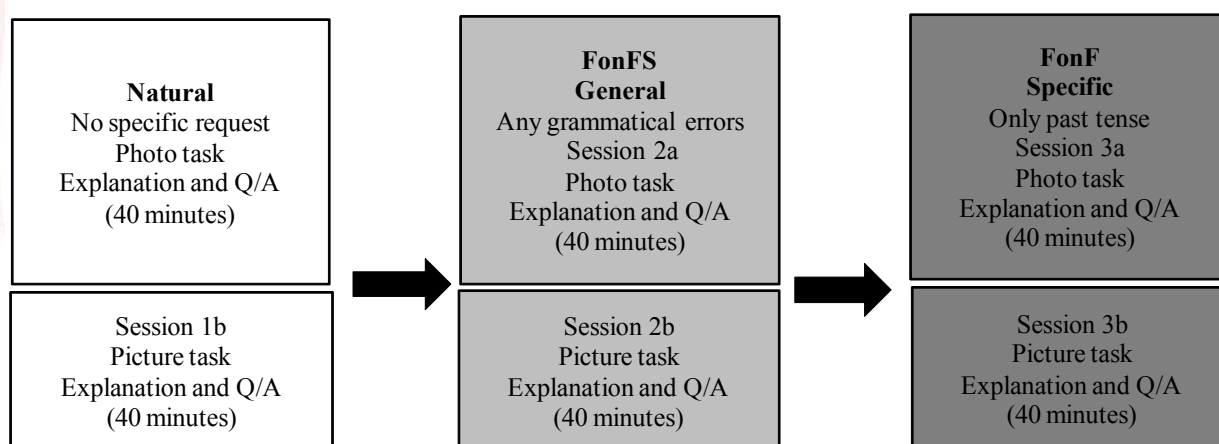
Two picture description tasks, students brought their personal photos (a Photo task) and a daily routine narrative which consisted of pictures of natural sequences of events (a Storytelling task), were used for data collection of teacher-student interaction. The reasoning behind using these tasks was that past events can be used to direct on the past tense forms. In addition, there are three reasons why the past tense was selected as an observation target of this study: 1) many studies used the past tense for this type of research (e.g., Doughty & Varela, 1998; Ellis, 2007; Ellis, Loewen, & Erlam, 2006); past tense is used regularly in conversation; and students often make errors while using past tense (Bitchener, Young, & Cameron, 2005).

For these tasks, each student was engaged in two task conditions. The first was the Explanation condition, in which the student described their picture for one minute. The second was the Q/A condition, where the teacher was requested to ask three questions that I prepared (pre-set questions), and three additional questions were asked by the teachers.

### 3.2 Research Design

Data were collected in February 2008 and January 2009, under quasi-experimental conditions. These conditions are shown below in Figure 1 into three separate instructional conditions. In the data collection, the teachers participated in three different 80-minute instructional conditions (Natural, General, and Specific) individually. In the “Natural” session, there no request was made to the teachers. The “General” session was designed to investigate the grammar forms they corrected – a FonFS condition. Here, the teachers were requested to correct all grammar errors. In the “Specific” session, the teachers were requested to pay attention only to students’ errors in the past tense selectively – a FonF condition. This was the crucial session for this study to observe whether teachers were able to switch from FonFS (focusing on errors in general) to a FonF (focusing on a selected error or errors). The teachers engaged in three instructional sessions, each session involving the same students and two different 40-minute tasks.

**Figure 1: Instructional conditions**



### 3.3 Participants

The participants were comprised two NESTs) (Native English Speaking Teachers), two NNESTs (Non-Native English Speaking teachers), two inexperienced NNESTs; and a total of 24 students. Using the pseudonyms throughout this study is described below:

- 1) John and Mary for the native-English-speaking teachers;
- 2) Taro and Hana for the Japanese English teachers; and
- 3) Fumi and Kayo for the inexperienced teachers.

John, Mary, Taro, and Hana had more than five years of teaching experience, and Fumi and Kayo each had less than one year of teaching experience. There were twenty-four university students who participated in all three conditions. Each teacher had the same four students in all three

instructional conditions in order to facilitate paring of the students, and to observe if there were any changes in the students' utterances in each condition.

#### 4. Results

This section explores the answers of the three research questions that were presented in Section 2. Each section will assess the data with one of the research questions based on the analysis outcome of the Adjacency pairs (ADJs), form-focused feedback (FFF), and meaning-focused feedback (MFF). First, instructional change will be presented to show whether teachers are able to change their instruction, particularly between the General and Specific. Second, the differences among the six teachers will be presented. Finally, the outcomes of the quantitative analysis of task conditions, Explanation/Q/A, will be presented.

##### 4.1 Instructional change

The analyses of the dependant variables presented in this section are intended to describe teachers' instructional change under the three conditions (Natural → General → Specific). Tables and charts illustrating the frequencies are included to provide a description of each condition. The following section will specify the frequency counts of ADJs for all six teachers.

##### 4.1.1 Frequency counts of ADJs

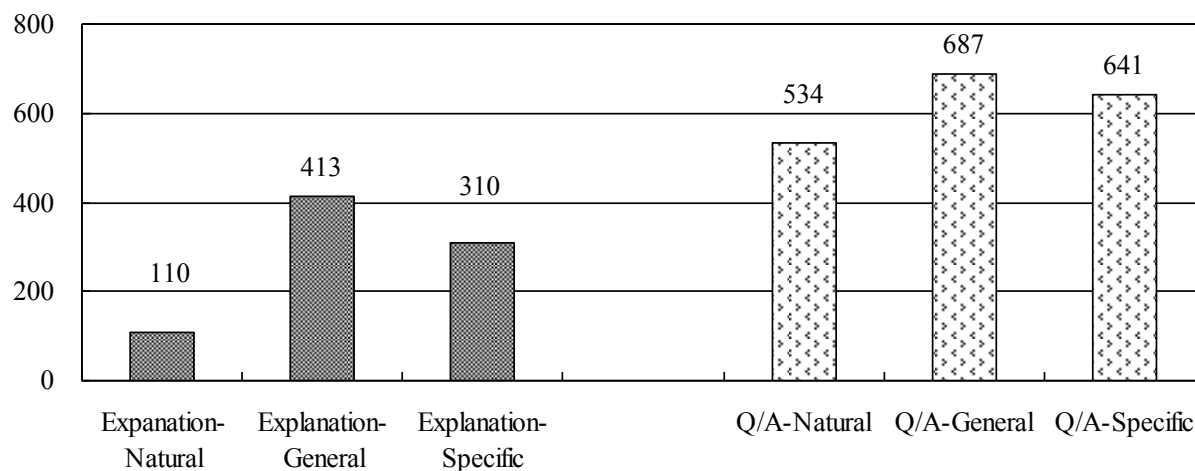
The ADJs illustrate whether the teachers changed their instruction and interaction with their manners under the three interactional conditions. An ADJ is an example of a conversational turn-taking (e.g., Schfirrin, 1987), and one ADJ is composed of two utterances between two speakers. In this study, the beginning of the ADJs was from the students' utterance that provoked a response from the teachers. The example below constitutes one ADJ:

Student: I feel happy. (**Error – past tense**)

Teacher: Oh you felt, felt happy. (**Form-feedback**)

The frequency of ADJs use by the teachers is plotted on the graph for the Explanation and Q/A conditions in Figures 2 below. In the Explanation, the teachers changed their instruction between the Natural to General, and Natural to Specific. The graph shows that there was a decrease between the General and Specific, which indicates the teachers were able to focus on a specific form in the Specific condition. Although there is a similar pattern in the Q/A, there was a slight decrease between the General and the Specific. Therefore, the teachers could, to some extent, change their instructional pattern.

Figure 2: ADJs in Explanation and Q/A



Since a normal distribution of the data was doubtful and the sample size was small, the data were subsequently submitted to a nonparametric test, and this was to examine if there was a difference throughout the sessions. First, a Friedman test was conducted to examine if the means of ADJs in three sessions shifted significantly. This test was selected since there were more than two task conditions and the same participants were used in all three instructional conditions (Larson-Hall, 2010). The results revealed that the means were significantly different in the three instructional conditions in the Explanation ( $X^2 = 7.91, p = .02$ ), but not in the Q/A ( $X^2 = 2.00, p = .37$ ).

Second, by using another nonparametric test, the Wilcoxon Signed Rank test, a follow-up comparison between the two different task conditions, was made. The result revealed that in the Explanation, there was a significant difference between the Natural and the General ( $z = -2.02, p < .04$ ), and the Natural and the Specific ( $z = -2.20, p < .03$ ). However, no significant difference was found between the General and Specific sessions ( $z = -.42, p < .67$ ). For the Q/A conditions, there was no significant difference between the Natural and General ( $z = -1.57, p < .116$ ), General and Specific ( $z = -.73, p < .46$ ), and Natural and Specific:  $z = -1.75, p < .08$ . This means that in the Explanation, teachers interacted with their students more actively in the General and Specific than in the Natural. This also indicates that in the Q/A teachers did not change their interaction significantly in all three conditions.

#### 4.1.2 Frequency counts of FFF and MFF

This section focuses on whether the teachers were able to change their feedback under the three instructional conditions. In Excerpt 1 below is an example of a FFF. Excerpt 2 is one example of an MFF in which the teacher understood the student's utterance:

Excerpt 1:

Student: She want to meet her friend.  
Teacher: OK. Yeah, she, maybe she wanted.  
Student: Wanted to meet her friend.

Excerpt 2:

Student: Especially Japanese...take pose peace, when we are taking . pictures,  
and if you take pictu, when you take pictures . . you take some pose.  
Teacher: Ah~, yeah, we just say "cheese."

Figures 3 and 4 below show how the teachers performed in the Explanation and Q/A using the total frequency counts. Figure 3 illustrates that the Natural condition has significantly fewer FFFs compared to the General and Specific conditions (Natural < General and Specific) in the Explanation and Q/A. Between the General and Specific conditions, there is little difference in the Explanation, and a slight decrease in the Q/A.

Figure 3 FFF in Explanation and Q/A

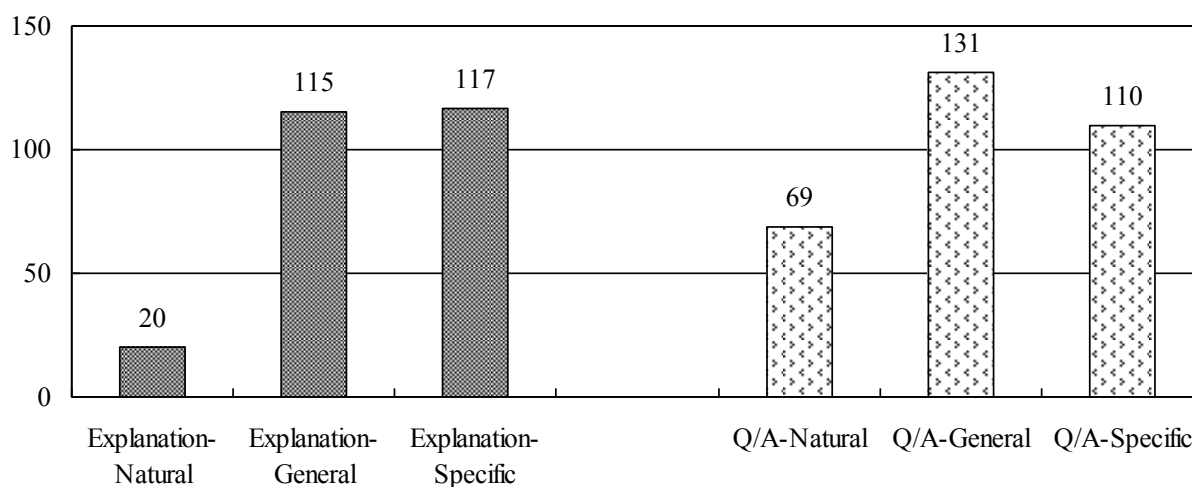
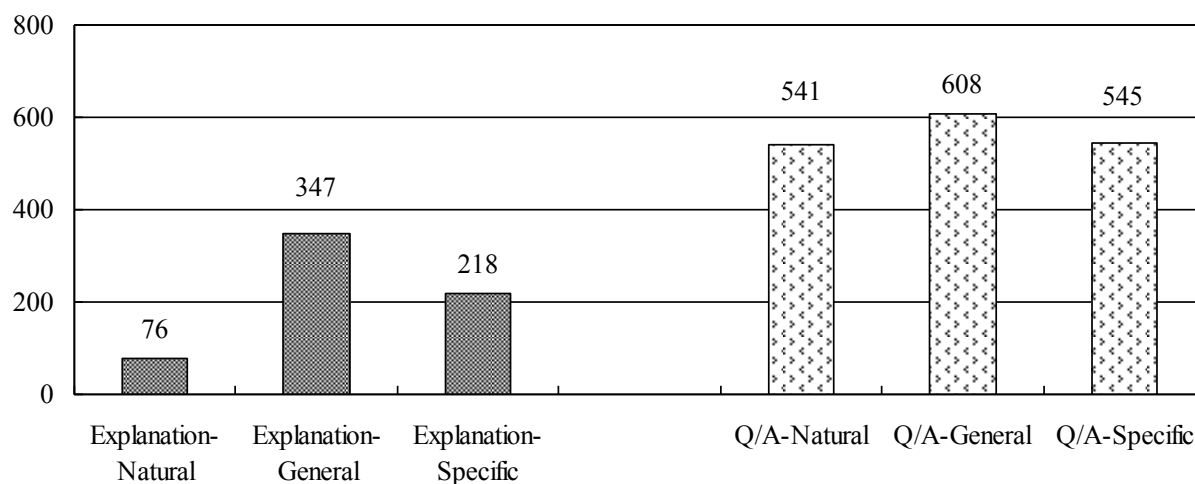


Figure 4 below clearly shows that there is a difference between the Natural and the other two conditions. It also illustrates that during the Q/A, there was no significant effect in all three conditions. There should have been a significant decrease in the Specific condition in the Explanation and Q/A since the teachers were supposed to focus on the form-based feedback.

Figure 4 MFF in Explanation and Q/A



In this analysis, the same nonparametric tests, used in the ADJs, were applied to examine if there was a significant difference across three sessions for both the FFF and MFF. First, the results in the FFF of the Friedman test reveal that there was a significant difference for the FFF,  $X^2 = 2$ ,  $p < .01$  in the Explanation condition. However, there was no significant difference in the Q/A,  $X^2 = 2$ ,  $p = .11$ . This reveals that the teachers were able to change their way when they provide form-based feedback in the Explanation, but there was no effect during the Q/A.

Using the Wilcoxon Signed Rank test in the Explanation condition, there was a significant difference between the Natural and General at  $z = -2.20$ ,  $p < .03$ , and between the Natural and Specific at  $z = -2.21$ ,  $p < .03$ . Yet, for the Specific and General, there was no significant difference at  $z = .92$ ,  $p = .92$ .

Second, the MFF counts from the Friedman test showed that there was a significant difference,  $X^2 = 2$ ,  $p < .03$  in the Explanation. However, there was no significant difference in the Q/A,  $X^2 = 2$ ,  $p = .31$ . As for the Wilcoxon Signed Rank test in the Explanation, there was a significant difference in the Natural/General,  $z = -2.20$ ,  $p < .03$ , and Natural/Specific  $z = -2$ ,  $p < .05$ . There was no significant difference between the General and Specific,  $z = -.94$ ,  $p = .34$ .

Overall, the teachers had the tendency to focus more on the meaning-based feedback than on form-based feedback. There also was no effect between the two crucial conditions (General and Specific) where the teachers were supposed to focus from general forms (FonFS) to a particular form (past tense - FonF) both in the Explanation and Q/A. This shows that the teachers differentiated their frequency either in FFF or MFF more so in the Explanation than the Q/A. In other words, during the Q/A, they could not restrict their attention only to form-related errors, and this would imply that it was not easy for them to focus their attention to errors while engage in a meaning-based interaction.

#### 4.2 Teacher difference

The outcomes of the analysis on teacher difference will be examined in this section. The following section will provide the frequency counts of ADJs for all six teachers.

#### 4.2.1 Frequency counts of ADJs

The data reported in this section show that the teachers used different frequencies of ADJs when giving instruction under the three instructional conditions, particularly under the General and Specific conditions. The frequencies of ADJs used by the teachers are plotted on Figure 5 for the Explanation and Figure 6 for the Q/A conditions. These graphs show that Taro used the highest number of ADJs compared to the other teachers in all three instructional conditions. In the Explanation condition, Taro, John, and Kayo used more adjacency pairs in General since they had the tendency to give more feedback on errors they felt needed to be corrected. However, between the General and Specific conditions in the Explanation the difference was far higher for John (80.0) than for Taro (49.0). In contrast, Taro (54.0) was much higher than John (12.0) during the Q/A. As for Mary and Hana, they used more ADJs in the Specific than in the General; whereas Kayo was almost the same as them throughout the Explanation and Q/A. Fumi showed hardly any change in all three instructional conditions.

Figure 5 ADJs by teachers in Explanation

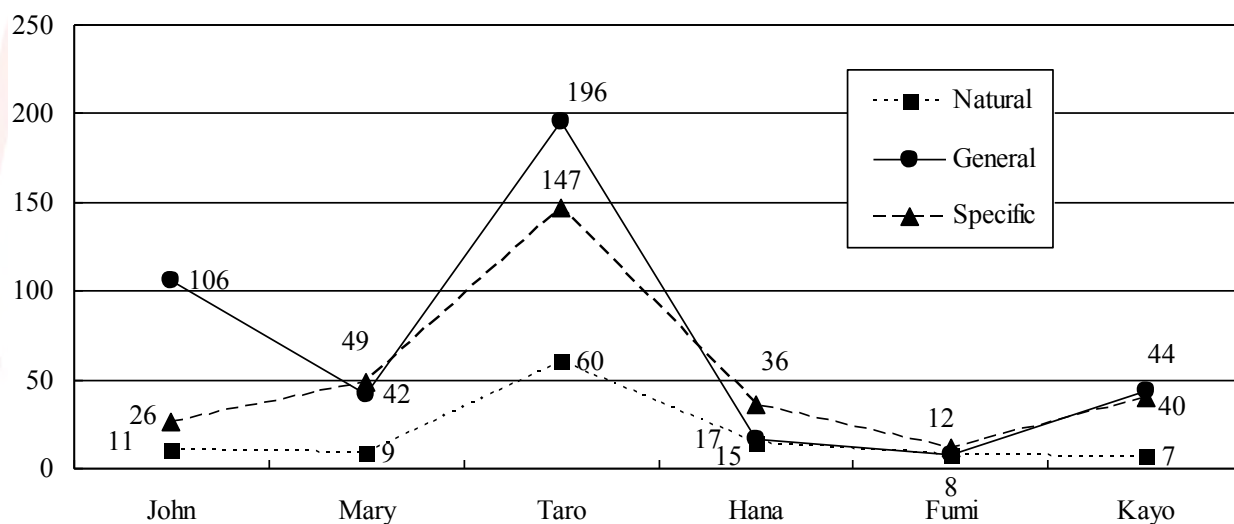
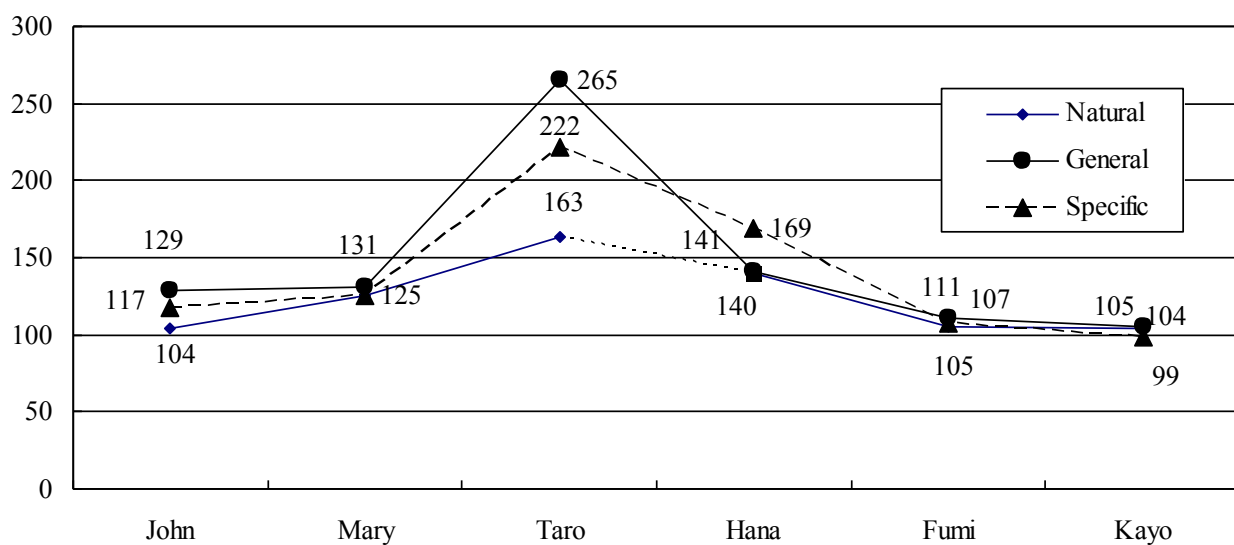


Figure 6 ADJs by teachers in Q/A



In the Q/A condition, Taro, John, and Mary interacted with the students the most in the General; whereas, Hana interacted with her students the most in the Specific. Fumi, and Kayo were more or less the same throughout the three instructional sessions.

To summarize, among the six teachers, Taro's ADJs outnumbered the other teachers in all three conditions. John's total counts increased from Natural to General, and from Specific to General, which was similar to Taro with far fewer counts. Mary and Hana were alike in all three conditions. The inexperienced teachers, especially Fumi, were not as active in their interaction as their experienced counterparts.

#### 4.2.2 Frequency Counts of FFF and MFF

The frequency counts of FFF and MFF will present which teacher had the tendency to focus either on form- or meaning-based instruction or both. In addition, this section will show how different each teacher was when providing feedback.

Examining the teachers in the Explanation condition, shown in Figure 7 and 8, Taro used both the FFF and MFF the most, compared to the other five teachers. He used both the FFF and MFF the most in the General condition, followed by the Specific and the Natural. John had a similar pattern, where he used FFF and MFF the most in the General. However, Mary and Hana were opposite to both male teachers, using FFF more in the Specific than in the General. Regarding MFF, they were different in that Mary did not change much in the General and Specific conditions, and Hana scarcely made any changes in all three instructional conditions. As for the inexperienced teachers, Kayo was similar to Mary and Hana in the FFF, but was similar to Taro in the MFF. Fumi used more FFF in the Specific, but made no changes in the MFF.

Figure 7 FFF by teachers in Explanation

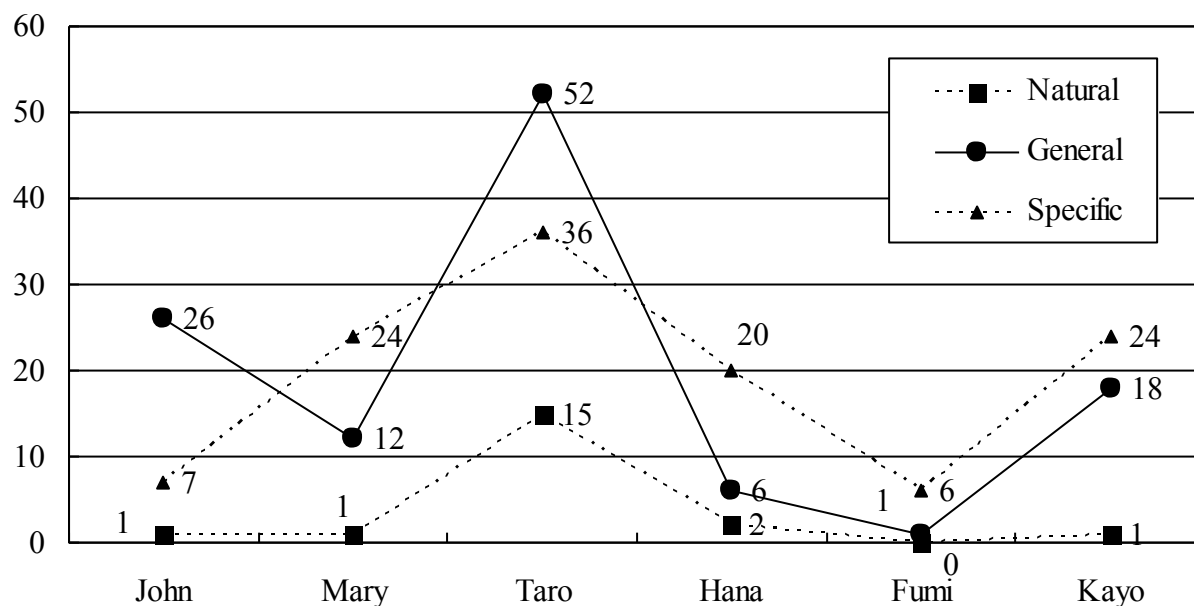


Figure 8 MFF by teachers in Explanation

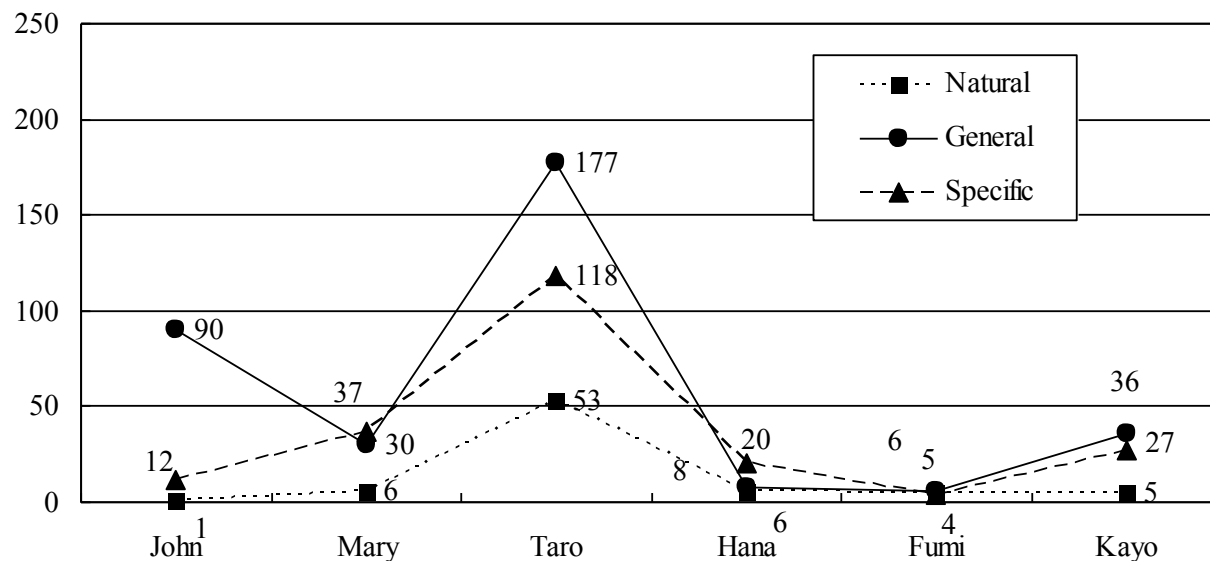


Figure 9 presents the FFF in the Q/A conditions of the six teachers. Taro showed the highest frequency of FFF. Taro, John, and Kayo used FFF in similar patterns in all three conditions, progressing from the lowest to the highest frequency. In other words, the Natural had the lowest frequency, followed by the Specific, and finally the General that had the highest frequency of FFF. Mary and Hana were opposite to them, using FFF the most in the Specific condition and then the General condition. Fumi was less active than the other five teachers in all three conditions.

Figure 9 FFF by teachers in Q/A

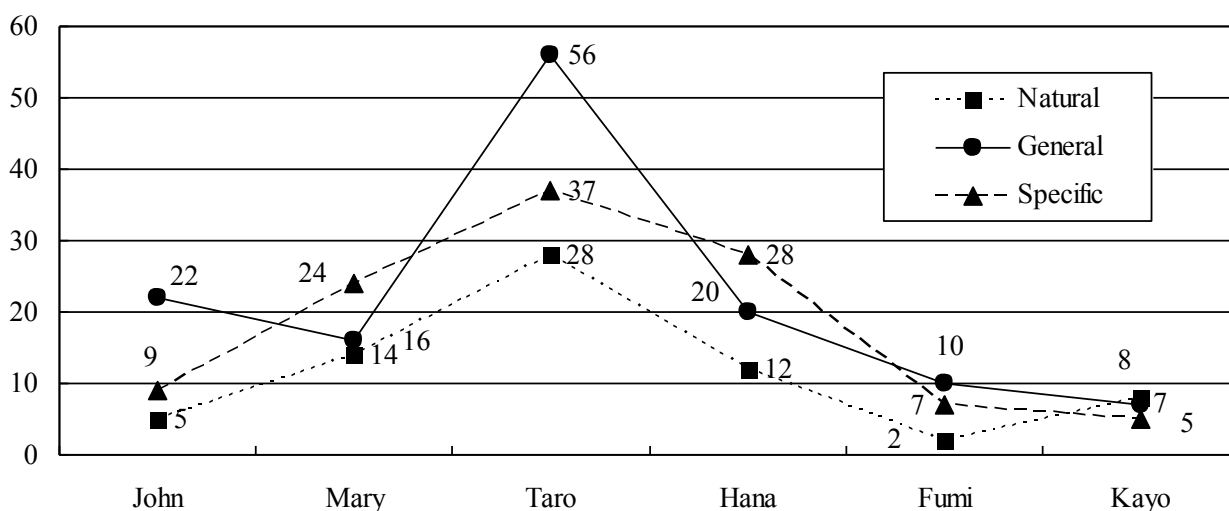
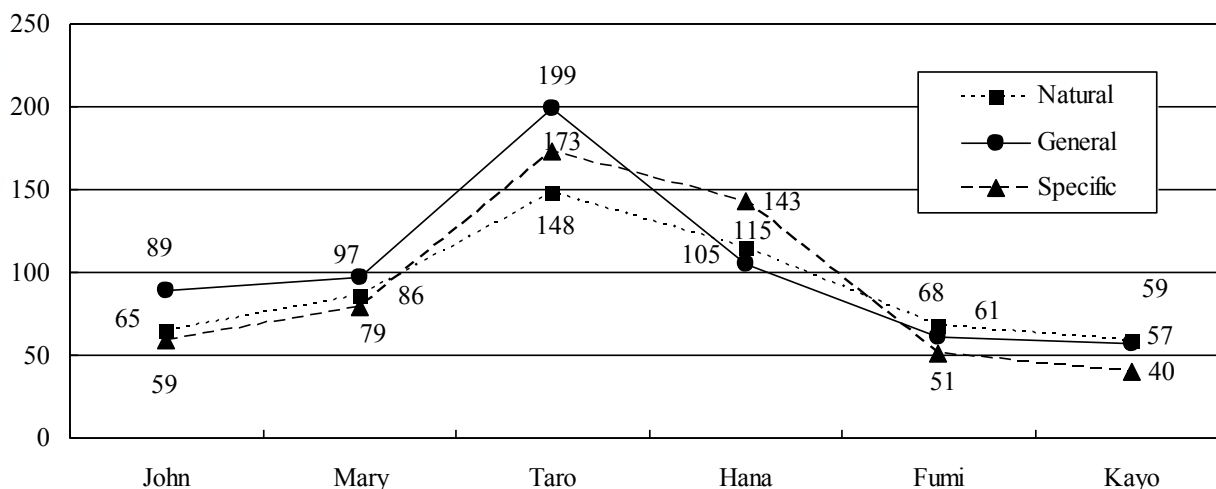


Figure 10 shows the MFF in the Q/A condition. Here, Taro had the highest frequency, followed by Hana. However, Taro used more MFF in the General, whereas Hana used it more frequently in the Specific condition. John and Mary used MFF the most in the General. The inexperienced teachers, for the most part, seemed to provide very few MFFs in any of the three conditions.

Figure 10 MFF by teachers in Q/A



In sum, in the Explanation and Q/A condition, the teachers' individual FFF and MFF patterns were similar, which indicates there is a teacher difference between the male and female teachers. For example, Taro and John presented similar feedback patterns in that they provided the most FFF and MFF feedback in the General, then in the Specific. Kayo was somewhat similar to the male teachers. However, Mary and Hana provided their feedback in the Specific, and then in the General. Finally, Fumi provided the least FFF and MFF out of all the teachers.

#### 4.3 Task conditions

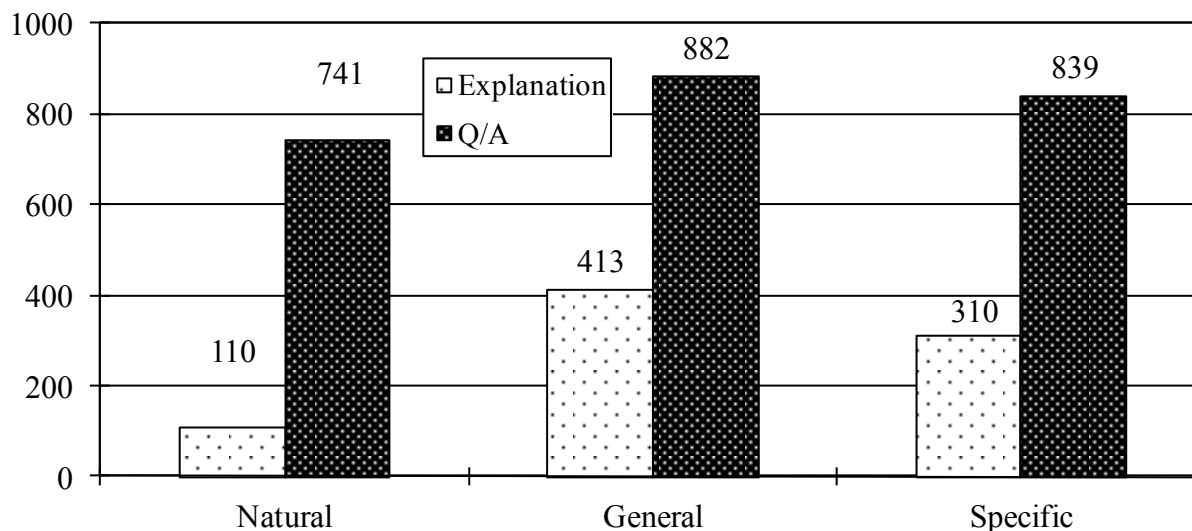
This section will address the question of whether there was a task difference, based on one comparison: Explanation and Q/A.

### 4.3.1 Explanation and Q/A Conditions

#### *ADJs*

This section will show whether teachers' interaction style was affected by the two task conditions. The frequency of ADJ use by the teachers is plotted on the graph in Figure 11. It reveals that the General condition had the highest number of ADJs in both Explanation and Q/A. The lowest number of ADJs was used in the Natural for both.

Figure 11 ADJs of Explanation and Q/A



Finally, the Wilcoxon Signed Rank test was used to compare the two conditions, Explanation and Q/A. The results revealed that there was a significant difference between the Explanation and Q/A in the Natural,  $z = -2.21, p < .027$ , the General,  $z = -2.20, p < .028$ , and the Specific,  $z = -2.20, p < .028$  – Specific). Putting all the results together, there is a significant effect on the way the teachers interact with their students in the Q/A than in the Explanation. In the Explanation, teachers were expected to listen to the students' monolog; however, there were times the teachers had to ask questions to clarify the students' utterance, or they provided some grammatical feedback. In the Q/A, it also seems that interaction played a strong role in assisting students to overcome their grammatical errors. This was the condition the teachers were expected to ask many form- and meaning-related questions to their students.

#### *FFF and MFF*

The question whether the Explanation and Q/A have any effect of teachers' providing FFF and MFF will be examined in this section. The frequencies of FFFs in Figure 12 below, it can be seen that teachers provided more FFF in the Q/A conditions than in the Explanation during both the Natural and General conditions. However, under the Specific condition, the teachers provided more FFF in the Explanation than the Q/A. As for the MFF (Figure 13), the Q/A had the highest frequency counts compared to the Explanation in all three conditions.

Figure 12 FFF of Explanation and Q/A

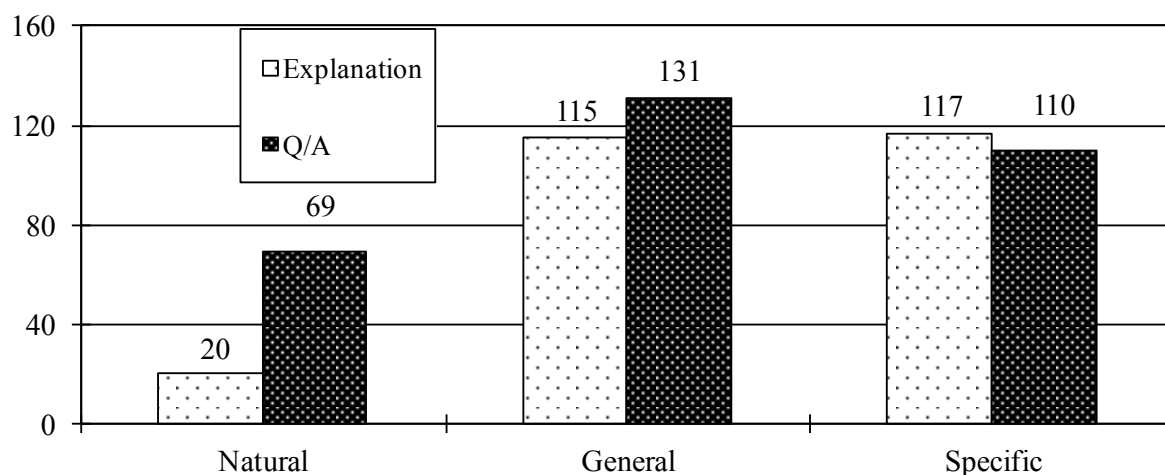
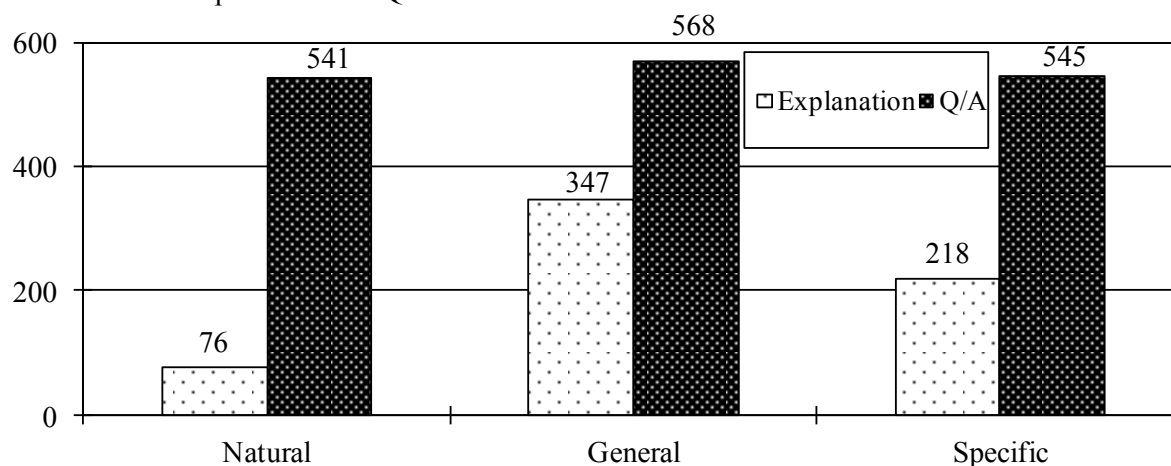


Figure 13 ADJs of Explanation and Q/A



Concerning the Explanation and Q/A conditions, there was a significant difference in the FFF between the Explanation and Q/A during the Natural condition ( $z = -2.21, p < .03$ ); however, there was no significant difference during the General ( $z = -.74, p = .46$ ), and Specific ( $z = -.68, p = .49$ ). Regarding MFF, the Natural and Specific conditions had significant effect between the Explanation and Q/A at  $z = -2.20, p < .028$ , and  $z = -2.21, p < .027$  correspondingly; however, there was no significant difference in the General at  $z = -1.36, p = .17$ . The results indicate that in the Natural condition, the teachers were listening to the students during the Explanation since no request was made for them to provide feedback. In the General and Specific, the teachers were more aware that they had to provide form feedback, which was why teachers were negotiating more with their students during the Explanation.

## 5.0 Discussion

The first research question concerns whether teachers were able to change their instruction in each of the instructional conditions. The teachers in this study changed their way of interacting with their students between the Natural and the other two conditions, General and Specific; however, this was not the case between the General and Specific. In the Natural condition, the

teachers were mostly listening to their students without interrupting them unless there was a problem with their vocabulary. But when the teachers were requested to provide feedback in the General and Specific conditions, then they became more aware of the students' errors than before.

In terms of the FFF and the MFF, the teachers were able to change their instruction style in each of the instructional conditions in the Explanation and Q/A. In addition, the MFF was far more frequent than the FFF in all three instructional conditions, which indicates that meaning-based negotiation was done more often than form-based negotiation even though the General and Specific were concerned with form-related errors. This also may suggest that the teachers were more cognitively loaded in the Q/A than in the Explanation. During the Q/A, teachers had to listen to the students utterances, think about their questions, and figure how to provide feedback. Consequently, they could not always detect the students' problems, both in meaning and forms, as well as they could in the Explanation, where they did not have to think about what to ask the students.

When considering the first part of the second research question regarding teacher difference between the NESTs and NNESTs in their use of FFI, the results suggest that when comparing the frequency counts, there was no NEST/NNEST factor. Instead, there seemed to be more of a male/female difference. The male teachers tended to focus on grammatical form and use clues as to what and where the errors were, and the female teachers tended to focus toward meaning by repeating students' errors in the correct form.

As for the second part of the research question regarding the difference between the experienced and inexperienced teachers, the results indicates there were three causes for the large difference between the experienced and inexperienced teachers. The first was attributed to inexperienced teachers' unfamiliarity with the teacher-student interaction. The second reason was the large difference in the experienced and inexperienced teachers' tactics in asking questions, which required students to extend their thinking and encouraged them to increase their interaction with the teachers. Open questions promoted a collaborative mode of discussion that the experienced teachers often used. Because of this the students became more involved with the conversation. In addition, the experienced teachers frequently used information seeking questions in order to stimulate authentic productions, during which they received long and grammatically complex responses from their students. The inexperienced teachers' interaction with the students was rather simplistic, mainly consisting of Yes/No questions. In addition, the interaction between them and their students typically utilized a simple question-and-answer pattern. Finally, the third cause is the lack of skill and experience in noticing students' errors and providing corrective feedback in their utterances (Andrews, 1994; Numrich, 1996).

In regards to the third research question, whether there was a task effect of teachers' instruction in the Explanation and Q/A, the answer is affirmative since the teachers interacted and provided feedback more in the Q/A than in the Explanation. One reason for this is the interactional features of a two-party relationship, when two participants are requesting and supplying the information, as opposed to a one-party, one participant supplying the information (Pica, Kanagy, & Falodun, 1993). The second reason is that the Q/A is regarded as a *focused task* (Ellis, 1991)

which is aimed to promote communication and elicit production of a particular linguistic form, in this case the tense-related forms. In other words, the teachers used the Q/A session to focus on a form-function-meaning relationship. This resulted in the most negotiation of meaning since the students had to repeat or rephrase in order to make sure their utterances were accurate and understood. Another explanation is teachers asked questions, requiring the students to provide more details, during the Q/A session since students simply explained the events in the pictures in the Explanation session.

## 6.0 Conclusion and Limitations

While the present study sheds light on some important issues in FFI, it has several limitations that should be addressed with the hope that they will be improved in future studies. First, this is an exploratory study with a small group of six teachers. I hope to continue focusing on teachers using FFI by expanding the study to include more participants and other variables. Having a larger number of participants will make it possible to examine other variables, such as the gender, age, and education background. This will increase the reliability and give more concrete evidence about effective methods of providing form- and meaning-based feedback. The second limitation was that the researcher did not investigate other possible verbs and grammatical structures. Further comparative study may consider using a target structure that is more complex which would be obvious for students and have a high frequency of use.

In conclusion, the results of this study reveal that teachers cannot automatically use FFI in their classroom. In the investigation, FFI researchers should take into account the individual differences among teachers in terms of experience. Also, in order for teachers to provide effective form-based feedback, they may need more thorough training and more teaching experience.

## Acknowledgement

This study was supported by the research grants offered by Hiroshima City University (2008 and 2009 Special Academic Research (General Studies)). I would like to thank Chiaki Iwai, Carol Rinnert, Nobuyuki Aoki, and Ian Willey for their help to make this paper possible.

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*Toward an Authentic Leadership in Hong Kong Sub-Degree Education: Personal Philosophical Approach*

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Official Conference Proceedings 2012

Abstracts

Given that the concept of community college in Hong Kong has only been introduced 10 years ago, with the new “3-3-4” education structural reform, the leadership in community college will become more challenging. In this paper, the aim is to provide a personal philosophy on how educational leaders should lead in community college settings given the highly diverse student backgrounds. The perspective of why we, as educational leaders, should reflect, reconstruct, and reengineer on community college leadership will be discussed. We will give insights on how different it is between leading in university and in community college, particularly in Hong Kong. Common issues and difficulties encountered by top managements, supporting staff, teachers, and students are identified and explained. The importance of relationship and dialogues in our context of building a true community is presented. The paper will conclude with the notion of how an authentic leader should be in leading community college in Hong Kong. It is expected that the direction of this personal philosophy will have a major impact in the both local and global leadership in education.

**Keywords:** Educational leadership, sub-degree education, personal philosophy, Educational Vision, Policy, Leadership, Management and Administration

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## 1. Introduction

Ten years ago, students in Hong Kong had limited articulation options if local universities could not offer admissions to them. That left no alternative choice for them to continue to pursue further study locally. Students of course could choose to fly overseas for study or stay here to find a full-time job, while those students who had just graduated from university were more or less targeting on the same goal. Assuming these students were good and fine candidates, who may simply need more training and learning opportunities to become eligible again for university admission, establishing post-secondary schools was quite reasonable.

In 2000, the Hong Kong Special Administrative Region (HKSAR) Government announced that within ten years, 60% of the senior secondary students would have the opportunity to continue their study in tertiary education [11]. It has been 10 years since the first community college was established, which offers the associate degree programs and other similar level of study programs to local students plus some number of positions for mainland Chinese students.

Frankly speaking, it should not be a surprise at the first place that doubts on the role and the function of community college were raised when this new concept was introduced [11]. Even some educators in Hong Kong who have received their former educations in North America or Europe cannot believe in the perspectives that community college can carry “a diverse range of educational functions and missions as university performs” [11]. Not only among the social community, but also university leaders, stakeholders, teachers, administrative staff, and the most importantly students can hardly comprehend this innovative and yet uncertain educational system.

Based on my observation and experience, this problem of ambiguity still holds true in terms of how to lead this particular type of educational institutions effectively. In this paper, it will provide a personal philosophy on how educational leaders should lead in community college settings given the highly diverse student backgrounds. First, it will draw on the perspective of why we, as educational leaders, should reflect, reconstruct, and reengineer on community college leadership, and how different it is between leading in university and in community college, particularly in Hong Kong. Common issues and difficulties encountered by top managements, supporting staff, teachers, and students are identified and explained. Then, the personal insights will be presented with support from existing literatures on the importance of relationship and dialogues in our context of building a true community. Finally, a conclusion will be drawn on how an authentic leader should be to lead effectively in community college in Hong Kong. The objective is to give a useful framework to educational leaders to Hong Kong to bring community college education to a higher ground.

## 2. Community College in Hong Kong

Before beginning to discuss and define authentic leadership for community college in Hong Kong. The personal observations of the common issues will be presented which educators face regularly based on my background as a teacher in sub-degree education. It is important that we know the general backgrounds in order to understand how to define the authenticity. Once we understand the backgrounds, then we can try to understand our role and responsibility of how to lead them to move forward with common missions. As what Sun Tzu

said in the translated classic Chinese literature “Art of War”, “Hence the saying: If you know the enemy and know yourself, you need not fear the result of a hundred battles. If you know yourself but not the enemy, for every victory gained you will also suffer a defeat. If you know neither the enemy nor yourself, you will succumb in every battle.” [9] In this paper, it will take this approach to address the issues we are facing by understanding both context and then ourselves.

Actually, research about community college in Hong Kong is very limited given that the history can only be traced back to 10 years ago. When the government announced the establishment of community colleges in Hong Kong, many local universities and educational institutions showed their interest to offer these sub-degree programs. However, as it is said in the critics, this sub-degree program is “only a government measure to alleviate the general sense of frustration of those who are not admitted to tertiary education under the existing higher education structure.” [11] At the beginning, most students saw this opportunity as an alternative to university. Not surprisingly, the demand grew significantly from 3790 to 9270 intakes in 2000/01 to 2001/02 academic years [11]. At that moment, students were attracted by the concept that entering to community college would find them a promising path to university.

After ten years, it is observed that a large number of students who are not quite ready in terms of their language proficiency, critical thinking skills, and other necessary competencies for higher education enter these programs. Although some students are qualified for admissions, universities simply do not have enough places to admit all of them. Even worse, students with associate degrees are not widely accepted as an entry qualification for most jobs in the markets due to that fact that this degree is treated as a springboard to degree programs only. Why the educational leaders could not foresee such situations at the first place?

Only recently, the government decided to switch from the old British educational system, where students are required to complete 13 years of primary together with secondary education before entering a 3-year undergraduate program, to a North America educational system, where students are required to complete 6 years of elementary school, 3 years of junior high school, and 3 years of senior high school to be eligible for enrolling to a 4-year undergraduate program. When the sub-degree programs were rolled out ten years ago, it was the same year the government was proposing the new academic structure, called “3-3-4” scheme. Given that secondary students who are not admitted to university under this new scheme, all the existing sub-degree programs need to be redesigned and restructured so as to meet the entry requirements of 3-3-4 scheme. In 2012, it will be the first year of university enrollment under the 3-3-4 scheme. That also implies that students who cannot be admitted to university will possibly begin their first year in community college for articulation. This revolution comes and goes quickly, and people have been wondering with critics that how educational leaders can keep a clear vision and long-term perspective of teaching and learning with the dramatic change in educational structure and policy. What can they do to maintain a good infrastructure of the educational system in the future?

On the other hand, teaching in the community college offers opportunities to understand the typical problems in student learning. Although no statistic is available concerning the background information of our students, such as their family incomes, social status and classes, and educational achievements of parents, it is only appropriate to discuss their performances. Actually, these students usually lack learning motivation and are passive

learners. Their foundational skills such as arithmetic, language usage, and critical judgment are insufficient. Self-confidence and self-assurance are weak compared with students who advance to higher education. In addition, self-discipline is another issue which leads to a serious problem in classroom management for teachers. Indeed, this problem could possibly come from the learning motivation of students, or teacher's effectiveness and creativity in classroom teaching. Perhaps we can find this commonality elsewhere, especially in the North America community college system where it is originated back in the 17th century colonial period. However, it is believed that "the meaning of college and university [to the American public] is often interchangeable. They share an equal status in undergraduate education" [11] while it is definitely not the case in Hong Kong from observation. Thus, it is crucial to fine tune the leadership roles so as to target these particular types of students.

Moreover, most of the administrators and leaders in community college are hired with prior managerial experiences in university, but not in sub-degree sectors. A similar phenomenon can be observed from the special education [5]. As we go over the college academic regulation and policy originally designed by these administrators, they are almost the same as in university for those students who excel in their learning. But how can we justify that this direct application can contribute immediately to students in sub-degree sectors? Their lack of teaching and leadership experience in community college when designing policy in academic regulation, admissions, teaching and learning effectiveness, assessment, and articulation are all illustrated gradually through the voices of students and the outcomes of graduates. Some students told that the college will never understand what they need. If top management had some teaching experiences and training on community college education, they would open their eyes and see better in their visions. If not, something must be done to generate a clear message in order to convey the urgency to these educational administrators and leaders.

### **3. Strategies toward Localization and Mobilization**

What is an authentic leader who can have an influence in this particular type of school? In this type of college, student competency is so diverse, and the educational reform happens so frequently under the government and university influence. How would an authentic leader create a unified atmosphere and learning environment so that students can be trained to become qualified for higher education, and teachers can be effective in teaching? What criteria should the leader consider when making policy adjustments, and how to make changes? Community colleges in Hong Kong should seriously and constantly consider the uniqueness of their challenges and come up with a targetable and tangible approach, not only to help the public accept the concepts of such education but also to promote effective leadership within the college. We need a localized strategy and policy rather than purely relying university management systems.

Currently, most of the community colleges are organized and promoted under the supervision of their affiliated universities. The main problem is that, too much influence (both good and bad) comes from the university who seems to serve as the superior in the board when making every single policy change. Even a tiny change of syllabus requires to be proposed at certain university committees, which are only held twice a year by the management boards. The turn-around effect hinders the effectiveness of changes for good. As what Wheatle claims and recommends, "We need to encourage the creativity that lives throughout the organization, but keep local solutions localized. Most change efforts fail when leaders take an innovation that has worked well in one area of the organization and attempt to roll it out to the entire

organization. This desire to replicate success actually destroys local initiative. It denies the creativity of everyone except a small group...Information about what has worked elsewhere can be very helpful. However, these solutions cannot be imposed; they have to remain local.” [10]

This notion of self-organization or localization that I believe is to be the first phase of the new revolution in the community colleges in Hong Kong. Once the colleges are detached completely from the university, more flexibility and independency will be permitted without hindrances. For the past 10 years, I believe these leaders were trying to solve the issues facing from “the outside in” [10]. Since the managements from the college follow the suggestions and recommendations from the university board who oversaw the college based on the information provided by the college leaders, optimal decision could be restricted with limited visions in these university leaders. As what Wheatley has predicted, this approach is “doomed to fail, and nothing will make them work” [10]. In this situation, Wheatley basically suggests that the organization should be formed “from the inside out, as people see what needs to happen, apply their experience and perceptions to the issue, find those who can help them, and use their own creativity to invent solutions” [10].

Somehow, university leaders have their perspectives on how the college should be run, and it turns out that they become the command and instructional leaders which forms a dominant strategy in the leadership. Sergiovanni argues that this kind of leadership practice “can breed dependency in teachers and cast them in roles as subordinates” [6]. These subordinates would simply follow the commands from the top and rely heavily on their management “rather than acting as self-managers” [6]. Sergiovanni calls that “hardly a recipe for building good schools” [6]. If we follow the notion of his argument, Sergiovanni suggests how the university leaders can transform the command and instructional leaderships to localized leaders, “As leaders of leaders, they work hard to build up the capacities of teachers and others, so that direct leadership will no longer be needed. This is achieved through team building, leadership development, shared decision making, and striving to establish the value of collegiality.” [6]

In fact, the Hong Kong Education Bureau along with other related officials have suggested the community colleges to be separated totally from their affiliated universities but only on the financial aspect. Indeed, the community colleges should become self-organized and self-managed institutions in the near future. That way, college leaders are empowered with absolute authority and authenticity in their productive and creative works. As what Wheatley said similarly, “In the end, you can’t define a list of activities that we responsible for the organization shifting, and you certainly can’t replicate anyone else’s exact process for success. But you can encourage the experimentation and tinkering, the constant feedback and learning, and the wonderful sense of camaraderie that emerges as everyone gets engaged in making the organization work better than ever before, even in the most difficult of circumstances.” [10] Thus, localized adaptation to the needs of teachers and students is fulfilled more effectively and efficiently.

Besides, the concept of *mobilization* can perfectly fit into the notion of localization in leadership and management. The action must be taken and mobilized now; otherwise the impact to the role of community colleges in Hong Kong will continue to be blurry. Being individualized away from the affiliated universities does not immediately imply that we are totally disconnected. A similar notion can be observed from Starratt that an authentic leader should “transform the school from an organization of rules, regulations, and roles into an

intentional self-governing community...In such a community, initiative and interactive spontaneity infuse bureaucratic procedures with human and professional values.” [8] That self-organization for localization coheres with what Wheatley claims. However, pre-condition needs to be fulfilled before this localization can be mobilized in place. Faculty and staff in the college need to first have a clear understanding about the purpose and true values of their colleges and their individual efforts will result in system wide coherence. Once the understanding is clear to everyone, then they can be “free to create and contribute” [10]. It is uncertain how long it will actually take to mobilize everything in place. I believe, as what Wheatley believes that this strategic change could be a multiyear effort [10]. Yet, the concept of localization and mobilization is definitely the first step in this new phase of educational transformation.

#### 4. Building a True “Community” College

To consider what a community college is, I suggest that this is a college within where true communal organization can be found and built through close relationship and constant dialogue. The influence will then be able to manifest to social community as well as other entities. This is what I call *community* college literally. Leaders should constantly renew and reflect on how influential they are in their roles to bring a strong community where subordinates form a permanent bond within each other as well as the leaders among the community. Let us consider the metaphor of *magnetism* in leadership.

Basically, magnet is a material or object that produces an invisible magnetic field which can generate a force of attraction or repulsion. Actually, the force can pull on other ferromagnetic materials, such as iron, and attracts or repels other magnets. Indeed, there are many types of magnetism, and *ferromagnetism* is the strongest type. The magnitude of the force in a magnet also depends on the strength of the magnetic field it can produce. In addition to the ferromagnetism, *paramagnetism* happens when some materials such as platinum forms a weaker magnetic force to the magnet, which is expected to be hundreds of thousands of times weaker than ferromagnetism. Yet, some materials form *diamagnetism* property where they simply generate a repulsive force to the magnet.

Being an authentic leader in a community ought to become a *permanent magnet* which is magnetized and creates its own persistent magnetic field to exert influences to others. Certainly, some people around the community are already ferromagnetic to the influence of the leaders, while some requires a stronger force to pull its attraction. Some people are even diamagnetic by its nature, and yet leaders should never force them to obey and follow. Closer it gets, larger force of repulsion can be felt immediately. To reflect on what Wheatley mentions, “[...]leaders] can’t direct people into perfection; you can only engage them enough so that they want to do perfect work” [10]. Once applying this principle of magnetism into leadership, true community can be realized.

#### 5. Dialogues in the Community

Building constructive dialogues constantly can help form a better relationship in the community. The “banking” concept of education described by Freire and Macedo offers an inspirational thought of how ineffective it can be when giving instructions to students. No communication is actually observed, but only communiqués and serious knowledge deposits into the minds of students such that they can “receive, memorize, and repeat” [3]. This way

of directive commands and teaching will result as “less [students] develop the critical consciousness” and “intervention in the world as transformers of that world” [3].

In order to fix this issue, Palmer suggests the learning of community by building up meaningful conversations through leaders and colleagues [4]. Even the localization concept is introduced, and dialogues can still be possible to interchange ideas beyond the colleges on a common platform. In his book, he points out two primary places leaders can go to if they want to grow further, which is their inner ground and their fellow associates. As it is claimed in the book, “If I want to teach [or lead] well, it is essential that I explore my inner terrain. But I can get lost in there, practicing self-delusion and running in self-serving circles. So I need the guidance that a community of collegial discourse provides—to say nothing of the support such a community can offer to sustain me in the trials of teaching [or leading] and the cumulative and collective wisdom about this craft that can be found in every faculty worth its salt.” [4] Palmer and Freire et al. find coherence in the advocacy of building a community with dialogue and conversation. During the conversations, constructive but open questions can be raised to bring more free rooms to the participants to think, ponder, and reflect on matters. When everyone is committed into the dialogues and understands with a clear objective in minds, conclusions can be drawn much easier.

Moreover, this type of dialogue is described as a *game* by Burbules. Organizing a dialogue is like forming a game platform, and the process should be fun and engaging. These games “involve appropriate rules and moves” [1], and it should be followed by each voluntary participants. I cannot recall any game without rules. Or I should say a game without rules is already a rule itself. A question may be asked, who should define the game rule? Should it only be the responsibility of a leader who presides the dialogue occasion? Or should everyone come and compromise a common rule together? I will say it depends on if everyone is absolutely clear about the aims, objectives, and missions of the organization, as what I have mentioned previously about Wheatley’s vision about what it really means as “meaningful conversations” [10]. At the end, people who come for the dialogue can “develop new levels of trust for one another that show up as more cooperation and more forgiveness” [10].

To expand a few more insights, we can bring numerous principles from Palmer’s “Ground Rules for Dialogue” [4]. In his book, the ground rules should be established so as to “help us respect each other’s vulnerability and avoid chilling the conversation before it can even begin” [4]. In addition to that, the rules should “allow us to be present to another person’s problems in a quiet, receptive way that encourages the soul to come forth, a way that does not presume to know what is right for the other but allows the other’s soul to find its own answers at its own level and pace” [4]. Every leader should see the beauty of asking right questions in the dialogue which can lead everyone from their inner souls to enlightenment.

Furthermore, commitment to complete the game is crucial because others cannot finish it when someone leaves in the middle of it if the game involves two or more participations. Even a game we play ourselves, leaving the game simply implies the conclusion cannot be drawn. In every case, commitment is vital and selfishness should be swapped away. Last but not least, “dialogue is continually created in the act of engaging in it, and every time we create it, it is different. In this, also, it is like a game” [1]. That is the fun side of playing a game, and it is the same as the dialogic approach in leadership.

The most fascinating part in a dialogue is that every participant becomes a leader to edify each other, and the entitlement is broken in the process. Everyone in the dialogue will simply

represent his or her individual self. Particularly, an authentic leader “does not try to be different just for the sake of differences; he or she tries to achieve dialogical truth by realizing his or her unique positions” [7]. Undoubtedly, good relationships can be nourished and trust can be built at the same time if the dialogue is found constructive and informative. In short, true community can be built in the process of dialogue. I can view Palmer’s idea about leadership through his reflection on teaching.

In educational leadership, every leader ought to be an excellent teacher at some point before becoming authentic leaders. If an educational leader fails to teach particularly to students, I believe the dialogue can be simply ended at that point. To quote from Palmer, we can learn that “to teach [or lead] is to create a space in which the community of truth is practiced” [4], and “good teaching [or leadership] comes from the identity and integrity of the teacher [or leader]” [4]. As leaders, we hold the accountability and responsibility to bring out meaningful conversations to the community. By doing so, leaders become teachers and students, and eventually teachers and students become leaders, which should be the ultimate objective.

## **6. Concluding Thoughts: Novel Concept, Magical Effect**

To be an authentic leader, we have an obligation to uncover the potentials of our followers. “Leaders with values and vision tend to believe that other people have the potential to be motivated by the same commitments, not just by narrow self-interest” [2]. I believe community colleges in Hong Kong are mature enough to be separated from their affiliated universities after 10 years of experiments. It is true that we face a challenge of highly diverse group of students, but leaders should accept their differences and help them see better their inner souls through constant dialogues.

We live in a time when differences become conflict, in which the circumstances are not necessary to happen. More often the schools in Hong Kong separate good students and poor students in different classes. They believe such way can provide students with different pedagogies in teaching and learning. No surprise when students grow up and survive in our society, classification among citizens is defined and divided. In fact, there are always two sides of coin. No matter how fine you slice a cheese, there is going to be two opposites. Yet, both perspectives contribute to the entity itself, or the object cannot exist in reality. Palmer's book (2007) talks about the paradoxical thinking, and how important they are to "generate the energy of life" [4]. I personally find the analogy interesting and fitting into the context of educational leadership. As Palmer said, "the ability to discriminate is important - but only where the failure to do so will get us into trouble" [4].

As educational leader, we must learn to accept the differences of our students and community [5]. We find ways to help them through education and the policy within it. We ought to help them see differences and lead them to learn how to live with difference so that we can all make a difference in our society. No doubt, diversity does add variety of favors in our lives, so we must appreciate it and not let it turn into cultural conflict or dilemma. If a leader can help others become leaders, and constantly build a community with constructive dialogues, it will result in a unified community to serve as a knowledge hub for better society in a magical way.

## 10. Acknowledgement

This is an excerpt of an accepted research proposal leading to the Doctor of Education dissertation at the University of Hong Kong.

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*The Blended Learning Model with Active Learning for Knowledge Construction and Creative Problem Solving Ability for Undergraduate Students in Higher Education*

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Official Conference Proceedings 2012

Abstracts

This paper is a report on the findings of a study conducted on the blended learning model with active learning for knowledge construction and creative problem solving ability for undergraduate students in higher education. The methodology of this study was R&D research. The subjects were 40 undergraduate students that divided into an experimental group and a control group in Faculty of Education, Chulalongkorn University in the academic year of 2011. The research instruments were a creative problem solving ability assessment, a knowledge construction evaluation form, and an attitude questionnaire. The data was statistically analyzed using mean, standard deviation, and t –test.

The research findings discovered the blended learning model with active learning for knowledge construction and creative problem solving ability for undergraduate students in higher education institutions consisted of six components: 1) Experience transfer 2) Collaboration among learners 3) Various leaning methods 4) Learning resources 5) Learning reflection activities 6) Evaluation. Eight creative problem solving processes;

1) Identify problems 2) Explain each issue of problems 3) Identify causes of problems 4) Discover various creative solutions 5) Identify good and bad issues of those creative solutions 6) Find out excellent answers 7) Choose the best answer by giving a good reason 8) Identifying the best solutions for the issue to the students. Six active learning activities composed of 1. Debate in selected topics 2. Pass the chalk 3. Beyond search engine 4. Modify Delphi Technique 5. Group share 6. Learning log and Build new knowledge by writing a Journal together.

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## Introduction

Creative Problem Solving is a proven method for approaching a problem or a challenge in an imaginative and innovative way. It is a mental process that involves discovering, analyzing and solving problems and is a tool that helps people re-define the problems they face, come up with breakthrough ideas and then take action on these new ideas. The ultimate goal of problem-solving is to overcome obstacles and find a solution that best resolves the issue. A famous person who studied about creative people, ideas, and creative solutions were Alex Osborn (1967). He wrote a well-known book "Applied Imagination" and more than 50 years later, creative problem solving is known and used worldwide, by hundreds of companies and professional practitioners, and thousands of individuals. For education creative problem solving always mentioned both instruction and learning activities with considering in helping students to discover the value of higher-order cognitive skills and teaching them to become creative problem solvers. The engaging learner methods for promoting creative problem solving should have many active activities. Thus, active learning has an important role to widely known and used in instruction. Active learning refers to several models of instruction that focus the responsibility of learning and complete to believe that it helps a child to be confident, happy, healthy which is a key to their future success in learning achievement. There have several active learning activities in building creative problem solving and knowledge construction such as working in group or pairs, self-reflection, pedagogical techniques and models, using ICT integration in learning and exploring students' willingness activities. As mentioned earlier, the researcher is interested in studying creative problem solving ability and knowledge construction by developing a model with blended learning and active learning to find out answers how learners achieve creative problem solving ability and knowledge construction in higher education.

## The objectives of this study

The purposes of this research were as follows:

1. to investigate components, processes and active learning activities of the blended learning model with active learning for knowledge construction and creative problem solving ability.
2. to create the blended learning model with active learning for knowledge construction and creative problem solving ability for undergraduate students in higher education.
3. to study the results of the blended learning model with active learning for knowledge construction and creative problem solving ability for undergraduate students in higher education.
4. to present the blended learning model with active learning for knowledge construction and creative problem solving ability for undergraduate students in higher education.

## Hypothesis

1. The creative problem solving ability posttest of students in the experimental group after learning by using the blended learning model with active learning activities was higher than the pretest at the .01 level of significant.
2. The creative problem solving ability posttest in the experimental group after learning by using the blended learning model with active learning activities was higher than the control group at the .01 level of significant.

## Research questions

1. What components, processes and active learning activities of the blended learning model with active learning for knowledge construction and creative problem solving ability for undergraduate students in higher education?
2. Can undergraduate students create knowledge construction and creative problem solving ability using this model?

## Methodology

The blended learning model with active learning for knowledge construction and creative problem solving ability for undergraduate students in higher education was R&D research. The methodology consisted of the following; the researcher

- (1) Analyzed and synthesized information and research about components and processes of knowledge construction, creative problem solving ability, and active learning activities.
- (2) Created the blended learning model with active learning for knowledge construction and creative problem solving ability for undergraduate students in higher education institutions with five experts monitoring this model.
- (3) Studied the results of using the blended learning model with active learning for knowledge construction and creative problem solving ability with 40 undergraduate students, major in educational technology from the Faculty of Education, Chulalongkorn University, academic year 2011. Students were divided into two groups of 20 members each which one group was an experimental group and another was a control group. The subjects were similar in terms of age (ranging from 20-21) and educational background. After trial, the researcher revised, modified this model and followed by considering and approving by five experts in the educational field.
- (4) Presented the blended learning model with active learning for knowledge construction and creative problem solving ability for undergraduate students in higher education in publications.




## Instruments



Instruments of this research consisted of a creative problem solving ability assessment, knowledge construction evaluation form, and an attitude questionnaire. The content validity of these instruments was obtained from three experts. These instruments were revised according to suggestion of the experts.

## Experiment Stages

1. The subjects completed the pretest of the creative problem solving ability assessment prior to starting the processes of creative problem solving ability which followed by active learning activities with online learning and studying in the classroom.
2. The subjects performed instructional activities from blended learning model for 10 weeks (20 hours) as follows:
  - 2.1 The instructor who participated in the research informed objectives, active learning principles and activities, assessment and evaluation to subjects.
  - 2.2 The subjects which the experimental group and the control group took the creative problem solving ability pretest.

2.3 The experimental group students participated in creative problem solving processes which followed by active learning activities and the control group students participated in passive learning activities.

Processes	Contents	Active learning activities	Online/F2F
1. Identified problems 2. Explained each issue of problems 3. Identified causes of problems	Selected topic for debate such as social media: Good or Bad for young students, E book or printed book that suitable in century 21	<b>Active learning activities 1: Debate in selected topics</b> 1. Students debated in selected topic which divided by group 2. Students in each group identified main problems and other issues. <b>Active learning activities 2: Pass the chalk</b> 1. After introducing a topic, “pass the chalk” to a students, instructor allowed the student to speak about each issue of problems and identified causes of problems and then after answering he or she then passed the chalk to the next student and so on.	 Six hr.
4. Discovered various creative solutions 5. Identified good and bad issues of those creative solutions		<b>Active learning activities 3: Beyond search engine</b> 1. Students discovered various creative solutions in internet by suggestion learning resources 2. Instructor gave learning resource such as e-document and website resource. - <a href="http://kcenter.dip.go.th/Portals/0/km272549.pdf">http://kcenter.dip.go.th/Portals/0/km272549.pdf</a> - <a href="http://ilc.swu.ac.th/Portals/127/Documents.pdf">http://ilc.swu.ac.th/Portals/127/Documents.pdf</a> - <a href="http://planning.excise.go.th/knowledge/hr-out-frame.doc">planning.excise.go.th/knowledge/hr-out-frame.doc</a> - Examples of creative solutions.ppt - Instructional activities with ICT.doc - Teaching / Thinking skill process for creativity production.pdf. - <a href="http://www.moe.go.th/main2/article/articlesagob/article45_6.htm">http://www.moe.go.th/main2/article/articlesagob/article45_6.htm</a> - <a href="http://www.nectec.or.th/index.php?option=com_content&amp;view=article&amp;catid=8&amp;Itemid=165&amp;id=440">http://www.nectec.or.th/index.php?option=com_content&amp;view=article&amp;catid=8&amp;Itemid=165&amp;id=440</a> 2. Students chose one paper and read it for identifying good and bad issues of those creative solutions in the paper. 3. Students read the creative solutions of their friends	 Two hr.
		<b>Active learning activities 4: Modify Delphi Technique</b> 1. Instructor mentioned about the selected topic in “Active learning activities 1” 2. In each group, students concluded about the causes of problems and reviewed information about problems	 Four hrs.

Processes	Contents	Active learning activities	Online/F2F
		using social network: Facebook	
6. Found out excellent answers 7. Chose the best answer by giving a good reason		<b>Active learning activities 5: Group share</b> 1. Students wrote creative problem solutions using social network: Facebook; application on Facebook (Docs beta) 2. Students found out five excellent answers in respectively by choosing the best answer with reasonable and good reasons using social network: Facebook ; application on Facebook (Docs beta)	 Four hrs.
8. Identifying the best solutions for the issue to the students		<b>Active learning activities 6: Learning log and Building new knowledge by writing a Journal together</b> 1. Every student wrote learning log in his/her Facebook and distributed the best answer to others. 2. Working In pairs, students wrote a journal together using social network: Facebook; application on Facebook (Docs beta)	 Four hrs.
<b>10 weeks ( 20 hrs.)</b>			

3 The subjects completed the creative problem solving ability posttest and answered the attitude questionnaire.

4 For students' journals, three experts gave scores using a knowledge construction evaluation form.

### Data Analysis

After the subjects in the experimental group wrote journals they were graded and received knowledge construction scores by experts. Knowledge construction scores were measured by a knowledge construction evaluation form which was classified by measuring criteria (as shown in Table 1). The creative problem solving ability was analyzed by using dependent and independent t-test in Table 2 and 3.

**Table 1: The results of knowledge construction scores**

Subjects (student number)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Scores	120	115	105	105	100	110	110	110	115	120	120	115	105	105	100	110	110	110	115	120
	5	5	5	5	4	5	5	5	5	5	5	5	5	5	4	5	5	5	5	5

5 = Excellence 4=Good 3=Satisfied 2=pass 1=fail

The results from knowledge construction scores showed that eighteen students were excellence and two students were good.



Creative problem solving ability was analyzed using a dependent t- test and this found that there was a significant difference between pretest and posttest in creative problem solving ability at the.01 (See Table 3)

## Findings

The results of this study revealed that:

1. The experts' opinions agreed that the blended learning model with active learning for knowledge construction and creative problem solving ability consisted of six components: 1) Experience transfer 2) Collaboration among learners 3) Various leaning methods 4) Learning resources 5) Learning reflection activities 6) Evaluation. The eight processes consisted of 1) Identify problems 2) Explain each issue of problems 3) Identify causes of problems 4) Discover various creative solutions 5) Identify good and bad issues of those creative solutions 6) Find out excellent answers 7) Choose the best answer by giving a good reason 8) Distribute the answer to others.
2. A t-test comparison of posttest and pretest of the experimental group students showed statistically significant difference at.01 level in creative problem solving ability.
3. The total results of knowledge construction showed that the experimental group students were excellence in journals' writing.
- 4.The experimental group students revealed that they were satisfied with the blended learning model with active learning for knowledge construction and creative problem solving ability.
- 5.The blended learning model with active learning for knowledge construction and creative problem solving ability for undergraduate students in higher education institutions was presented as follows:

## Acknowledgements

First and foremost, it is a pleasure to thank the Thailand Government for full research funding in 2011 and Faculty of Education, Chulalongkorn University for supporting to aboard presentation and I am grateful to thank the peer reviewers for their comments and recommendations about this full paper for presentation and publications.

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*Experiencing OBE in Hong Kong Higher Education: Indirect Measure of Generic Skills*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

Outcome-based education (OBE) is a student-centered learning philosophy and has become popular in higher education recent years. However, there are only limited literatures to discuss the effectiveness of OBE's conceptions in Hong Kong higher education. This study attempted to explore OBE methods through a qualitative research based on a three-year indirect measure of three different cohorts of a self-financed associate degree programme in Hong Kong.

Graduates with different academic attainment levels (i.e. excellent, good and satisfactory) were invited through a judgment sampling method by the concerned programme leader to attend the focus group discussions on a voluntary basis. The focus group discussions were conducted by an experienced moderator during the period between December 2009 and October 2011.

The findings of the study have reported certain positive indicators of enhancing students' generic skills which can then strengthen their overall confidence in their further education and career although students' awareness level of OBE's conceptions was found limited. In general, students in Hong Kong focus much of their attention on examination grades of their studies. Nevertheless, the application of OBE allows educators to learn more about students' achievements in terms of planned outcomes and offers an opportunity to carry out a continuous reflection leading to the enhancement of curriculum design or teaching pedagogy.

**Keywords:** Outcome-based education (OBE), Indirect Measure, Marketing Students, and Higher Education in Hong Kong

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## **Background of the Study**

Outcome-based education approach has been a popular aspect for majority of territory institutions in Hong Kong. This purpose of this study is to measure the students' learning outcomes after completing a two-year self-financing programme of Associate in Business (Marketing) offered by a tertiary educational institution in Hong Kong.

The findings of this study are a partial work a three-year funded project of the Quality Enhancement Grant Scheme (hereinafter referred to as QEGS) provided by the Education Bureau of the Hong Kong SAR Government. QEGS is set up to fund worthwhile non-works projects or initiatives dedicated to enhancing the quality of teaching and learning of self-financing post-secondary programmes.

Qualitative research was adopted for this study and a project assistant was recruited to organise the focus group discussions during the period of December 2009 to October 2011. All focus group discussions were conducted by this project assistant performing the role of a moderator. A total of thirty marketing graduates with different academic attainment levels (i.e. excellent, good and satisfactory) were invited to participate in the focus group discussions on a voluntary basis.

## **Research Objectives**

Outcome-based education (OBE) is a teaching philosophy that focuses on the attainment of specified learning outcomes. It relates to the potential and actual abilities obtained by students after completing their studies (Spady (1994); Kudlas (1994)). This paper is in an attempt to explore the overall perception of marketing graduates towards their attainments of intended programme learning outcomes in terms of their generic skills. The key findings of the study would facilitate the concerned programme leader to carry out a continuous reflection leading to the programme enhancement (Pretorius (1998)).

There were five generic programme learning outcomes for the Associate in Business (Marketing) which are expected to be attained by students throughout their two-year programme:

1. Critically assess propositions and arguments commonly encountered in daily life and general business setting.
2. Invoke creativity and other problem solving skills in dealing with problems encountered in daily life and general business settings.
3. Effectively use current information technology to carry out tasks commonly encountered in tertiary level studies, general office work, and daily life.
4. Demonstrate a professional attitude in terms of sense of responsibility, integrity, self-confidence, service attitude, and teamwork – at a level expected of a promising associate professional.
5. Effectively communicate in spoken and written English in general business settings – at a competence level required of an associate professional.

## Research Method

Information obtained from quantitative research may not be sufficient to explore the inside feelings and attitudes of respondents towards their programme. The adoption of qualitative study in terms of focus group discussion or personal depth interview can allow researchers to obtain rich data from respondents such as their learning experiences and abilities to perform different assignments and examinations during their course of study. More importantly, the qualitative study also enables the researchers to understand the reasons of their feelings or perceptions (Burns and Bush (2010)).

The data collection of focus group discussions covering three phases and personal depth interviews were adopted by this study. They were organized by the project assistance and carried out at the campus of the Hong Kong Community College, The Hong Kong Polytechnic University. All focus group discussions and personal depth interviews were guided by the project assistant performing as a moderator. Note-taking and tape-recording were used to ensure that key issues were recorded properly.

The target respondents were fresh graduates of Associate in Business (Marketing). These respondents were recommended by the programme leader based on their academic achievements in terms of excellent, good and satisfactory results at the time of graduation. They were contacted and invited by the project assistant to join the focus group discussions on a voluntary basis. During the recruitment process of respondents, it was found that some graduates were not be able to join the focus group discussions although they were eager to participate in sharing their views. As a result, some marketing graduates were invited to share their learning experiences and perception of their study through the arrangements of personal depth interviews. A debriefing was given to each potential respondent by the project assistant at the time of invitation.

### Three Phases of Data Collection

The focus group discussions and personal depth interviews involved thirty marketing graduates by three phases of data collection periods. The detail of data collection schedules was given in following Table 1:

Table 1. A summary of three phases data collection (Dec 2009-Oct 2011)

Phase	Phase One Dec 2009 - Feb 2010	Phase Two Oct – Nov 2010	Phase Three Sep – Oct 2011
No. of group/(n) nos. of graduates	2 focus groups (n=8)	2 focus groups <i>plus</i> 4 interviews (n=12)	3 focus groups <i>plus</i> 2 interviews (n=10)

### Key Findings and Discussions

The findings with the respondents' excerpts based on the five generic programme learning outcomes are shown as below.

## 1. Critical propositions and arguments

This intended learning outcome implies that students can critically assess propositions and arguments commonly encountered in daily life and general business setting. This learning outcome is an essential quality that tertiary education has emphasised.

The respondents perceived that they had developed critical proposition and arguments throughout the two-year associate degree programme. They were given courseworks, such as assignments and tutorial exercises, which required them to employ critical thinking, decision-making, analysing, planning, implementation, recommendation and reflection. They found when there was something related to Marketing in their lives, they became sensitive to those appeals or strategies used. The following excerpts from some of the respondents support these views:-

*“I have developed my analytical ability. Marketing stays close to our daily living. So when I see an advertisement, I may analyse it and see what means have been applied. I am no longer just being an audience but viewing from the mindset of a marketer.”*

*“Blueprint is something with many small checkers listing every step or procedure for a selected industry. Also, we had to decide when and how the steps will be successful or failed. For failure, we got to think of contingency plans as well.”*

*“For the profession, I think I have learned about research. We have learned how to set questionnaires and how to analyse the data collected and design a campaign accordingly. Also, we have to set up a marketing plan. All these are professional knowledge for Marketing.”*

## 2. Creativity and problem solving skills

This learning outcome entails that students can invoke creativity and other problem solving skills in dealing with problems encountered in daily life and general business settings. Creativity is one of the characteristics of marketing students. They need to have their own ideas in order to devise appropriate marketing plans or promotion campaigns to attract target customers' attention. To develop creativity and problem solving skills of students, a diversity of engaging assignments were used in different courses.

It was observed that Marketing programme impressed their students a lot in this aspect. Great autonomy in designing and presenting the assignments was allowed as far as the choice was deemed appropriate. The respondents could still remember and name specific assignments vividly that they found helpful in enhancing their creativity and problem-solving skills. They agreed that being creative and flexible were keys to success for devising attractive or appropriate marketing plans or promotion campaigns. The following excerpts from some of the respondents support these views:-

*“I find my adaptation ability has been improved. In our training, we were suddenly being asked of something we didn't know. Then we learned how to handle such situations but not just telling the others we didn't know. We have learned how to*

*handle such difficult situations. Of course, we can make use of something we learned from Marketing.”*

*“I think Marketing graduates are comparatively having more ideas. I mean original ideas from us. This is because we always need to work out something with our own ideas. That’s different from Accounting. They may just apply the knowledge learned from the books. They have to work based on the books. But we have to come up with our own idea. We really need to generate ideas by ourselves.”*

*“If you are asking about the special abilities possessed by graduates from Marketing programme, perhaps it will be creativity. Other programmes like Mathematics do not need creativity. Management needs creativity. But for Marketing, you must have creativity. First, you need to find a market (segment). Except from that, you have to think about interesting ways to attract customers.... You need to use beautiful words and frames to attract people’s attention. If we lack writing exercise to practice our wording, we may need to spend more time in real life’s work.”*

### **3. Information technology skills**

This learning outcome indicates that students can effectively use current information technology to carry out tasks commonly encountered in tertiary level studies, general office works and daily life. IT skills are useful to the students when studying in their tertiary level studies and after graduation in jobs.

The respondents mentioned that the skills of PowerPoint, Excel and online search could be applied in current study and future work. They could use and train their IT skills through doing assignments and projects. They used the software for various assignments, such as collecting data and doing the analysis in marketing research, designing some graphics in marketing promotion and advertisements, and generating some statistical charts for presentations and reports. The respondents also mentioned the e-learning platform could enhance their learning. The following excerpts from some of the respondents support these views:-

*“Lots of them. Excel spread sheet we learned from the IT course is still useful. We got to plot graphs by using Excel.”*

*“We got to use PowerPoint slides for every presentation. I was the one who mainly responsible for the creation of PowerPoint slides. In the meantime, I got to use Microsoft software as well to facilitate the presentations. That’s quite useful to me to acquire these skills. I am sure we got to possess skills when we work in the future. That’s what I found practical in our programme.”*

*“I have met some lecturers sharing questions on ‘MOODLE’ (e-learning platform). Everyone could share and discuss online. I think it is good method. However, not everyone does that online. It is hard to control because you do that at home. It is unlike that lecturers ask to finish in class.”*

#### 4. Development of professional attitude

This learning outcome emphasizes that students can demonstrate a professional attitude in terms of sense of responsibility, integrity, self-confidence, service attitude, and teamwork – at a level expected of a promising associate professional. Quality service attitude for Marketing programme can be interpreted as satisfying the needs of customers. Time management is also an indicator of this learning outcome. It is the act of planning over the amount of time spent on specific activities, especially to increase effectiveness and efficiency.

Some respondents perceived that two-year training was congruent to this idea of quality service attitude. Good communication with the customers should be achieved in order to plan and provide the most suitable products or services. From the sharing, it showed that such professional attitude could be cultivated by different core courses. The following excerpts from some of the respondents support these views:-

*“For Marketing, we always need to learn and think about what and how consumers are doing. In short, we need to know what our customers are looking for. What sort of (marketing) activities will be able to fulfill their desire and needs?”*

*“...Our research skills help us. Researches refer to investigating the current market needs.”*

*“I found group project fruitful in a sense... Basically, we always think that we are right. However, working with different people will help you make proper adjustment as I might not be 100% correct.”*

*“Marketing covers a wide range of contents. I think... what I learn is about the point of difference. Marketing is needed in our society in order to communicate the point of difference of the products to the target customers. So that’s important to find ways to establish a good communication with customers.”*

*“...Time Management is very important as we work in the community. For instance, you got a project in a department. You need to divide it into different parts and delegate each one’s duties. You have to finish one part before proceeding to other colleagues. Everything has a deadline. You have to keep that.”*

#### 5. Effectively communicate in English

This learning outcome specifies that students can effectively communicate in spoken and written English in general business settings – at a competence level required of an associate professional. Two English subjects, namely, *English for Academic Studies* (EAS) and *English for Workplace Communication* (EWC) are compulsory subjects for all the associate degree programmes at HKCC. English is also the medium of instruction of all Marketing subjects.

The respondents expressed that language proficiency, no matter in written or oral form, was important for their future studies and career. For writing skills, they could learn how to write CV and application letters so that it is helpful for them to seek jobs later. Frequent practice and

requirement of presentation enabled them to be less fearful and build up more confidence in presentation skills and projects including Q&A, quick response, and body language. The following excerpts from some of the respondents support these views:-

*“Personally speaking, I have gained more confidence. Possibly, my confidence has been gained through giving presentations. That’s a kind of marketing for our group. All the projects help in this perspective. We had to write some scripts when giving presentations. Some lecturers told us not to do so. We had better to use simple English for memorizing the contents. That’s good enough to make our presentation smooth and fluent.”*

*“For that subject (EWC), we learned how to write emails. What we had learned was something we needed to do. Also, we needed to write something for activity promotion. We must make it attractive. We had to apply all these skills as a committee member. I really find that important to write good emails to facilitate communication with parties outside. For example, the writing of a good proposal is important to impress the others.”*

*“Sometimes, our English would be assessed when we were in the Marketing programme. What we had learned were something very alike and we got the same or similar articles, but how well we could write in English was crucial. With good English, we could write and had better arrangement of our answers. Well written in English was an advantage. That’s true for doing the assignments.”*

## **Conclusion and Implications**

The application of OBE offers educators an opportunity to focus on the potential and actual abilities of students after they are trained (Faizah (2008)). It also allows educators to carry out a continuous reflection leading to enhancement of curriculum design or teaching pedagogy in long-term.

The findings of this study have reported certain positive indicators that the two-year Associate in Business (Marketing) programme had enhanced the students’ generic skills such as problem solving, critical thinking, IT and communication skills, etc. These generic skills helped to strengthen the overall confidence of the marketing graduates in their further education and future career development. More importantly, the findings also have implied that the existing teaching and learning pedagogies are in the right direction for attaining the generic skills indicated in the intended learning outcomes of the programme (Olivier (1998)).

This study also found that students’ awareness level towards the outcome-based education (OBE) was low in terms of understanding the learning principles of OBE. This implies that educators in Hong Kong may need to pay more attention to this aspect and put more efforts to create an appropriate level of awareness and attention throughout of their study. In general, students in Hong Kong focus much of their attention on assessment grades or marks of their studies. Therefore, assessment methods and rubrics based on those intended learning outcomes may play an important role to engage students’ attention to the principles of OBE (Biggs (1999); Malan (2000)).

## **Limitations of the Study**

Although the key findings of this study have provided positive indicators regarding students' attainment of the five specified generic skills, the researchers of this study would like to draw the attention to the following limitations when reading the key findings and conclusions of this study.

### **1. Resources constraints**

This was a pilot study funded by the Education Bureau of the Hong Kong SAR Government. As a result, the project duration and budget were restricted to three-year period of time. In other words, it lacks of further financial back-up from the government for the researchers to conduct comprehensive follow-up actions based on the research findings.

### **2. Sample size**

Owing to time constraints, limited resources and difficulties in fixing up three phases of focus group discussions with potential respondents, the size of focus group was considered as small compared with a typical group size with seven to 10 people (Lamb, Hair & McDaniel, (2009)). The size of focus group might have some impacts of the overall group dynamic and interactions among respondents. As a result, several individual depth interviews were arranged on a voluntary basis to supplement the key findings by the project assistant.

### **3. Sampling bias and non-response error**

All respondents were recruited on a voluntary basis and students with satisfactory performance (i.e. marginal performance) did not attend any focus group discussions although the project assistant had made effort to invite them to join. As a result, it may create sampling bias and non-response errors in the findings.

### **4. Subjective interpretations by the researchers**

The researchers have made effort to make objective analyses and interpretations; it would be difficult to eliminate all subjective ideas or interpretations by the researchers. Therefore, personal bias might exist when doing analysing of the raw data.

### **5. Sample**

This study only involved the marketing graduates. However, collecting feedback from concerned some other key stakeholders such as articulation partners and employers is also important and therefore inviting these key stakeholders is recommended for future study.

## **Acknowledgement**

The authors would like to express their special thanks to QEGS for providing the grant to carry out this pilot study of OBE. The authors also would like to extend their special thanks and appreciation to Dr. Simon Leung, Dr. So Yin-lun, Dr. Wincy Lee, the QEGS project team members, all concerned subject leaders and administrative staff who contributed their good effort and provided kind support to this project.

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*A Survey of the Effects of Principal and Teacher Leadership on Students'  
Participation of High Schools*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

The main purpose of this study was to investigate the relationship between principal and teacher leadership and student participation with schools of Bushehr province highschools in2011-2012.The framework for this study conceptualized the two sources of leadership as independent variables. The dependent variables was student participation with school.

Data to test this framework were collected from samples of teachers and students in Bushehr province using two survey instruments(questionair).One survey asked teachers about the status of school organization conditions.The second survey asked students about their participation with school,the status of their family function and the effects of principal and teacher leadership on participation.Regression was the primary method of data analysis used to test the framework.Some results of the study are:There is a significant relationship between principal leadership and student participation.There is a significant relationship between teacher leadership and student participation.There is a significant relationship between family function and student participatin.There are significant differences between the participation rates of boys and girls in schools.

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## **Introduction**

Independence and dynamics of each country depend on its leader. Study of history shows that several pages from the Big Book of History, have been determined by such famous and big men. Today, in the third millennium, more than ever, the importance of management and leadership can be felt in different tasks. The environment, even in the classroom, a smart leader can help all students. It is for this reason that the success or failure of an organization or a country, in the fields of business, culture and sports, is based on managerial abilities. (Iymani, 2006, p 124). Writing, literature and research on management and leadership, quantitative findings confirm the nature of leadership and management. Fifty years of research have failed to determine an inherent characteristic or set of characteristics distinguishing non-leader and leader of the people. Studies show that management is a dynamic process, the environment and other environments due to environmental differences between subordinates and managers are different (Hersi & Blanchard, 2005, p 88.) Some authors believe that the true meaning of leadership, iconic in nature, is the opposite of its inherent nature. In other words, in this theory, it is believed that the real decisions and measures that can be taken by the leaders are very small. More importantly, it is a symbolic manifestation of leader behavior can be inferred. Assuming leadership of the staff always takes the time to send birthday greetings to congratulate them. Traditional theories of leadership, relationship-oriented leader behavior as part of such action, and thereby also consider employee satisfaction. While the theory of symbolic behavior offers a more complex picture. For example, if the birthday cards, when sent to be signed by its director have been indicative of the care and attention will be symbolic. As a respected manager with this interpretation is that behavior must conform. On the other hand, suppose the birthday cards are not timely submitted, or to be signed by the secretary, director, and worse, imagine that your name is written in the wrong card to the recipient. This sequence of events indicates a lack of attention and consideration by the manager, and the likely result will be a loss of trust in employees. So, here's the content of the decision, for example, decided to send a greeting card, it is not necessary, but what is important is the symbolic nature of the action (Griffin 1, 2006, pp. 373-374), Jordan (2000). Manager success depends on the manager's technical skills, human relations and conceptual skills. Because most managers skills training, is very complex, they are ignored (Jordan, 2000, p, 19).

## **Problem statement**

According to the school as an educational system, which consists of elements such as principals, teachers, students and parents of students who are in contact with the cross, in today's societies increasing extent, and can be many social and economic trends. One of the success factors of

each school, is the student's participation in school. Students can participate in school field to facilitate their entry into the community.

Some academic studies have found that the teachers do not have the knowledge and skills as possible, do not work. The empirical evidence on the impacts of the school, in general, and the impact of leadership, in particular, the creation of realistic expectations for what is possible in empirical studies of the effects of lead teacher is found to be useful (Leitwood & Jentzy, pp. 415, 34). So Alagheband (2007) states that in order to change the content and quality of education, improve and strengthen the leadership, they are essential. He is addressing the issue of leadership and management of the education system, are important issues, because there are effective and capable leaders in top educational institutions, and are the major pillars for growth and promotion of education (Alagheband, 2007 , p 84). In an era of profound and rapid change characteristic it is for leaders who have a distinct personality and unique ability to penetrate high views tall cognitive component human skills extraordinary able the critical school affair conditions , the best teachers and students are under their influence, and they have high motivation to encourage participation in school affairs. (Smith, 2002). Unfortunately, our schools are still the traditional ways of the past, which were often unsuccessful. This many problems including low participation and commitment of the students and teachers there are very few managers.

Teachers, as they are different, they lead differently. As a teacher of leadership and a wide range of roles to support student achievement should be considered, whether it is formal or informal roles. They improve the overall capacity of the school, because teachers will be led differently. (Harrison & Killion, 2007).

In this study, the influence of personality and human relationships, partnerships, principals and teachers encourage the students' participation are studied. In this regard, family structure, responsibility, encouraging parents, students, parents, partner, parent behavior, behavior, beliefs, desires, perceptions, pedagogical style, the dominant role of parents, including the factors affecting the character and participation of students in their school .Student participation in school activities is classified into seven areas. The groups include:

- 1 - School training affairs
- 2 - School religious affairs
- 3 - School health affairs
- 4 - School administration affairs
- 5 - School cultural and art affairs
- 6 - School entertainment, sports and entertainment affairs
- 7 - School disciplinary affairs

At present study, it is efforts between variables such as principal leadership and student s'participation, teacher leadership and students' participation and the role of parents in students' participation in Bushehr's schools, studied in school year 2011-2012 academic year.

### **Research hypotheses:**

- 1- Between principal leadership and participation in schools affairs, there is a significant relationship.
- 2- Between teacher leadership and participation of students in school affairs, there is a significant relationship.
- 3- Between parent leadership and participation of students in school affairs, there is a significant relationship.
- 4- Between female and male students' participation in school affairs, there is a significant difference.

### **Review on theoretical grounds and literature review**

Experts according to their tastes and attitudes have suggested different definitions for leadership that these definitions are mentioned briefly here. "Leadership is the power of personal characteristics." (Etzioni.1999, p 116). "The leader, is a person which responsible in the task of directing and coordinating the activities of the group" (Fidler, 1999, p 8). "Leadership is the process of influencing the activities of an organized group that aims to shape and desire" (Stagdil, 1998, p 122). Leadership is power and influence in recruiting them, if the people (followers), the voluntary character of a person in a certain conditions, to accept the leadership (Mir-Kamali, 2003, p 74). In George Terry view, leadership is the practice of influencing people so willingly attempt for the purposes of a group (Hersi & Blanchard, 2005, p 101). In other words, "Leadership is the art or science of influencing people so desire, and their desire to reach the goals set in step, or is the ability to create a situation in which employees with confidence and enthusiasm, doing their duties (Iymani, Azarakhsh, Esmail-tabar 2006, p 127). Recently a number of theorists have insisted on the difference between managers and leaders. For example, Benis is believed to survive in the 21st century, we need a new generation of leaders (leaders, not managers). It is important to distinguish between the two. Leaders can overcome the chaotic and unstable. Sometimes they work, we seem to be conspiring against the conspiracy, but if they do leave, they certainly allay unrest. While managers will submit (Benis, 2001, p 7). Management means to take advantage of the innate system - experiences accumulated an institution - now is the time to reach the target. But, following the formation of the present tense, for what will be the future system. Therefore, the system is always being creative, guaranteed. (Jordan, 2000).

Starat (2003) stated that the main task educational leaders in school should communicate with teachers and students, so that a quality learning for all children to rise. Every manager should such a mechanism as the core of the management to consider. Robinson (2006) The meaning of educational leadership as a core teaching and learning contracts. Investigation of two terms would be useful: 1 - It determines that school leaders need to know what, if you are looking to improve teaching and learning in schools. 2 - It establishes school characteristics and culture of teachers and students, the principals the leadership of the school.

By looking at the history of domestic and overseas research shows that many of them, such as Sobhani-nejad (2000), between the parents and the students' participation in school, there was a significant relationship. Also, Rezaali (2003), quoting Sobhani-nejad (2000), noted the effect of human relations teacher focuses on students 'mental health, the results of this study show that the human relations teacher and students' mental health, there is relationship significant. In other words, with 98% certainty, be judged to be a teacher with good human relations can affect the mental health of students. According to research, Hasan Bagllu, and Navid Adham (1993), quoting from Davoodi and Abdullahi, associations and clubs, cultural and artistic growth and development, strengthen the spirit of collectivism, the tendency to group activities, role playing, will be positive and productive, enriching leisure, cultural and educational development of students' participation in the planning. Also, according to the Rokhbakhsh findings (2000), quoting from Davoodi and Abdullahi, the students' participation in various school councils, in addition to enhancing their mental creativity, strengthening their skills in social and political decisions, and the self-destiny. Based on the findings of Sobhani-nejad and Iymani (2003), the rate of participation in social and political committees and councils, students, at least, and the scientific and educational cooperation and health committee, on average, also participation in cultural, religious, sports, business, finance, advertising, and event level are high. Mohgannizadeh (1996), quoting from Davoodi and Abdullahi (2012), in his study, found that few of the students participating in extracurricular activities are professionals. And many of them have not experienced even participate in an extracurricular activity. In this regard, Ghazaei (1996) quoted from Davoodi and Abdullahi (2012), reached the conclusion that 63% of female students in grades three and four high schools in different districts of Tehran aren't willing to work and collaborate in the community and only 27% are interested in this type of work.

Litwood and Jentzi (1999), conducted a comprehensive study to assess leadership, teachers, parents and climate and its impact on schools and students presented the results of this was that the family (parent) and organizational climate. The school students participated at a high level, and the impact of teacher leadership on student participation is low and negligible. Wood (1990), based on the study, believes that despite the stresses and concerns expressed by schools, students are not really growing community involvement. He believes that the way teachers teach school

enterprise search, is a significant element in the growth of social participation of students. Based on findings in Wilms (2000), there are unhappy students markedly in different schools. Correlation between the sense of belonging to the school, and students' participation in school is average, and only 26 percent of students participate in high school activities. This is such a problem because the child lives in a family that has a low socioeconomic level knows, and that live in families that are single parents. He believes that the participation of high school students show a good atmosphere, a close relationship between students and teachers, and high expectations for student success. Indicate a significant difference in the findings of his participation in male and female. According to Finn (1993), a strict enforcement of the school as an important factor in participation as students, and believes that the strict implementation of the law does not apply to the students participation at school. Johnson and colleagues (2001), state that the school environment has a powerful impact on students' participation and sense of belonging to the school considers acquisition and learning and believes that students can not only engage students in school.

#### **Research method:**

The goal of this study is applied, and its method is correlation. The aim of researcher is find the relationships between variables. This means that whether or not there is a relationship between two variables? And what is the significance of the correlation. Therefore, in this study, the role of variables such as principal, teachers and parents leadership in participation of students, in students themselves opinion, have been studied.

#### **Statistical population sample and sampling method:**

The study population included all male and female students in the fourth grade, and high school principals and teachers of Bushehr province, in the 2011-2012 academic year, with a total of 8,700 students, and 1,194 teachers and principals. Among all students, there are 4365 male and 4335 female.

Table (3) distribution of the sample based on their study field

Field	Students			Total
	Experimental	Mathematical	Humanianarity	
Abundance (N)	140	135	140	415
Percent	33.7%	32.6%	33.7%	100%

Table (4) distribution of the sample based on sex

Sex	Students			Principals and teachers		
	Male	Female	Total	Man	Woman	Total
Abundance (N)	210	205	415	210	205	415
Percent	50.6	49.4	100	50.6	49.4	100

To determine the sample size based on Cochran formula sample is 415 high school fourth grade boys and girl students and 415 teachers and principals. In this study, based on the condition, multi-stage cluster sampling was used. For this purpose, at first, researcher divides 9 areas of Education system into three regions: north, south and center, and in each district, schools were randomly selected. Then, in each region or cluster of schools selected randomly based on boys and girls ratio, the population was selected.

#### Data collection tool :

According to the researcher's perspective, students and principals, and teachers, in the present study, two questionnaires were used to collect research data: 1- Student questionnaire; 2 - Teachers and principals' questionnaire. The initial list were faculty members and a number of experts in the field of educational sciences , and while they were asked to comment on the individual components by the write their detail. Thus, the total extractive components of students' participation in school, 27 parameters were confirmed. In this form, the general explanation on how to complete a questionnaire asking students about general characteristics (gender, name of school) has been proposed. In designing the questionnaire, students are trying to make the texts in terms of wording and writing in a way that is designed for being understandable for high school students (though the runtime will be given adequate explanations with appropriate examples students).

So, in this questionnaire, the following explanation in order to gain the trust and confidence of students to accurately honest response range was raised six times in each component, and the students were asked in each case, one of the options by ((never)), ((very little)), ((little)), ((middle)), ((high)), ((very high)) throw mark. Validity was satisfactory. The resulting correlation coefficient was equal to 0.7959, which is significant at the 95% level, and shows that the question as to the ability of students to gather opinions about the considered and trustworthy factors. Also, when analyzing data, the coefficient alpha was calculated for the questionnaire, the number was 0.9624, which represents the reliability of the questionnaire is acceptable.

In order to view comments dungeons secondary school principals and teachers, the principal and teacher leadership and its impact on students' participation in school affairs, it has been

developed in a questionnaire. And aim to achieve leadership effectiveness and teacher participation in school affairs. Components in the form are 30 foelds. Range used for the response, as is a range of 5 times. The initial list of the supervisor of education and a number of experts were, and they were asking about the individual components subject to express their opinion. Having received their opinions, discuss the components were conducted. Thus, the questionnaire was confirmed. In order to check the reliability of 30 of the teachers (students) completed form, were asked within two weeks, and then again to complete the form, visit correlation coefficients were calculated for the first and second. The resulting correlation coefficient was equal to 0.7154, which is significant at the 95% level. However, the validity of the questionnaire was measured with alpha coefficient, the results are equal to 0.6944, which confirms the validity of the questionnaire.

Statistical methods for data analysis:

In data analysis, firstly with using descriptive statistics techniques such as frequency distribution tables, one-dimensional, relative frequency, mean and standard deviation of all variables were described. In inferential statistics, data analysis in two variables and in the analysis of the two variables, each of the research hypotheses using advanced inferential statistics, such as Pearson correlation coefficient for (hypotheses 1, 2 and 3) and t test for hypothesis 4, were studied.

## Results

To achieve results, the rate of students' participation in various school activities was analyzed in Table 5.

Table (5) the rate of students' participation in school activities

Activities	Samples	Mean	Standard deviation
School training affairs	415	4.61	.97
School religious affairs	415	3.23	1.05
School health affairs	415	2.6	1.12
School administration affairs	415	2.1	1.17
School cultural and art affairs	415	2.3	1.08
School entertainment, sports and entertainment affairs	415	3.4	1.02
School disciplinary affairs	415	3.5	.95

Based on data in Table 5, in students' opinion, their participation in educational and recreational activities at a high level, and other activities at a moderate level. Participation of students to

express themselves in such areas as entertainment affairs, religious affairs, education and disciplinary affairs, more than in other areas have shown an interest. While a low level of interest and participation in health care affairs.

Table (6) correlation between principal, teachers and parents leadership with students' participation in school affairs

Variables	Samples	Mean	Standard deviation	r	t	significance level
Principal leadership and students' participation in school affairs	415	42.5	8.1	0.4	8.7	0.05
Teacher leadership and students' participation in school affairs	415	34.7	6.2	0.41	9.15	0.05
Parent leadership and students' participation in school affairs	415	34.8	6.7	0.43	10.7	0.05

Based on the above data, the Pearson correlation and t can be obtained from the students, suggest a somewhat stronger positive relationship between the variables and the participation of leadership, and the participation of the students led teacher, and the leadership in parents and participation in school affairs. This means that much of the support, assistance and cooperation of principals, teachers, schools and parents with students on their participation in schools are greater participation of students in schools is also higher. The relationship is significant at the level of ( $P < 0.5$ ).

Table (7) correlation between principal, teachers and parents leadership with students' participation in the school affairs from perspective of principals and teachers

Variables	Samples	Mean	Standard deviation	r	t	significance level
Principal leadership and students' participation in school affairs	415	39.4	6.1	0.3	5.7	0.05
Teacher leadership and students' participation in school affairs	415	41.7	7.2	0.40	7.15	0.05
Parent leadership and students' participation in school affairs	415	34.8	6.7	0.41	9.7	0.05

As can be seen in the above table, the Pearson correlation coefficient and t the principals and teachers indicated a strong positive relationship between the variable part of the leadership and participation of students, led by teacher and student participation in school affairs. This means

that much of the support, assistance and cooperation of principals and teachers in schools with student participation in higher levels of student participation in school affairs, as more. The relationship is meaningful at the level of ( $P < 0.5$ ).

Table 8. Comparison of female and male students' participation in school affairs.

Sex	Number	Mean	Standard deviation	Degrees of freedom	T value	Significant
Boy	210	24.5	6.9	413	-2.1	0.5
Girl	205	25.8	5.5			

The observed difference between female and male students' participation in school affairs, based on the t test ( $P < 0.5$ ) is significant. Thus, the mean value of female and male students' participation in school affairs, it can be said that the participation of female students is greater than male students in schools affairs.

Regression results all independent variables in the in Table 9 with the participation of students in schools

Stage	Entered variable	R value	R2 value	Value added to R2	B coefficient	Beta coefficient	T value	significance level
First	Parent Leadership	0.427	0.182	-	0.402	0.427	9.6	0.001
Second	Leadership	0.484	0.234	0.52	0.201	0.259	5.3	0.001
Third	Teacher Leadership	0.491	0.241	0.007	0.141	0.139	2	0.001

Based on the above data, it can be said that the three variables of the independent variables entered into the regression equation, and the rest were excluded from the regression equation. First, the leadership of parent variables in the equation, and only 2.18 percent of the variance is explained by students' participation in school affairs. Beta coefficient indicates a positive relationship between the variables of parent leadership and participation in school affairs. This means that much of the support, assistance and cooperation of parents with students in their participation in schools are greater participation of students in schools is also higher. Secondly, the leadership of the variable into the regression equation, and 2.5 percent is added to the explanatory power of the model, and then to 4.23 percent completed. Beta coefficient indicates a positive relationship between the variables of leadership and participation in school affairs. This means that much of the support, assistance and cooperation of school principals with the

participation of students in schools are greater participation of students in schools is greater. The third variable to enter the regression equation is the lead editor 0.7 of the explanatory power of the model is added to 1/24 percent tentative. The beta coefficient indicates a positive relationship between teacher leadership and student participation in school affairs. This means that much of the support, assistance and cooperation of teachers in schools with student participation in schools are greater participation of students in schools is greater. In general, the three variables of the independent variables were entered into the regression equation, 24.1 percent of the variance have explained by the participation of students in the school .

### **Conclusion**

In general, the findings show that the students' participation in school activities, in the students' perspective is high. Participation of students to express themselves in such areas as entertainment affairs, religious affairs, education, and disciplinary matters, more than in other areas have shown an interest. While a low level of interest to participate in the school health affairs. Therefore, the findings of the research did not match with findings of Moghannizadeh (1996), and Ghazaei (1996), and Wood (1999), and Wilms (2000) . However, the results of this research are consistent with findings of Sobhani-nejad (2000), and Litwood & Jentzi (1999), which consider participation of students in high school as high.

Our findings indicate that the between level of leadership and participation in school affairs, there is a significant positive relationship, meaning that no matter how much support the collaboration and assistance the students' participation in school management school more if the amount is greater participation in school affairs. The results of this study did not match with studies of Litwood & Jentzi (1999), and Finn (1993). But are consistent with the results of Sobhani-nejad (2000), and Johnson and colleagues (2001).

Based on these findings, between the level of teacher leadership and participation in school affairs, there is a significant positive relationship. This means that much of the support, assistance and cooperation of teachers and students in schools with higher school participation rate are greater participation in school affairs. The results of this study did not match with Litwood & Jentzi (1999), Fin (1993) . But are consistent Sobhani-nejad (2000), Rezaali (1382), and Wood (1999), and Johnson and colleagues (2001), and Wilms (2000) .

In the findings about parental participation in school leadership, the relationship between these two variables is positive and significant. That support, cooperation and encouragement of parents, have a very important role in students' participation in school affairs. The results of the research are consistent with Litwood & Jentzi (1999), and Wilms (2000), and Sobhani-nejad (2000).

According to the findings, between the participation rates of boys and girls in schools, there are significant differences. The observed difference between the means, it can be said that the

participation of female students in schools is higher than male students. The results are consistent Sobhani-nejad (2000), and Wilms (2000) .

In general, the analyzes made in this study to be said about participation in the school's average in seven areas of the school is too large. This is his favorite spot is the growing level of participation of students with school work.

### **Practical recommendations:**

The students expressed their interest to participate in such kind of entertainment, religious affairs, education and disciplinary matters, more than in other areas. The lowest level of their interest is to participate in cultural affairs, health and school administration affairs. It has to wonder, because on the one hand, they need to explicitly reveal recreation, and the other is a pity that due to the lack of appropriate educational activities, they are not aware of the importance and validity of cultural activities, and the lowest these are matters of interest. Also, they are keen to participate in school health affairs. While it is also very important, and require more attention. Therefore, it is suggested that principals, teachers and parents to engage in these activities, must use appropriate motivational techniques.

The female students significantly more than male students wishing to participate in school affairs schools. So, the principals and practitioners of schools should provide a favorable context for their participation. Principals and teachers in boys' schools should use the optimal stimulus (human relationships, emotional intimacy), to encourage students to more participate.

- School principals and teachers are recommended:

A) To create a warm and friendly environment for students with full commitment and security to their teaching duties, and to respect themselves and others, and to trust each other.

B) To create a school climate in which students enjoy the spirit of the group, and students without aggressive and difficult to work well together.

C) To be flexible and, when necessary, to control students' activities and to conduct honest.

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*American Indian Students in “Culture Blind” Schools*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012



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## **Intro**

American Indian students have the lowest educational attainment rates of any group in the United States. Many American Indian students perceive their current classroom experiences as unrelated to them culturally. Insisting that the culture of school is more important than culture of students' homes is form of cultural imperialism. Educational institutions believe that they offer a "culture blind" education to all American students; an education where race and cultural backgrounds of students do not matter, a reportedly culture-free zone.

Researchers have attributed the educational disparity gap that American Indians experience to the lack of cultural relevance in mainstream educational settings. The rate of high school graduation for American Indian students is 46% compared to a national average of 89%. Only 17% begin college, compared to a national average of 62%. Of this 17%, only 4% survive the first academic year. 11% of American Indians have college degrees, less than half the norm for the rest of the country (American Indian Education Foundation, 2011).

The idea of cultural blindness masks entrenched inequality. Educators assume that racial harmony is the norm in cultureless classrooms. Many view the underperformance of American Indian students in education as merely representing the lack of individual hard work and determination. Current educational disparities are viewed as a reflection of individual underachievement and lack of educational potential.

A continuing educational gap in access to higher education, in a knowledge-based economy affects the socio-economic status of families and tribes. Many American Indian families depend on public education as a pathway to upward mobility and increased opportunities. Reservations remain economically underdeveloped, and the full potential of many American Indian students, untapped.

Both Gallup and Kaiser Family polling data indicate that the majority of white Americans believe that racial discrimination no longer exists, that we live in a post-racial, color-blind, or race neutral society (Gallagher, 2012). The myth of color and cultural blindness maintains white privilege by negating the reality of racial and cultural inequality that American Indians face in American institutions.

## **History of American Indian Boarding Schools**

Historically, education has been used as a weapon of colonization against American Indians. The American Indian boarding school system can be described as a war in disguise, a war to attain complete cultural supremacy. Education was used as a weapon to remove and isolate children from their families, diminish tribal populations, and extinguish tribal cultures.

Differences in the perception of education exist among dominated minorities, some resist "colonial education" while others view education as a path to economic security for their families. Boarding schools started as an experiment with Indian prisoners at Fort Marion, in St. Augustine, Florida. The Bureau of Indian Affairs and churches ran boarding schools. Money

was deducted from annuities if children weren't sent away to schools (Reyhner, 2004, p. 47). Tribes suspected that boarding schools were set up to divert their treaty money.

After the Civil War, the Catholic Church developed the largest number of mission schools, using government funding. Cultural repression was emphasized in boarding schools. The term *ethnocide* refers to the destruction of one's ethnic culture. Children were subject to the repression of any previous cultural ties such as their names, languages, and religion. Modeled on the emerging prison system, military style training and corporal punishment were routine. Physical and sexual abuse, and death from disease was rampant (Bear, 2008). Children were removed from their families and tribal communities, as young as the age of five, up to age eighteen (Daniels, 2012). Runaways were returned by law enforcement. The impact of American Indian boarding school practices on parenting skills, families, and tribes, has yet to be fully understood.

The war against American Indian cultures, and for complete assimilation, was waged overtly. The infamous quote of Carlisle Indian Industrial School founder, Richard Henry Pratt, summarized the intent of these schools, "Kill the Indian, Save the Man." (Child, 1998 p. 54). As succinctly stated by Reverend A.J. Lippincott at a Carlisle commencement, "The Indian is DEAD in you. Let all that is Indian within you die! You cannot become truly American citizens, industrious, intelligent, cultured, civilized until the INDIAN within you is DEAD." (Child, 1998, p. 77).

Retaining family bonds was difficult given the cost of transportation to boarding schools. The cost of round trip train fare was over thirty dollars; while per capita annual income for American Indians was eighty-one dollars (Reyhner, 2004, p. 45). Students were a source of cheap labor for local farms. The students sometimes lived with white families in a practice called "outing". The emphasis was on learning a trade or basic skill to become part of an unskilled labor force. The lack of professional training underdeveloped the economic potential of families and tribes.

In 1865, President Grant recommended that American Indian children be removed from their homes in order to achieve the goal of establishing an assimilated cultural identity in government-run schools, instead of church schools (Child, 1998). Protestants fought to end all government funding of mission schools.

In 1923, the Secretary of the Interior formed the Committee of One Hundred, to review Indian government policy, including the practice of boarding schools. They recommended that reservation based day schools be established. (Reyhner, 2004, p. 203). By the 1920s, the Bureau of Indian Affairs changed from a primary focus on boarding schools, to attendance at public schools. By 1923 the majority of Indian children nationwide attended public schools (Reyhner, 2004, p. 200).

The 1928 Meriam Report found that the majority of American Indian schools were inadequate. This report specifically criticized the use of American Indian students as laborers, at a time when child labor laws prohibited these practices in many states (Reyhner, 2004, p. 208).

The Meriam Report supported the development of community day schools on reservations and the phasing out of boarding schools.

One legacy of the era of boarding schools are the high rates of historical trauma experienced in American Indian families. Historical Trauma theory argues that cultural trauma to a society impacts succeeding generations (Sztompka, 2000). Researchers have found that unresolved cultural grief causes generational emotional distress (PTSD).

The basis of historical trauma theory was developed with survivors of the Jewish Holocaust and Veterans of World War I and II. Similar to other traumatized populations, PTSD rates are higher among American Indians (22%), than among the general population (8%) (Brave Heart, 2011). American Indians continue to be exposed to more trauma than the general population. Eighty-five percent of American Indians experience trauma compared to 52% of the general population (Bullock, 2005). Trauma theory changes fundamental therapeutic questions from "What's wrong with you?" to "What's happened to you?" (Bloom, 2004). American Indians experienced colonization through a number of federal government policies including; wars, fraudulent treaties, forced relocations, incarceration on reservations, boarding schools, and tribal termination in the 1950s.

Historical trauma continues in multiple generations because the descendants of genocide are genetically at higher risks of developing PTSD (Kellermann, 2001). Grief resolution can occur through collective mourning, based on cultural rituals, and on a commitment to community healing (Whitbeck, 2004). Cultural practices that are retained, can be used for healing.

### **American Indian Educational Disparity**

The dropout rate for American Indians is three times that of non-Indian students, at a time when a high school diploma is a minimal qualification for entry-level jobs. Over one-third of American Indian young people drop out of high school. Only 46% of American Indians graduate from high school and 17% attend college. Only 13 percent of American Indians earn a college degree (American Indian Education Foundation, 2011).

It is important to look beyond the educational outcomes so many Indian youth face, and also examine the schools they attend. A 2012 ASHE report attributes American Indian attrition rates to the lack of representation of American Indians in curriculum and among teachers (McKinney, 2012). A U.S. Department of Education study identified the top reasons why American Indian students drop out of school: (1) *uncaring teachers*, (2) *curriculum* designed for mainstream America, and (3) *tracking* into low achieving classes and groups (Department of Education, 1991).

The campus climate of schools can be aggressively anti-Indian at times. The use of derogatory American Indian mascots in public schools seems to support the belittling of culturally important figures. Public schools continue to use sports mascots with names like "Savages", "Redskins", and "Fighting Reds". Sports mascots are often crude, cartoon-like depictions of "braves" and "chiefs". Religious symbols like face paint and feathers are used without respect and context, an overt message of religious intolerance and cultural disrespect. Beginning in the

1960s, the National Congress of American Indians (NCAI) campaigned against this demeaning use of native traditions and rituals. In 2005, the National Collegiate Athletic Association (NCAA) required colleges to retire demeaning mascots, but many public high schools still use them.

American Indian students perceive a cultural bias against them in classroom curriculum as well as pedagogical practices. Only 8% of American Indian students who drop out do so because of academic failure. Most complain about boredom, and perceived hostility from classmates and teachers which creates a difficult school climate. (Reyhner, 1995). Standardized testing has narrowed needed curriculum revisions and further disconnects teachers and curriculum from the lives of many American Indian students (Roppolo, 2007).

An analysis of social studies curriculum found that American Indians are largely depicted as victims, rather than recognized for their contributions to American culture (Journell, 2009). Any American Indian history that is covered in schools focuses on a limited time frame of pre-twentieth century history. Contemporary achievements of tribal self-determination are excluded from school curriculums, as well as a substantial pre-Columbian history of ancient civilizations in America. This serves to reinforce media images of American Indians as people who existed in the past. Americans can feel as though they have accepted people who only existed in the past (Willow, 2010). Nearly all states cease their coverage of American Indians after wars in 1860s, creating an incomplete narrative. This creates significant implications for the historical consciousness of all students, and especially for American Indian students.

Non-native teachers teach the overwhelming majority of American Indian students, whether on reservations or urban areas, in both tribal colleges and mainstream institutions. American Indian teachers can serve as important role models, but low educational attainment rates have contributed to a deficit of certified American Indian teachers. Teachers don't need to be cultural experts, but just aware of American Indian students and welcoming to them (Pewewardy, 2003). Good teachers can build upon diverse student cultural backgrounds. Lack of empathy from teachers is cited as a major contributing factor in drop out rates of American Indian students (Pember, 2010). Dropout prevention starts with caring and informed educators, many can benefit from cultural relevancy training.

While some states have passed legislation to support teaching about Americans Indians, no funding to support culturally relevant curriculum changes or teacher training accompany these measures. American Indians have struggled to gain a presence in educational curriculum. In the 1990s, a political "culture war" occurred in the United States regarding the presentation of public school history curriculum. Liberals asserted that a critical reading of national history needed to be presented; while conservatives felt that a celebration of "traditional" American historical accounts should be stressed. National educational standards, developed in 1994, did not expand the presence of American Indians in school curriculum. The original people of the Americas remain associated with the idea of "foreignness". American Indians appear once a year in school curriculum, as part of the mythology of Thanksgiving, where they are "guests" of the Pilgrims, or an occasional Indian massacre or battle is mentioned. American Indians have served in every war, beginning with the American Revolution. A 1988 United States Senate resolution acknowledged the influence of the Iroquois Confederacy on the American

Constitution. Imperial nostalgia has romanticized and belittled American Indians, belatedly showing approval of cultural aspects that were repressed by government policies in the past, yet unable to support the educational needs of American Indians in classrooms today.

Many whites today know little of American Indian history. The invisibility of American Indians in school curriculums supports Anti-Indian sentiments. As Elizabeth Cook-Lynn defines the term, "Anti-Indianism is that which treats Indians and their tribes as though they don't exist, the sentiment that suggests that Indian nationhood (i.e., tribalism) should be disavowed and devalued (Cook-Lynn, 2001, p. x). While overt expressions of racism against American Indians have been reduced, they have been replaced by a romanticized notion and commodification of American Indians (Denzin, 2013). Rather than acknowledging racial hierarchy, race and culture are now viewed as media symbols that can be consumed, and supposedly understood by anyone.

A strong relationship exists between language, culture, and cognition. Different linguistic communities conceive reality in different ways. According to the U.S. Department of Education, schools that support a student's language and culture are more successful in educating those students. The Department of Education Indian Nations at Risk Task Force identified top priorities as the need for culturally and linguistically based education, and the need to train more American Indian teachers (Locke, 2007). Schools can play a vital role in serving student and community needs at a time when American Indian languages struggle to survive as spoken languages.

With higher poverty rates, American Indian families may experience frequent relocations due to family hardships. Government data reveal that 27% of American Indian families with children live in poverty, rates that are more than double those of the general population (National Institute Health, 2012). A high level of absences is often the first evidence of dropout behavior (Reyhner, 2006). American Indian students are often placed in special education and basic skills programs, instead of culturally appropriate programs (Reyhner, 2004, p. 11). School discipline, detentions, and suspensions are higher for American Indian students than non-Indian. American Indian, African American and Hispanic youth are disciplined at higher rates and two to five times more likely to be suspended or expelled (Wallace, 2009, p. 47).

### **Educational Success and Resiliency Factors**

For students to succeed in school they must have positive beliefs about their abilities as students, and about the importance of education to their future opportunities. This correlation may be difficult on some reservations with high unemployment rates and few jobs. Only 6 of every 100 American Indian college students will graduate, and only 2 of these 6 will complete graduate or professional degrees (Alberta, 2001, p. 89).

One response from tribes to high university attrition rates resulted in the development of tribal colleges. In 1968, the Navajo nation founded the first tribal college, Navajo Community College, renamed Dine College in 1997 (Reyhner, 2004, p. 295). Tribal colleges are committed to providing culturally based education on reservations. There are now 32 tribal colleges, most of them two-year institutions, in 12 states. Ninety one percent of tribal college students are non-traditional, often older working parents, and many are single mothers (Williams, 2007). These

students take longer to complete their education due to both financial and family demands than traditional students.

Students at some tribal colleges face a digital divide in their educational pursuits. More than 90% of tribal populations lack high speed Internet access, according to the Federal Communications Commission (PBS, 2011). With less than 10% of tribal lands having access to broadband Internet service, some developing countries have a higher rate of access, according to the Department of Commerce. American Indian students on reservations also need to use limited funds on gas to drive miles to Wi-Fi locations. (Huffington Post, 2012).

Communities also founded American Indian charter schools; there are currently forty-four such schools in the United States (Reeves, 2009). The majority of American Indians are an urban population and do not attend tribal colleges on rural reservations, or charter schools, so there is still a great deal of work to be done to change mainstream educational institutions in order to change educational outcomes for the majority of American Indians students. The need for cultural and language retention programs are acute. Many tribes have reservation based language programs, but the majority of tribal members live off-reservation, without access to Indigenous language classes at mainstream schools and universities.

Developing an academic identity, and perceptions of social support systems are key factors in college persistence (Okagaki, 2009). Many American Indian students are first generation college students who can encounter a less familiar campus climate. Second generation college students have more factual information about college from their family and friends. Students who can successfully develop an academic identity are more likely to persist in academia (Montgomery, 2000, p. 387).

Students who have more positive perceptions of the university environment are more easily retained (Alberta, 2001).

When the factor of social support is examined, the role of faculty mentoring has the most significant impact on college retention. Students with at least one faculty mentor are more likely to succeed in college (Alberta, 2001, p. 96). Yet American Indians remain underrepresented among college faculty. According to the National Center for Education Statistics, nationwide there are a little over 7,000 American Indian faculty on college campuses (National Center for Education Statistics, 2012). American Indian faculty can connect to the important role that extended families hold in American Indian cultures, but they also face many pressures in academic environments which reward publishing more than community commitments. The lack of role models and precedents is revealed in student comments, "Statistically, we're not supposed to be doing this... We're not both supposed to be going to school and getting our education... you know---being Native Americans." (Montgomery, 2000 p. 392). A lack of role models in educational pipelines impacts student aspirations.

Successful American Indian college students learn how to develop a strong academic identity, while retaining strong cultural ties. In addition to the academic challenges that all students face in college, American Indian students will also face cultural adjustments. Those who have a strong sense of cultural identity are more likely to persist (Alberta, 2001, p. 89).

## **Tribal Cultural Values as an Educational Foundation**

Incorporating tribal values into mainstream schools would not only support educational connections for American Indian students, but can also enhance the learning environment for all students. Tribal values focus on how to be *respectful and generous*, how to *live in balance*, how to *withstand hardship*, and how to *receive blessings*. One way to encourage educational attainment may be to encourage more American Indian youth to become involved in their communities. Personal identity is based on how people view you and learning your place in the world with humility and grace. Without sustained interactions, cultural miscommunications can proceed unwittingly. For example, while American schools often emphasize the need to build self-esteem in students, many tribal cultures value humility above the concept of self-esteem (Reyhner, 2006b).

American Indian students need to develop a strong sense of both their tribal identity and also their academic identity. They must view their cultural identity as being compatible with a positive academic identity. Students who have a strong cultural identification and can successfully operate in a majority culture, have the most positive educational outcomes. Academic success does not need to detract from strong cultural identity.

School cultures that are more congruent tribal values will better serve the needs of American Indian students. College degrees can be viewed as an opportunity, rather than a barrier, as a part of life's journey. Education is a pathway of many journeys, schools that embrace tribal values can be an important part of this journey.

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Karnataka to Kalamazoo: Fifteen Years of "Twinning Programmes" between India  
and Michigan

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## INTRODUCTION

The Indian state of Karnataka is famous for its software industry, centered in the city of Bangalore (Bengaluru), that is transforming India from a lumbering elephant to an economic tiger. Bangalore is also notable for another kind of transformative software: an international educational innovation known as “Twinning Programs”. Pioneered in India in 1997 in a partnership between Christ College in Bangalore, capitol of the state of Karnataka, and Western Michigan University in Kalamazoo (Michigan, U.S.A.), it proved such a success that one hundred “twinning” programs modeled on this trailblazing linkage are now a hallmark of India’s higher education scene.

2012 marks the 15<sup>th</sup> anniversary of the internationalization of Christ College and the inauguration of its “Twinning Program” with Western Michigan University. This paper historically and analytically examines why “twinning” was introduced to India in 1997 through a partnership between a private Catholic college and an American Midwest state university; how together they created an American-model curriculum within an affiliated college that was tied to Bangalore University; how their joint 2+2 program built an academic bridge between Bangalore, Karnataka and Kalamazoo, Michigan that has graduated hundreds of students; and the ways it spurred the “internationalization” India’s private higher education sector.

Ms. Annesha Rai exemplifies this partnership. Ms. Rai is a young Indian woman who was born on the subcontinent, but grew up in the United Arab Emirates on the southern shore of the Persian Gulf. Her family who live and work in Dubai, one of the sheikdoms that comprise the UAE, are NRI’s, i.e. Non-Resident Indians. Many NRI’s desire to maintain their connection with their homeland and its culture, but also want their children to benefit from exposure to higher education in the U.S. and/or Europe. The twinning program jointly offered by Christ University and Western Michigan University offered both benefits.

In 2008 Ms. Rai returned to India to begin her higher education at Christ University in Bangalore, enrolling in the Western Michigan-Christ University “twinning program” in Business that had been initiated in 1997. After two years in Bangalore, during which she completed (60 credit hours in) business pre-requisite courses and general education, she transferred to WMU in Kalamazoo in 2010, and after two years in Kalamazoo, she graduated with a BBA in Finance in April 2012.

“A good amount of seniors who had transferred through the [twinning] program had wonderful things to say and highly recommended it,” says Rai. “I did it for the experience, as I love to travel and explore new cultures; also the quality of education is stellar. I think it’s a great idea because it gives you a very well rounded perspective of the world and culture. In my case, it gave me a totally different perspective on the world of

business.”<sup>1</sup> Ms. Rai, now age 22, has moved back to India and is working at a Singapore-based company named Wealth-X as a research analyst.

## ORIGINS OF TWINNING

Twinning was invented in Malaysia through a partnership between Western Michigan University and Sunway College. The inspiration for it originated in Malaysia's circumstances in the mid-1980s, when the demand for higher education from a growing middle-class outstripped the ability of the government to provide enough seats in its six government universities or scholarships for study abroad for Malaysians seeking a higher education. Prime Minister Dr. Mahathir Mohamad appealed to the private sector to help by creating private colleges that could offer access to higher education at an affordable price. Quick to respond was Jeffrey Cheah, President of the SungeiWay Group, a construction and real estate conglomerate. With no experience in education, he sought a partnership with a university abroad already popular with many government-sponsored Malaysian *bumiputras*: Western Michigan University in Kalamazoo.

Contracting to work together in January 1987, the SungeiWay Group and Western Michigan University devised a collaboration through which they would jointly create a private institution to be called Sunway College. In it Malaysian students could begin WMU bachelor's degree programs in Kuala Lumpur, then transfer to Kalamazoo to complete their studies. Twinning was conceived of as a form of technical assistance, by which an American public university authorized a foreign partner to offer the first half of American-model degree programs by replicating segments of WMU's curricula in a new private college. Through twinning, students could earn 60 credit hours in beginning courses in e.g. business administration, communications, computer science, engineering, psychology, and the physical sciences. Students who successfully completed the twinning program were guaranteed transfer of those credits to Kalamazoo. They could then complete their baccalaureate degree in about two years in residence in WMU. Hence the term “2+2” was used to describe twinning.

With savings of 40% compared the cost a full education overseas, the 2+2 scheme was especially appealing to middle class Malaysians from Chinese and Indian communities, who could not gain admission to local universities because of ethnic quotas, and were not eligible for government scholarships to study abroad.

Sunway College opened July 25, 1987 in rented quarters in Petaling Jaya, an edge city west of Kuala Lumpur and first intake of 67 students, mostly Chinese and Indian Malaysians, began their studies in WMU-model classes. A faculty member from Western Michigan University served on-site as a full-time Resident Director of the Twinning Program. After two years, the pioneer cohort transferred to WMU in 1989 and graduated in 1991. By 1992 the Sunway-WMU program had grown to 350 students. Sunway added

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<sup>1</sup> “University Keeps Reaching Out to International Students”, Kalamazoo Gazette, August 19, 2012.

twinning programs (2+1 and 1+2) with universities in Britain, Australia, and New Zealand; enrollment burgeoned to 3500.

The SungeiWay Corporation began construction of a 22-acre campus as the centerpiece of Bandar Sunway, a satellite city it developed west of Kuala Lumpur. The new Sunway College was opened by Prime Minister Mahathir in April 1993; with purpose built classrooms and hostels, it was the first private college in Malaysia to offer students the experience of a complete campus environment rather than commuting to classes in converted shop-houses. By its 10th anniversary in 1997, Sunway was largest private college in the country, the WMU 2+2 enrolled 450 students, and WMU had become the top destination in the U.S. for Malaysians, enrolling 700 students from that most pleasant peninsula.<sup>2</sup>

In 2004 Sunway College was upgraded to Sunway University College by the Ministry of Education, able to offer its own 3+0 degrees, and in 2010 was recognized as Sunway University, with Jeffrey Cheah its first Chancellor. Enrollment in Sunway's education institutions now stands at 16,000, with about 30% international students from 80 countries. The WMU-Sunway linkage celebrated its 25<sup>th</sup> anniversary in 2012, but the twinning program has come an end, since Sunway University offers its own degrees. It continues in a new form, as an articulation agreement, that will facilitate transfer of Sunway students who still wish to earn a undergraduate degree , or seek a Masters or Doctoral Degree at Western Michigan University. At last count, there were 93 Sunway students enrolled in WMU.

## **PASSAGE TO INDIA**

The success of Sunway College-WMU twinning program was confirmed with the graduation in 1991 of the first cohort of students who had started in 1987, and transferred from Malaysia to Michigan in 1989. In 1992, with the end of Cold War and Globalization the buzzword of a new era, WMU sought to replicate the Sunway 2+2 model elsewhere in the world.

WMU turned its attention to India, where the Finance Minister, Manmohan Singh, had launched economic Liberalization in 1991. Confronted by a crisis that threatened the country with bankruptcy in 3 weeks, he began the opening up India's protected and heavily regulated economy. Reducing customs duties, removing export restrictions, encouraging direct foreign investment, and promoting privatization, he launched India's joining Globalization. As he began dismantling India's "License Raj", its lumbering elephant of an economy began to speed up. WMU's professors of Indian origin urged exploring the possibilities for academic collaboration.

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<sup>2</sup> Sunway College, *Collegiate Chronicle: Edge to Excel: Anniversary Issue 2002*, Kuala Lumpur, Malaysia 2002.

A WMU delegation conducted a reconnaissance of India in early 1996. Our mission, which included myself as the Executive Director of International Affairs, visited New Delhi, Bombay, Cochin, Madras, Manipal, and Bangalore. Bangalore is located in southern India, at the center of the high dry Deccan plateau. A garrison town during the British Raj, with reputedly the best climate in India, Bangalore was probably best known as the home of Kingfisher beer, but was beginning to develop as a IT center with home-grown software companies and call centers.

In Bangalore we visited Christ College, a private institution that had been founded in July 1969 as an “affiliated college” under the supervision of the state-run Bangalore University, which set the curriculum and validated its examinations. It was located in a leafy suburb, with a dairy across the street, and cows wandering along the edge of a two lane road.

Christ College was a Catholic school operated by the Carmelites of Mary Immaculate (C.M.I.) The white robed C.M.I. are India’s first indigenous religious congregation for men, founded in 1831 by the Blessed Kuriakose Elias Chavara of the Syrian-Malabar Catholic church. His vision was that people from all walks of life, especially women and the lower strata of the caste hierarchy, should have access to higher education. They have dedicated themselves to building schools and hospitals throughout India and are now an order with a global reach.

We met with the Principal Dr. (Fr.) Antony Karayil CMI and many other fathers of the CMI order. They were highly educated men with doctorates from leading universities around the world; we met one priest with two doctorates, from Columbia and Oxford universities. We toured the immaculate and beautifully maintained campus, with white painted low-rise modern building set in garden-like landscaping. Its 4000 students were neatly turned out: young men in blue blazers and many young women in saris while others wore more casual dresses or blue jeans. Christ College impressed all of us as a “class act”. It was the most attractive, sophisticated, and cosmopolitan of all the schools visited. Our positive take was confirmed by visits to U.S. Educational Foundation (Fulbright program) offices in New Delhi, and U.S. Consulates in Mumbai (Bombay) and Chennai (Madras).

Over the next year we negotiated a 2+2 “twinning program” in business and computer science that would lead to BBA degree in business or BS in computer science at WMU. The WMU-Christ College contract was signed in February 1997. This was Christ College’s first international partnership, and WMU’s first academic linkage in India, commemorated by a large brass plaque that is prominently displayed at Christ University today.

The twinning arrangement authorized Christ College to offer the first half of WMU bachelor degree programs by replicating segments of WMU curricula. Christ College courses were to be clones of WMU courses, using identical syllabi, titles, numbers, teaching formats, texts, tests, and other evaluation methods as their models on campus in Kalamazoo. Through twinning, students would earn 60 credit hours in the beginning

courses of business or computer science and general education. In effect, participants could complete their freshman and sophomore years without leaving India.

Students who successfully completed the twinning program were guaranteed transfer of their Christ College credits into WMU. This meant they could move seamlessly from Bangalore to Kalamazoo with their coursework automatically credited as courses of the partner university. They could then finish their baccalaureate degree in about two years of residence at WMU or through transfer to another institution.

WMU set admission standards for students entering the program, as well as for faculty employed by Christ College who would teach in the 2+2 program. Quality was monitored through regular visits by WMU administrators and faculty, reviews of sample student tests, papers, and projects, and by analyzing the academic progress of transfer students.

The pioneer American twinning program in India began in June 1997 with approximately 50 students. Christ College recruited the first intake of students from throughout India, from neighboring countries including Bangladesh and Sri Lanka, and from the large Non-Resident Indian (NRI) communities in the Persian Gulf area. The first cohort of students transferred seamlessly to WMU in Fall 1999 and the first batch graduated two years later from WMU in April 2001. A delegation from Christ College headed by the Principal, Fr. Sebastian Thekkadathu CMI, was seated on-stage and recognized during the commencement ceremony. Since then hundreds of students have participated in the WMU-Christ University 2+2 program, contributing to WMU's enrollment from India that surged at the turn of the century, reaching 600 in 2001 and peaking at 610 in 2002.<sup>3</sup>

## WIN WIN

Twinning between Bangalore and Kalamazoo has proved to be a “win-win” arrangement for both partners. The advantage to Indian students has been being able to earn a recognized degree from an established university abroad, while their families pay only about 60 percent of what it would cost to pursue a full degree program overseas. Spending the first two years in their home country has also given students, some of whom may be only seventeen years old, time to mature before having to adapt to a foreign environment.

The advantage for Christ College was access to “American-model” higher education with its distinct approaches to curriculum and assessment. A twinning program, like the American university from which it originates, combines a range of disciplines under one umbrella, and through “general education” requires students to broaden their exposure and better understand the interrelated nature of disciplines.

Twinning program students were also subject to the American system using continuous assessment through a variety of means, including term papers, team projects, quizzes and

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<sup>3</sup> Suniti Phadke, “For that Dream Degree”, *Deccan Herald*, September 26, 2003.

tests, and their final grade represented a cumulative average, rather than having a final mark based on a comprehensive final examination. Exposure to different teaching approaches while still at home eased the transition for Indian students to the U.S. classroom.

The advantage for Western Michigan University was a steady stream of mature, well-prepared students who are acclimated to foreign-style classes, ready to begin their major sequences as upper-division (junior-senior) students. Internationalization of the curriculum was promoted by challenging the faculty to write syllabi to be taught both at home and abroad, and campus life enlivened by the regular presence of students from India, NRI communities in the Persian Gulf and East Africa, and neighboring countries such as Bangladesh, Nepal, and Sri Lanka. The university's fiscal health also benefitted from self-financing undergraduate students who pay out-of-state tuition fees.

### **BANGALORE'S BOOM, CHRIST UNIVERSITY 'S RISE**

My last visit to Christ College as WMU's Executive Director of International Affairs was in March 2004, as Fr. Sebastian Thekkadathu , who presided over the implementation of "twinning", was finishing his term as Principal, and Dr. (Fr.) Thomas C. Mathew was preparing to take the helm as the new Principal. About 250 students were studying in or had graduated from the 2+2 program at that point. Outside Christ College's gate on Hosur Road, Bangalore was beginning to boom as India's IT center, South Asia's Silicon Valley. Construction was beginning for Bangalore's first flyover, foreign IT firms were starting to arrive, and the CMI Fathers were constructing a new classroom building that would become a Junior College.

In 2011 I returned to Bangalore as a consultant for WMU. Returning after seven years, I was struck by all the changes, beginning with a sparkling new airport, 40 kilometers outside of the city (pop. 6 million). As the plane descended on its landing approach, whole new American-style gated communities could be seen, many with swimming pools. A Metro rapid transit system was under construction, and Bangalore was hosting the World Cup of Cricket. The night of my arrival the roar from the stadium was audible at the hotel as India battled England to 318-318 tie.

When the taxi dropped me off at what I remembered as Christ College, I hardly recognized the place. Towering over the entrance gate was a multi-story, glass fronted tower where I began my visit at the Office of International Affairs with Prof. Suniti Phadke, Director, an old friend. It is one of three massive new buildings, dwarfing the garden-like old campus that was Christ College.

Christ College had metamorphosed into Christ University. The University Grants Commission (UGC) conferred Autonomy in October 2004; it was reaccredited with A+ by the National Assessment and Accreditation Council in May 2005; and, most important, granted "Deemed University" status in July 2008, freeing it from oversight by Bangalore University. "The Union Human Resources Development Ministry declared Christ

College as a Deemed to be University as Christ University on July 22, 2008 under UGC Act 1956.”<sup>4</sup>

Enrollment had more than doubled to 10,000 students, and Christ University now offers 35 undergraduate programs; 29 post-graduate programs; 17 M.Phil. and 16 Ph.D. programs. It is the pride of Bangalore, ranked among the Top Ten universities in India, and Number One in Bangalore in ratings by Indian magazines and papers such as *India Today*.<sup>5</sup>

The rise of CU emblematic of what has happened to Bangalore. Fifteen years ago Bangalore was just beginning to emerge as a hi-tech hub. One faculty member who taught computer science at Christ College was Mrs. Sudha Murthy; in 1998 she took me to meet her husband, Mr. N.R. Narayan Murthy, the founder-CEO of a computer service company named Infosys. He recounted how they'd used his wife's dowry of \$500 to help found the company in the early 1980s. By the 1990s Infosys served American clients fixing legacy programs and doing back-office work taking advantage of the 10½ hour time difference between the US and India. Narayan Murthy, who today is billionaire, is credited with inventing the IT outsourcing services model that became a huge success for India, and made Bangalore one of the world's up-and-coming cities.

Once on the edge of the city, with a dairy across the street, Christ University is now right in the “IT Corridor.” A city-block sized Oracle office building has sprouted next door, and another IT company is across from the main gate. The college wall fronting Hosur Road is gone, lost to a widening that added four lanes, and instead of meandering cows there is now horn-blaring traffic headed to Electronic City, anchored by the 40-acre campus of Infosys with more than 30,000 employees on-site (and 153,000 worldwide). A glitzy new mall with 100 stores has opened a few blocks from the university, as well as Manchester United-themed sports bar. Moving about town, I glimpsed the logos of IBM, GE, Honeywell, HP, and Cisco, as well as Wipro, India's other homegrown software giant. In the environs of Christ University, all that remains from the past is a Hindu temple on a black rock jutting into Hosur Road that forces traffic to squeeze around.

Christ University is India's first Catholic University. The crown jewel of the CMI order, like the Georgetown University for the Jesuits or the University of Notre Dame for the Congregation of the Holy Cross. Christ University's motto---“Excellence and Service”---defines its mission. Says Fr. Thomas, the University's Vice Chancellor: “We are committed to our motto of providing holistic education through the development of intellectual competence, personal, interpersonal, and societal skills. We want all of students irrespective of their nationality to grow and prosper in an environment of religious harmony and secularism, which are the core values of the country.”<sup>6</sup>

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<sup>4</sup> [www.daijiworld.com](http://www.daijiworld.com), Sept 17, 2012

<sup>5</sup> <http://www.karnataka.com/education/ranking-2012/>

<sup>6</sup> [www.daijiworld.com](http://www.daijiworld.com), September 17, 2012

Under the dynamic leadership of Fr. Thomas, who was the new principal in 2004, and became Vice-Chancellor with University status, Christ University aims to become a world class educational institution. His aims include providing facilities comparable to the best educational institutions in the world, building a qualified faculty with exposure to international standards and practices, and attracting students from many different countries abroad. A special outreach targets NRI parents, who are looking for higher education with international standards but with an Indian cultural ethos. Wooing NRIs works: in 2010 Christ University enrolled 270 students from 37 countries.

When we met in January 2012, Vice-Chancellor Fr. Thomas C. Mathew stressed to me how important and special the WMU relationship has been for Christ University. It was their first international linkage, and through the 2+2 twinning arrangement, [then] Christ College made major changes in its curriculum, calendar, and faculty expectations:

- 1) Christ College changed all of its curricula from year long classes to semesters; it now operates on a two semester calendar.
- 2) adopted continuous assessment in place of the comprehensive final exam at the end of the year;
- 3) adopted grades and the G.P.A. (grade point average) to parallel the Indian system of “marks”, recording both on student transcripts; and
- 4) trained at least 35 faculty in the “American way” of higher education. Faculty learned to incorporate frequent assessment, and move beyond “chalk and talk” lectures to make use of team projects, group presentations, power-point shows, quizzes, and tests. Some traveled to Kalamazoo to meet the professors who wrote the syllabi, observe interactive classes and meet the professors who wrote the syllabi and taught the same courses.

Fr. Thomas said the American-model alternative from Western Michigan University helped the college’s application for autonomy from Bangalore University and ultimately was the “keystone” (his word) for its earning “deemed university” status in 2008.

Fr. Thomas also acknowledged that the benefits of working with an American university gave Christ College experience with international academic cooperation, and in the last 7 years it has developed an extensive array of partnerships including a cooperative MBA with Virginia Commonwealth University in Richmond, VA and a dual degree International MBA with the University of Applied Sciences in Wurzburg-Schweinfurt, Bavaria, Germany. Articulation arrangements have been developed with Griffith University in Australia 2+2; Liverpool Hope University, Sheffield Hallam University, and Swansea University, all in Britain; and the Catholic University of Lille’s School of Management, in Lille, France. Christ University created an India Gateway Program that attracts study abroad students from American and European colleges and universities.

Once Christ University could confer its own degrees, the 2+2 bachelors of business administration program that was the heart of the WMU-Christ University twinning program was no longer as attractive to large numbers of Indian students.

After 2008, Christ University adapted the core of the WMU-model Bachelors of Business Administration curriculum to build the foundation of its own 3-year BBA degree,

allowing the option of transferring overseas to continue for students who could leave after two years. The first class of the Christ University 3-year BBA started in 2008, and graduated in April 2011. Out of its 150 students, only about 10-12 planned to go abroad; the rest stayed in India. CU is now recruiting BBA classes of about 115, and Prof. Phadke estimates that 90% of these students will stay in India, satisfied with their 3 year BBA degree. That meant WMU would no longer be receiving transfer cohorts of 50 to 100 students, but rather a handful at most.

With its 15<sup>th</sup> anniversary this year (1997-2012), the twinning program between Christ College and Western Michigan University is now being phased out. It is being converted into articulation agreement that will facilitate transfer for Christ University students from the new 3-year BBA program as well as many other Christ University curricula. It will also facilitate study abroad opportunities, as well as faculty exchange and research activities.

WMU is very pleased to have received hundreds of students from Bangalore who started in the 2+2 program and graduated with WMU degrees. We are also delighted that the WMU linkage was the “keystone” of the college’s application for “deemed” University status, and that the new BBA founded on the WMU-model curriculum is ranked the Number One BBA program in all of India.<sup>7</sup>

## CONCLUSION

In the final analysis, the twinning programs WMU pioneered in Malaysia and India have proved the most successful “internationalization” initiatives in the University’s history. Between them, the Sunway College and Christ College programs enabled more than 3000 students from Malaysia and India to begin their educations at home and complete their degrees in America. In addition, these two twinning program attracted a much broader international enrollment, drawing students from all over Southeast Asia, e.g. Cambodia, Vietnam, Indonesia, from the Indian subcontinent e.g. Bangladesh, Nepal, and Sri Lanka, as well as the Indian Diaspora in the Persian Gulf and Africa.

WMU was the first international partner of Sunway College and Christ College. The twinning program was a foundation stone of their curricula, ultimately contributing to their rise to university status. The twinning model, pioneered in Kuala Lumpur and Bangalore, inspired emulation in each country and ultimately contributed to the “internationalization” of the higher education sectors in both countries.

The Sunway College-Western Michigan University Twinning Program was the first in Malaysia, and its success encouraged development of a vibrant private sector in education in Malaysia that now numbers over 20 private universities and 40 private colleges. Twinning has become the hallmark of Malaysian higher education. Today 80,000 foreign students from 100 countries are studying in Malaysia’s twinning programs

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<sup>7</sup> <http://www.karnataka.com/education/ranking-2012/>

and 3+0 degree programs, making Malaysia the regional center for higher education in Southeast Asia.

The Christ College-WMU Twinning Program was also the trailblazer in India. It proved such a success that 100 “twinning programs” modeled on it are now a feature of India’s higher education scene. It opened the way for the development of a vibrant international education sector in India. Today, more than 340 institutes offer degree programs in collaboration with foreign providers.<sup>8</sup>

Looking back at the decade and a half of educational collaboration between Bangalore and Kalamazoo, connecting Karnataka and Michigan, linking India with America, the partnership forged between a small private religious college in south India and a large American Midwest public university has proved to be a “win-win” for all parties, opening the way for new forms of international education in India, and offering a microcosm of the globalization process connecting the south Asia, the U.S., and the world.

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<sup>8</sup> *Chronicle of Higher Education*, June 4, 2012,  
<http://chronicle.com/blogs/global/india-approves-process-for-collaborations-with-top-ranked-global-universities/33285>)

*Biology Teacher Beliefs and Practices on Learner-Centeredness: Perspectives from  
Lower Secondary Schools, Kandal Province, Cambodia*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

This study investigated teacher beliefs regarding learners, learning and teaching, classroom practices, competencies and adolescences as well as the translation of beliefs into their teaching practices. The researcher employed descriptive research survey and case study research design—exploratory and triangulation, which included lower secondary biology teachers (n=13) and students (n=543) for the surveys, selected biology teachers (n=8) for focus group discussion and selected teachers (n=4) for classroom observation from four selected lower secondary schools in Kandal province, Cambodia. Through the uses of five instruments such as LCBTS,LCBSS, COP, LP and FGD, teacher beliefs and the translation of beliefs into their practices were explored. The findings of this study showed that teacher beliefs regarding learners, learning and teaching, and classroom practices were learner centered; however, students perceiving about their teacher beliefs was moving toward learner centered approach. In contrast, teacher beliefs about competencies and adolescences were leaning toward learner centered. Although teachers believed in learner centeredness, the translation of beliefs into their teaching practices was not generally observed. It further explored the main challenges and constraints, which are the obstacles in the application of learner centered approach in their classroom. These observed constraints needs to be addressed in a strategic mean by looking to develop more teacher professional development trainings on learner-centered methodologies regarding learner centered methodology, content knowledge and other related practical factors.

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## Background of the Study

Murdoch and Wilson (2008) indicated that building an effective learning community or one school is worthwhile and necessary for constructivist learning. In this regard, teachers and other relevant sectors within the community or organization have to assist students to function well in order to strengthen their understanding, thoughts, inquiries and performances more effective. Three components are involved in this process: (1) producing positive team spirit, (2) guiding students learn how to learn and (3) providing skill development. As the evidences, Wink (2000) recommended that learner-centered methodology, the patterns of collaborative and active learning pedagogies, is more effective than teacher-centered practice. Similarly, K-12 education has gradually changed from traditional instruction (teacher-centered approach) to learner-centered instruction (Cuban, 1993). These recent shifts have also influenced to Cambodian education system since teacher-centered approach was traditionally used in class.

Learner-centered methodology has been introduced to Cambodian education system when the new curriculum has been reformed with the cooperation of Ministry of Education Youth and Sport (MoEYS) and other partnerships with non-government organizations in 1997 (Veerle & Nelly, 2008). Active-learning and learner-centered practice is also employed as national educational reform efforts to promote the equitable, effective and efficient of teaching and learning for nation's students in Cambodia (Bunlay et al., 2010). Remarkably, some challenges and difficulties in the applications of learner-centered approach have been identified and categorized. Veerle and Nelly (2008) marked that there are some challenges to the application of learner-centered approach in the actual instruction such as lacks of communication between teachers and students, lacks of teaching and learning materials, lacks of content knowledge and resources to link the lesson learned to everyday life.

Isikoglu, Basturk and Karaca (2009) suggested that in-service teachers still have gap between teacher beliefs and practices. They prefer learner-centered approach in the curriculum, yet they cannot employ appropriately to the classroom. Teacher education and teaching experience also influenced on learner-centered beliefs. Recently, many efforts have been done around the world to turn out from the passive learning environment to active learning environment. It is a kind of modeling and patterning the active learning to students in order to improve and stimulate their high order thinking skills, knowledge and attitudes. As pointed out by Elkind (2004), the success of constructivist educational reform can be achieved only depending on three kinds of readiness in place: teacher, curricular and societal. To reflect on this issue, teacher education and teacher professional development is the mean to deal with reform of educational system more effective.

In the case of Cambodia, as mentioned learner-centered approach has been introduced for almost 13 years, rote learning is still remained in science classroom in Cambodia. In class, teachers only read from the textbooks and motivate the students to memorize what they said. Teachers rarely give opportunity to student to handle the hand-on activities and observe phenomena around them (VandeWalle et al., 2010). Some barriers are categorized in practicing learner-centered approach in Cambodia such as lack of content knowledge and access to resources, lack of methodological skills, curriculum and textbook related issues and problems related to incentives and national policy (VVOB, 2008). Recently, SEAL project from VVOB program has run from 2008 to 2013 focused on the capacity building and stimulating learner-centered approach in science education in Cambodia. The SEAL project has trained with one Regional Teacher Training College (RTTC) Kandal and four pilot schools (lower secondary level). The study of VandeWalle et al. (2010) focused on four

technical working groups of teacher trainers and teachers (one for physics, biology, chemistry and earth science) have been involved in SEAL project. Scientific reading skills, writing skills, low-cost experiments and hand-on activities to integrate the scientific method in science teaching have been introduced and trained to those participants during the 2008-2009 school year and learner-centered approach also discussed in the training itself and giving feedback from peer teaching and classroom observation.

Interestingly, since there is an intervention of SEAL project on four pilot schools focused on learner-centered approach and the introduction of learner-centered approach many years, it will be useful to assess and explore the teacher beliefs and practices on learner-centeredness of public secondary schools in Cambodia. Indeed, there is very few literature and assessment of this application and how teacher believe and understand about this approach; therefore, it is necessary to look into the real applications and their understanding of this approach in order to improve and develop teaching and learning more effective. To address and assess these constraints, this study intends to examine the beliefs and practices on learner-centeredness and its challenges behind the actual instruction of lower secondary school biology teachers in the context of Cambodia.

The concept of belief in this study is described as teacher beliefs on learners, learning, teaching, adolescence, and their perceptions about classroom practice itself. The constructivist learning theory have been influenced, by various teaching methods for decades, which defined learning as an “active process that learners are active sense makers who try to construct coherent and organized knowledge by themselves” (Mayer, 2004, p.14). This theory plays as a main source for the development of learner-centered approaches (Hannafin, Hill & Land, 1997). In addition to this, Cannon and Newble (2000) described learner-centered approach as the means of thinking about teaching and learning which pays more attention on learners responsibilities, activities and tasks in learning environment than the content of the unit itself or what teachers are teaching.

To emphasize on the learner-centered approaches, several teaching methods have been developed on the student's behavior activities (Baeten et al., 2010; Mayer, 2004) including: problem-based learning (Dochy et al., 2003), self-activating teaching methods (Struyven et al., 2006), discovery learning (Mayer, 2004), powerful learning environments (De Corte, 2000), minimal guidance approach (Kirschner, Sweller & Clark, 2006), open-ended learning environments (Hannafin et al., 1997), case-based learning (Ellis, Marcus & Taylor, 2005) collaborative/cooperative learning (Slavin, 1995) and project-based learning (Dekeyser & Baert, 1999).

The framework of this investigation is conceptualized based on the light of the literature and related studies about learner-centered principles, teaching environment and practices. Based on APA (1997), Weimer (2002), O' Sullivan (2004), Mtika and Gates (2010), Mansour (2009) and Schuh (2004), the learner-centered principle, teaching environment and practice are explored. It implies that learner-centeredness can be observed via teachers' understanding and beliefs in learner-centered principles, teaching environment and practices. In this position, what teachers' beliefs in learner-centered principles, teaching environment and practice will be observed in actual instruction.

This study aimed to examine teacher beliefs and practices on learner-centeredness and the motivations in the actual instruction of lower secondary biology teachers in the context of Cambodia. Specifically, this research intended: (1) to investigate the learner-centered beliefs of lower secondary biology teachers; (2) to probe the translation of learner-centered beliefs of lower secondary biology teachers into their teaching practice; (3) to explore the motivations of lower secondary biology

teachers on learner-centered approach to their teaching practices; (4) to examine the challenges that lower secondary biology teachers face in the application of learner-centered approach in classroom in the context of Cambodia.

The following research questions were sought in the responses of this study:

1. What are the beliefs of lower secondary biology teachers regarding:
  - a. learners, learning and teaching?
  - b. classroom practices?
  - c. competencies?
  - d. adolescence?
2. How do lower secondary biology teachers translate their beliefs into classroom teaching?

### **Significance of the Study**

The result of this study provided empirical study and preliminary literatures about teacher beliefs and practices on learner-centeredness and the motivations behind of lower secondary biology teachers in Cambodia. Remarkably, the learner-centered batteries that were utilized in this study could be a self-assessment of lower secondary biology teachers about their teaching environment. It was also the crucial assessment for Cambodian Ministry of Education Youth and Sports (MoEYS) as well as other science education projects to reconsider the effectiveness of their introduction of learner-centered approach into the curriculum. Interestingly, some challenges and solutions to address the teacher beliefs and practice on learner-centeredness were identified in this study via teacher focus group discussion about the application of learner-centered approach to their biology teaching practice prospectively; therefore, it could be a significant guide and indicator for MoEYS and other international agencies to improve both pre-service teacher and in-service teacher education program as well as the quality of education improvement and development in Cambodia. Furthermore, this study can served as an avenue to reveal the perceptions of teachers and students about their teaching and learning environment. In this manner, this could stimulate biology teachers to recognize their student perceptions on what the tasks and activities that he/she have employed in the classroom. It could make this possible to improve the quality of teaching by teachers themselves, particularly in the application of learner-centered approach.

Moreover, the findings of this study revealed more insights into the true beliefs and challenges of the applications of learner-centered approach into teaching biology environment. It also provided national directions to reconsider the teaching methods that need to be developed/ reformed in various topics in biology education curriculum upon the identification of the challenges in the application of learner-centered approach as well as other science subjects in secondary schools. In this sense, MoEYS were seriously considered strengthening the quality of science education, specifically in biology education based on the results of this study. Significantly, the results of this research could be recognized by biology teachers themselves to develop and improve their teaching methods in different contexts of the topic itself.

### **Methodology**

Descriptive research survey and case study methods,—exploratory and triangulation, was utilized to in this research design. According to Yin (2009), the current research design is described as mixed methods—a case study within a survey. He also claims that one of the entities being survey may be investigated by case study. In the case of this current investigation, 4 case studies of 4 selected

teachers were used to identify the translation of beliefs into their teaching practice. Five tools were employed to accomplish the objectives of this study including: (1) learner-centered battery teacher survey (LCBTS), (2) learner-centered battery student survey (LCBSS), (3) teacher focus group discussion (FGD), (4) lesson plan (LP) and (5) classroom observation protocol (COP). LCBTS was administered and collected from lower secondary biology teachers from the four selected schools and LCBSS was administered to lower secondary school students from the selected schools taught by selected teachers. LP was collected and classroom observation was conducted within selected biology teachers from those schools by using COP. In this study, a total number of 13 lower secondary biology teachers participated in this research after data collection and 543 students from four selected schools were involved.

## **Data Analysis**

All the data were analyzed and interpreted quantitatively and qualitatively. Results of LCBTS and LCBSS were analyzed by using descriptive statistic. For the analysis of LCBTS, mean of each item was calculated and then the 4 categories of LCBTS survey were also identified by summing up mean of the items in each category as well as sub-categories. Similar to the analysis of LCBTS, the mean score of LCBSS were also calculated of all items. Since the mean of all categories had been calculated in both LCBTS and LCBSS, the comparison between category of LCBTS about teacher perceptions of classroom practice and the category of LCBSS about student perceptions of classroom practice were compared to view the relationship with each other. The audio-tape of teacher focus group discussion (FGD) was transcribed and synthesized to reveal and prevail the presently themes/ideas. Lesson plans (PL) were described about the format, and compare between their intended teaching practices and their actual classroom teaching. COP was collated by describing the classroom performance from the beginning to the end of the class. For the total rating scale sections, mean and standard deviation were calculated. Indeed, to interpret the gathered data, it was assumed that the mean score of each item equaled to 1 to 3 was meant to be less learner-centered, and the mean score of each item equaled to 3 to 5 was meant to be more learner-centered.

## **Results and Discussion**

### **In response to research question number 1: Teachers' Beliefs**

Results of this study suggested several distinctions of teacher beliefs regarding learners, learning and teaching, classroom practices, competencies and adolescences as well as the translation of teacher beliefs into their teaching practice.

By utilizing LCBTS, LCBSS and FGD, teacher beliefs regarding to learners, learning and teaching of this study were revealed to be leaning toward learner centered perspective. Although the teacher respondents were of various educational backgrounds and teaching experiences, they rewarded strong beliefs on learners, learning and teaching within the constructivist philosophy.

Similarly, triangulation of LCBTS, LCTSS and FGD on teacher beliefs regarding classroom practices implied that the teachers were moving toward learner centered environments. Although teachers believed about learner centered practices in their classroom (LCBTS and FGD), student perceptions about their teachers' classroom practices were just leaning toward learner centered (LCBSS).

The findings, furthermore, revealed that teacher beliefs about competencies and adolescences were leaning toward learner centered perspective. Teacher beliefs about competencies were learning toward learner centered (LCBTS, COP) while FGD revealed that teachers strongly believed in competencies to be effective application of LCA. Although teachers' responses from LCBTS were just leaning toward learner centered, the other two (LCBSS and FGD) were learner centered on adolescences. It significantly suggested that the levels of teacher beliefs about their classroom practices were not exactly observed in the same way by their students.

Teacher beliefs regarding learners, learning and teaching suggested to be learner centered, which revealed by LCBTS and FGD as shown the result section. However, LCBSS demonstrated that students perceived their teachers' beliefs about learners, learning and teaching just leaning toward learner centered. In addition, teacher beliefs regarding classroom practices were revealed as learner centered beliefs from their responses in the LCBTS and FGD. In contrast, LCBSS, students observed that their teachers' classroom practices were moving toward the use of learner centered approach in teaching. Remarkably, teachers strongly believed that learner centered approach may definitely enhance the instruction. Although teachers strongly stated that learner centered approach can improve the instruction, lacks of knowledge about LCA pedagogy may lead to the instruction to be ineffective and cosmetic. Therefore, the task of LCA provided to the class is just in the sake of engaging students in activities and output was not evident.

On the teacher beliefs regarding competencies, results indicated that teachers were seemingly starting to perceive their learner centered beliefs. In the LCBTS and FGD, teachers believed that their competency in biology is necessary for the effectiveness of LCA application. Results seen suggested that effectiveness of LCA application require competence in the subject matters among the teachers. Similarly, teacher beliefs on adolescences were leaning toward learner centeredness. It emphasized that learners' age may be easily to get influenced and impacted by their peers. It further revealed that the development of student as early adolescences is empowered and impacted by their surroundings, particularly teachers as guides, mentors and facilitators.

### **In response to research question number 2: Teachers' Translation**

There were various backgrounds of teacher respondents. Indeed, the four selected teachers for classroom observation were also differences in term of educational background and their teaching experience. As seen in the results on the contextual background and activities in the classes, each teacher was observed and remarked differently.

T<sub>A</sub> was considered as the most effective in her teaching performance and she also applied learner centered approach in her practices. As shown in her backgrounds, she has been trained many times in trainings/workshops related to LCM. Therefore, she can perform much better by applying her subject matter and pedagogical knowledge to her actual practices. In contrast, T<sub>B</sub> was assumed to be the least effective teacher in applying learner centered approach in the teaching practice. Although she had attended many workshops/trainings, she tended to apply only on the sake of the activities. It seems like what she has learned from the workshops/trainings cannot be applied to her practices. It seems she learns nothing from the trainings/workshops or she has other constraints during her actual performance.

T<sub>C</sub> and T<sub>D</sub> were considered as average teaching performance. These two teachers have only attended 1 or 2 times LCM trainings/workshops as well as some pedagogical knowledge from pedagogical

school. However, they can engage and coach students to be more into learner centered environment based on the classroom observation. More importantly, their teaching practice appeared to be more teacher centered, yet there are some activities that made her class look like learner centered. This result can be inferred that even in teacher centered classroom, learner centered activities also embedded in it. The findings revealed that the formal structure of classroom instructional strategy look is teacher-centered; however, learner-centeredness is embedded into the teacher-centered practice.

The findings on the translation of teacher respondent beliefs into their teaching practices are not regularly observed in learner centered practices. Only one selected teacher applied learner centered approach in her teaching practices. However, all the teachers strongly believed in the effectiveness of LCA application in enhancing instruction. They understand well about learner centered approach, yet they do not generally apply it due to the some constraints and challenges in LCA application. The findings on the translation of teacher beliefs into their classroom practice were seemingly less learner centered in their classes (COP). However, teacher participants believed in the effectiveness of LCA application in enhancing instruction (FGD and LP). They clearly understood about learner centered approach, yet they do not generally apply due to the some constraints and challenges in LCA application.

Interestingly, based on the final capsules of teaching quality, it revealed that although some teachers tended to apply teacher centered approach, the actual classroom seemed to be more effective in terms of promoting students' understanding. It can synthesize that what teacher respondents believed about learner centered approach is inconsistent to their teaching practices due to some crucial challenges in their present schools. Observably, the more structure to prescribed lesson plan format, the less learner-centeredness in their practice. Indeed, the more involvements to professional development program regarding learner centered methodology, the more effective in learner centered practice. Lastly, the analysis revealed that the translation of teacher respondents into their teaching practices was not consistent with what they believed in LCA.

Teacher beliefs, teaching practices and the constraints of LCA application were finally investigated in this study. It can be said that since teachers have strongly beliefs in the application of LCA in enhancing their instructions, the main constraints and challenges were the most difficult obstacles to address in the context of this study. The constraints and challenges that teachers faced in their schools were (1) classroom management, (2) lacks of teaching materials (textbooks), (3) class size (40-50 students), (4) time limitation (spend more times and the lesson is too lengthy), (6) lacks of experiment materials (no laboratory and materials), (7) lacks of professional development on LCA, (8) limited competency on the subject matter (not enough resource materials) and (9) low salary. Finally, teachers provided some valuable ideas in addressing the constraints and challenges they faced as seen in the result section.

The translation of teacher beliefs into their teaching practices of this investigation revealed that teachers did not generally apply learner centered approach in their classroom. Learner centered practice may be applied only if there are availability of resources and times. Although teacher beliefs were learner centered (LP, FGD), the translation of their beliefs cannot perfectly accomplish and achieve in their actual teaching practices (COP). In the case of this study, learner centered classroom was observed only from one of the 4 selected teachers. Remarkably, it seemed clear that teachers who often attend learner centered approach trainings/workshops perform much better than those who

rarely attend. Most importantly, the observed challenges and constraints may be the main obstacles that lead learner centered environment disappeared/ invisible in this study context.

Centered on the discussion and interpretation of data, it finally concluded that teacher participants in this study have strong motivation in promoting learner centered approach in their classes. However, their motivation was seemingly down due to the main constraints and challenges.

### **Recommendations and Implication**

The findings and the conclusions of this investigation paved the way to the recommendations and implications in both practice and research.

Practically, the instruments such as LCBTS and LCBSS that were used in this study could be considered as assessment tools for K-12 teachers and administrators to be more reflective and aware of their basic beliefs and assumptions about learners, learning and teaching, the relationship of these beliefs to their school and classroom practices, from their own and their students' perspectives and the impact of these practices on student motivation learning and academic achievement (McCombs, Lauer and Peralez, 1997). In addition to these 2 instruments, COP that was used as classroom observation checklist to evaluate and assess the actual teacher teaching practices should be further used to capture the actual teaching both pre-service and in-service teachers in terms of assessing the learner centered application in classroom practices.

The findings of this research provided more insight into teacher beliefs regarding learners, learning and teaching, classroom practices, competencies and adolescences as well as the translation of their beliefs into practices. Teacher educators can utilize this information to address more on their beliefs in order to produce effective classroom practices in the manner of LCA application. Significantly, the outcomes of this investigation also revealed that there were gaps between teacher beliefs and their teaching practices. Therefore, teachers, school principals, education department, ministry of education and other NGOs intervention should take into their considerations because there is a need or room to fulfill, improve and develop the gaps in the ways of LCA application. Interestingly, the observed challenges and constraints toward the difficulties in application of learner-centered approach should be extensively taken into account and addressed with the possible solutions. Specifically, professional incentives (salary or bonuses) should be promoted and increased to encourage and motivate teacher's work rather than let them find second job for their livings which also lead teaching quality to be ineffective.

This suggested that there should be crucial stages to promote the constructive changes such as the articulation of learner-centered approach needs to be simply and clearly employed to all levels, and the mechanisms of the reforms/changes of education system is needed to inform to all relevant sectors/stakeholders. These can be the preliminary sources for MoEYS and NGOs to build up and strengthen the teaching and learning quality in learner-centered environment by providing more professional development trainings/workshops. The results of this study also prevailed to teacher education institutes/center to pay more attention to the curriculum particularly on pedagogical content knowledge (learner-centered approach). Teacher education center should consider and integrate learner-centered principles, learner centered environment and learner centered practices to the curriculum in order to develop and improve pre service teachers to be more confident in all the aspects of learner-centered approach. This could be the mean to build up true beliefs in learner-centered approach.

Furthermore, the findings regarding teacher competencies were noticed to be limited. It is therefore necessary for ministry of education or regional teacher training centers (RTTCs) to take into consideration to reinforce teachers' educational background regarding their subject competencies. In this case, content knowledge is needed aside from training in pedagogy that is given to lower secondary teachers. Ministry of Education and RTTCs should consider another year focusing only on content knowledge in addition to two-year training program to being lower secondary school teachers. This could be the best means to strengthen and empower lower secondary teachers to be more competent in their specialization or subject matter.

From a research perspective, although the study only gathered from biology teachers (n=13) in 4 selected lower secondary schools in Kandal province, Cambodia and students (n=543) in the responses to the selected teachers, it clearly revealed the nature of beliefs and their practices in this specific area. It cannot be generalized beyond this. However, it is a core preliminary source for further study and consideration of educational system reform. Since the current study chose only 13 biology teachers in lower secondary schools, it suggested that larger samples. Or further research should be extended to other subjects (chemistry, earth science, physics and mathematics) to commonly generalize to the whole population in lower or upper secondary schools in science education or as a whole.

Since the introduction of LCA in Cambodia has been officially applied almost 7 years (Benveniste, Marshall & Araujo, 2008), the current study prevailed that teacher beliefs and practices of learner centered approach was not cohesive to one another in the context biology teacher at lower secondary school levels. From these finding, it can lead to further research on whether Cambodia is already well-prepared toward the learner centered approach or the readiness of educational sectors on the LCA application classroom practices. It finally proved that teacher participants have motivations in the application of LCA in their classroom; however, the motivation is not really strong enough to achieve due to the constraints and challenges that prevailed above.

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*Developing and Assessing a Learning Style-Driven E-Learning System*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

Education is the corner stone of modern human civilization. Today, knowledge is considered as a valuable asset, and the process of learning plays an important role in shaping knowledge. Thus, the need to improve the delivery of information must be satisfied since people go hungrier for more knowledge.

This study explored the potential of a learning style-driven e-learning system to help learners. This undertaking was accomplished by determining the learning style model to identify the learning style of learners; determining the learning style model tool to classify the learners based on their learning style; identifying the features of the proposed learning style-driven e-learning so it can adapt to the learning style of learners; and, determining the benefits of using the learning style-driven e-learning.

Data as basis for identifying the learning style model, appropriate learning style model tool, features of the proposed learning style-driven e-learning system and benefits of using the learning style-driven e-learning were gathered from graduating Bachelor of Science in Elementary Education and Bachelor of Science in Secondary Education students, review of published papers, and by pilot testing the developed learning style-driven e-learning system to elementary pupils. During the testing, two groups of learners were identified. The first group proceeded with the traditional classroom setup and the second group used the developed learning style-driven e-learning system.

At the end, the researchers' proved that a learning style-driven e-learning system is a tool in the learning process similarly with the traditional classroom learning.

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## INTRODUCTION

Cabrera, Sangra, and Vlachopoulos (2012) stated that the merging of information and communication technology, computer science and pedagogy culminated to the birth of the 21<sup>st</sup> century educational system. They also mentioned that this dynamic educational system resulted to the use of e-learning as one way to deliver knowledge and learn today. In the study by Li, Lau, and Dharmendran (2009), “e-learning is the delivery of a learning, training or education program by electronic means”.

It is evident that today institutions around the world are using technology in the delivery of knowledge to learners. E-Learning as most call it is indeed used both inside and outside the classroom. Formal and informal learning as part of lifelong learning are taking advantage of what technology can offer.

In one study (Watanabe, 2005), e-learning can be used in three categories: type I, students learn and are graded solely through the use of e-learning; type II, students learn and are graded through e-learning and the usual teacher-student interaction; and type III, students learn and are graded by the usual teacher-student interaction with the use of e-learning as supplement. The study concluded that type III is the expected model of e-learning to succeed since it meets the needs of most learners and educational institutions. The study showed the high need of educational institutions to implement the type III e-learning.

Using e-learning as a supplement to the traditional teacher-student interaction help insure that learners are given every opportunity to learn whether inside or outside the classroom. E-learning systems are not bound by the usual constraints of the classroom such as time and space. Though it is still evident that most learners are able to learn well through the guidance of educators, the fact that e-learning is playing an important role to learners of this generation cannot be ignored.

Kannine (2008), studied the importance of learning styles in learning. It was showed that creating e-learning systems must consider the learning style of learners. E-learning systems must be able to cater the learning needs of all learners. This is why planning is important in the creation of e-learning systems. Studying and learning the different learning style models and tools are also needed to identify the suitable models and tools to effectively classify learners. The study concluded the need of e-learning systems that are able to cater different learners by identifying the suitable mode of presenting learning materials. Further, this can be achieved through the merging of e-learning systems and learning styles.

The ability of e-learning systems to cater learners with different learning styles insure that all learners are benefited. It must be noted that unlike the traditional classroom setting where the educator may arrange and accommodate learners needs the e-learning setup is only limited to what are provided by the designers and developers.

In a paper (Manohehr, 2006), the use of learning styles in the traditional classroom setting does not have high impact on the performance of learners. It was showed that learning styles are much applicable to learners in an e-learning setup. The paper concluded that in order for learners to maximize learning through the use of e-learning systems, these e-learning systems must be able

to adapt and cater to the learning needs of learners. This leads to the need of learning styles in the design and development of e-learning systems.

Learning styles show that each learner has a different way to learn and that most learners do not learn the same way as the others. Lane (2000) stated that “all students learn differently due to dominant or preferred Learning Style”. Felder and Henriques (1995) stated that students learn in the form of seeing and hearing; reflecting and acting; reasoning logically and intuitively; and, memorizing and visualizing. While all of these are true, learning style is viewed in a way that a learner has a dominant learning style that enables the learner to digest any information with ease. Fu (2009) stated that “students learn in many ways like seeing, hearing and experiencing things first hand”. Furthermore, Fu said that “but for most students, one of these methods stands out”. Fu believed that students have different learning styles and that every student has a dominant learning preference.

In a paper (Dunn & Dunn, 1978), learning styles have models where each model points out different ways on how learning is affected. These models suggest different learning styles that different learners possess. Some suggest environmental issues, attitudes, personalities, experiences, brain division, own preferences, and ones senses.

There are indeed numerous studies that support the need of designing and developing e-learning systems that are able to cater different learners. These learners are able to maximize the use of e-learning systems if these e-learning systems are able to present the appropriate learning materials to the learners. This is where learning styles would prove useful.

This study generally explored the design and development of a learning style-driven e-learning system. It covered learning styles, learning style models, and adaptive e-learning system. This undertaking was accomplished by (1) determining the learning style model to identify the learning style of learners; (2) determining the learning style model tool to classify the learners; (3) identifying the features of the proposed learning style-driven e-learning so it can adapt to the learning style of learners; and, (4) determining if using the learning style-driven e-learning helped learners.

## **METHODS**

Determining the learning style model to identify the learning style of learners was done by floating questionnaires among 68 Bachelor in Elementary Education (BEED) and Bachelor of Secondary Education (BSED) practicum students of the University of the Cordilleras at Baguio City, Philippines. The questionnaire assessed the knowledge of the respondents on learning style models. Assessing their knowledge would show if they are qualified to determine the appropriate learning style model to identify the learning style of learners. The questionnaire then inquired the appropriate learning style model to be used to determine the learning style of learners. This was done by showing a list of the common and widely used learning style models from published studies.

After determining the appropriate learning style model, review of literature was done to determine the learning style model tool to classify the learners. The learning style model tool of

the identified learning style model to classify learners was based on common and widely used tools of published studies. These published studies used the identified learning style model tool.

The features of the learning style-driven e-learning so it can adapt to the learning style of the learners were based on the features of common e-learning systems and other e-learning systems that consider the needs of learners. Some of these e-learning systems are available over the Internet, some are used in the University of the respondents, and e-learning system projects of students of the respondents' University. Features that allow the learning style-driven e-learning to determine the learning style of learners and present the appropriate learning materials based on the identified learning style were then determined.

The learning style-driven e-learning was pilot tested among 104 fourth and fifth grade pupils of La Trinidad Nazarene Learning Center at La Trinidad, Benguet, Philippines. The pupils were presented a sixth grade lesson on Science and Technology based on the actual lesson plan of one of the Science and Technology faculty of the school. Two groups with 52 randomly identified students each were created. The first group was asked to stay in a lecture room and the pupils were presented the lesson using the traditional classroom setting. A special education faculty from another school was asked to present the lesson using the different learning styles based on the identified learning style model. The pupils on the first group were presented the lesson using all the different sets of learning materials. On the other hand, the pupils on the second group were left at the computer laboratory room of the school and were supervised by the school's computer teacher and the researchers. Unlike the first group, the pupils on the second group were presented the lesson using the learning materials that are appropriate to their learning styles. No faculty intervened with the students of the second group during the pilot testing. The pupils on both groups were also asked to take a pre test and a post test before and after the class. The results of the pre test and post test of the two groups were used to determine whether pupils on each group learned or not. Using a one-tailed dependent t-test, the researchers identified whether the knowledge of students in each group increased or not.

## **RESULTS and DISCUSSIONS**

The questionnaire revealed that all the BEED and BSSED students were all knowledgeable on the concepts of learning styles and learning styles models. Of the 68 respondents, 24 have high understanding on learning style and learning style models, 40 of the respondents have moderate understanding on learning style and learning style models, and 4 are familiar with learning style and learning style models. It was fortunate that nobody from the respondents was unfamiliar with learning style and learning style models.

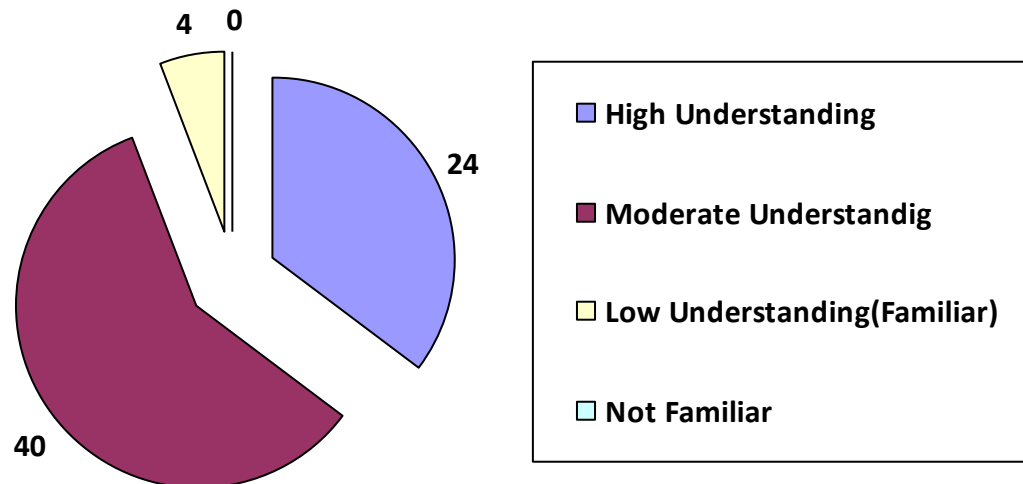


Figure 1: Understanding of BEED and BSED Practicum Students on Learning Style and Learning Style Models

After determining that the respondents are all familiar with learning style and learning style models, the respondents identified the appropriate learning style model to classify learners. The result shows that 55 of the respondents recommends the VAK Learning Style Model as the appropriate learning style model to determine the learning style of learners. 7 of the respondents recommends the Kolb's Learning Style Model. The Dunn and Dunn Learning Style Model was recommended by three of the respondents. The Grasha and Reichman Learning Style Model was recommended by one respondent. The Honey and Mumford Learning Style Model was recommended by one respondent. Another respondent recommended the MBTI Learning Style Model. No one from the respondents recommended other learning style models.

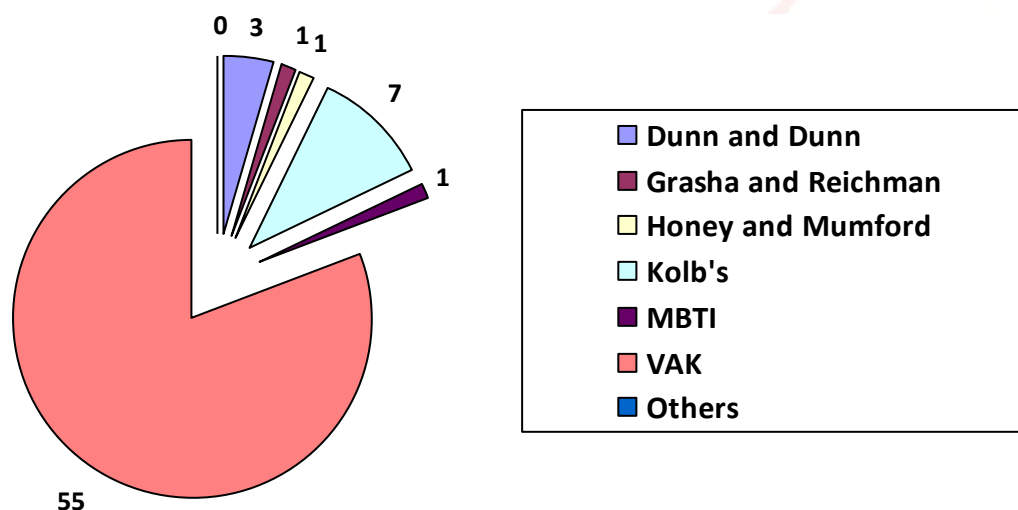


Figure 2: Appropriate Learning Style Model to Classify Learners

Examining published studies that used VAK Learning Style Model resulted to the use of the VAK Learning Style Self Assessment Questionnaire. This VAK Learning Style Model was developed by Victoria Chislett and Alan Chapman. This self-test is composed of 30 multiple choice questions. The choices for each questions corresponds to one of the three learning styles according to the VAK Learning Style Model. Fu (2009) used this questionnaire in his study entitled “A Study of Learning Styles, Teaching Styles and Vocabulary Teaching Strategies in Chinese Primary School — How Do They Differ and How Can They Be Integrated?”. Hamtini, Al Fayez, & Ahmad (2011) used this questionnaire in their case study entitled “An Adaptive e-Learning Hypermedia System for Teaching Entity-Relationship Diagrams: a Case Study”. Deeb & Bin Hassan (2011) wrote a research entitled “Towards Designing E-learning Materials based on Multi Learner’s Styles” used the same questionnaire developed by Chislett and Chapman.

The learning style-driven e-learning has four identified main features. These features include: classifying learners according to their learning style; presenting the appropriate learning materials for each type of learner; and, assessing the learner’s improvements through pre tests and post tests. To determine the learners’ learning style, the system provides first time users a learning style assessment questionnaire. After a user logs-on to the system, first time users will be assessed using the VAK learning style self assessment questionnaire, this will be their first experience on the system. In the assessment, 30 questions are needed to be answered so that the system can determine the learners’ learning style. After answering all questions, the system will then classify each learner accordingly. The system is designed, following the mechanics of the VAK learning style self assessment questionnaire to cluster each learner into three types: visual learners, auditory learners and kinesthetic learners. The system’s next job after determining the learning style of each learner is to provide appropriate learning materials. Learners classified as visual learners are provided with learning materials that depicts a lesson through images, texts, graphs, charts, illustrations and videos. Auditory learners are provided with learning materials that utilizes sounds and videos that simulates lectures. Kinesthetic learners are provided with learning materials that depicts a lesson through games and puzzles to simulate hands-on learning. The first assessment or pre test is taken before taking the provided lesson. This is to check if the target population has a background on the topic to be presented. The second assessment or post test is taken after finishing the provided lesson.

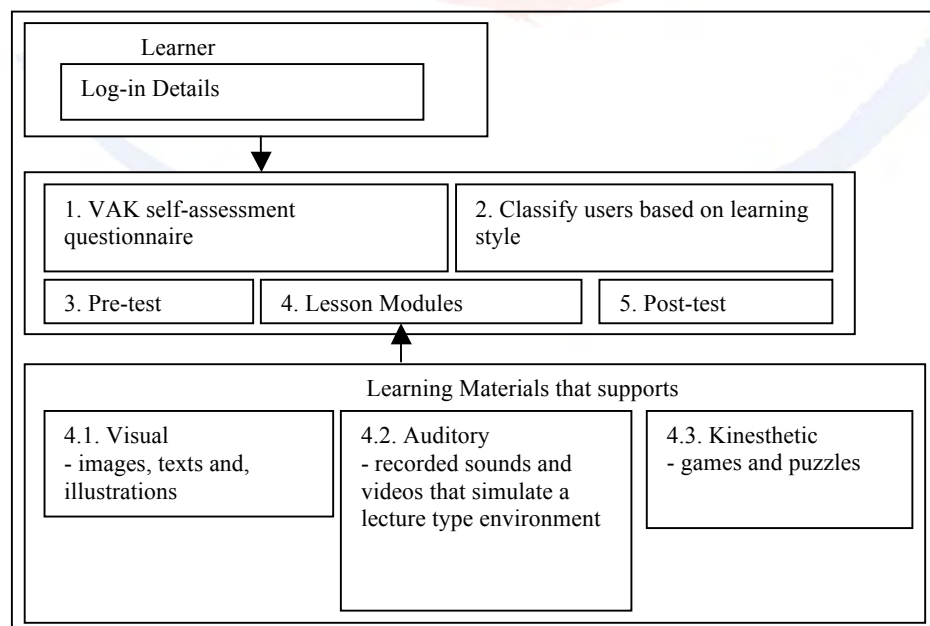


Figure 3: Framework showing the logical structure of the Learning Style Driven E-Learning System

The pre test and post test of the two groups of pupils resulted to rejecting the null hypotheses of the study for the first and second groups. It was found that the knowledge of students on the first group increased as well as the knowledge of the students on the second group. The table below shows the pre test and post test score of the pupils on both groups.

Group	Average Pre Test Score	Average Post Test Score
Classroom Group (1 <sup>st</sup> )	6 out of 20 points	18 out of 20 points
E-Learning Group (2 <sup>nd</sup> )	4 out of 20 points	15 out of 20 points

Table 1: Average Pre Test and Post Test of the Test Groups

It should however be noted that some observations may have affected the results of the study. For the first group, the group that did the traditional classroom setting, it should be emphasized that the pupils were all presented the same lesson three times using the learning materials for the three types of learners according to the VAK Model. While the pupils for the second group, the group that used the learning style-driven e-learning, were presented the lesson once using the appropriate learning materials according to the VAK Model. It should also be recognized that the students on the first group were facilitated by a faculty member, therefore the usual classroom atmosphere and rules were observed. On the other hand, the students on the second group were not facilitated by a teacher and were left to study and learn on their own. The computer teacher and the researchers simply facilitated the use of the computer and the learning style-driven e-learning.

## CONCLUSIONS

An existing learning style model can be used to assess learners and be able to provide them the appropriate learning materials. It should also be noted that the concepts of learning styles and learning style models are not new to educators.

To effectively use these learning style models appropriate learning style model tools must be used. These tools are used to classify the learners in order to identify the appropriate learning material for specific learners. The use of learning style models would not be effective without successfully classifying the learners using the learning style model tools.

E-learning systems can be designed and develop in order for it to be able to cater to the learning needs of learners with different learning styles. These adaptive e-learning systems can identify the learning style of individual learners and use the information to present the appropriate learning materials for the learners.

Students can improve their knowledge by studying and using learning materials that are appropriate to their learning style. This is true whether the learner is in the traditional classroom setting or in an e-learning environment.

## **FUTURE WORKS**

Validity may be strengthened by testing the learning style-driven e-learning on other set of populations. Cultural background, age group, and technological knowledge may be considered. Testing the learning-style driven e-learning for different subject matters should also be considered. It should be noted that there are subjects that could be best presented using limited learning materials only.

Implementing the learning style-driven e-learning on a mobile platform should also be taken into consideration. Looking at learners today, most of them are already engaged in the use of these mobile devices.

It may also be interesting to study the effect of implementing and observing the traditional classroom setting rules on the conduct of classes while using the learning style-driven e-learning. It may be that the system is capable of implementing these rules and facilitate the entire class or a faculty member still be present to facilitate the class.

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*Exploring the Implementation of School-Based Management in Selected Public  
Schools in Cambodia: A Multiple Case Study*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

The purpose of the study was to explore the implementation of school-based management in selected public primary schools in Cambodia with an emphasis on the rationales, devolution of decision making authority and challenges emerged. The study utilized multiple case study design which was grounded on triangulation as a data collection method. A total of 45 respondents who are principals, teachers, school support committees, the parents and community members from three public primary schools in different districts in Kampot province engaged in the study. The findings demonstrated various roles of the stakeholders in initiating and implementing school-based management centrally and locally. Participatory decision making approach has promoted the participation of key local stakeholders in decision making. The findings highlighted that the success of school-based management in Cambodia is particularly determined by principal leadership, the active participation of the local stakeholders and direct support from non-government organizations. The study concluded that to successfully accomplish the indicated objectives of school-based management, clear framework of policies, standards and accountabilities should be developed and greater autonomy should be decentralized to the school stakeholders. Leadership and management preparation or systematic professional development should be provided to school principals to help them acquire necessary skills and knowledge to implement the program effectively and more active involvement of relevant stakeholders would be ensured.

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## 1. Introduction

Because of the recent challenges, complexities and competition caused by the innovation of technology and science, political and economical transition and societal change, schools are required to be more transparent, accountable and efficient. School governance and decision making needs to be changed to respond to the pressures (Sackney and Dibsiki, 1995). Greater decision making authority is devolved to local education stakeholders including school principals, teachers, parents and community members to determine the strategy that best meets the needs of the children (Gamge and Zajda, 2009). This new reform strategy is called school-based management which school operation lies in the hand of local stakeholders, but they have to comply with the centrally indicated framework, policies or regulations (Caldwell, 2005).

Even though school-based management has been established since the 1960s, only recently has it become the centrepiece of the current wave of education reform (Sackney and Diski, 1995). With technical and financial support from the World Bank, Cambodia has introduced school-based management program known as Education Quality Improvement Project (EQIP) since 1998 (World Bank, 1999). The primary aim of the program was to enhance the quality of basic education through “participative decision making approach”. The program furthermore sought to improve planning and resource allocation of scarce resources (Pellini, 2007) and to reduce the cost burden on the poorest families in order to decrease the dropout of the children in basic education. Shoraku (2008) noted that the program has made significant contribution to achieve Education For All (EFA) and Millennium Development Goals (MDG) for education in Cambodia.

Despite the wide practice of school-based management in Cambodia, the coordinated national decentralized policy of school-based management is not clearly defined. The decision-making authority transferred from the central government to the school level remains ambiguous and the involvement of the local stakeholders in decision making is uncertain (Samith, 2003). This ambiguity leads to a downside of school-based management and unlikely produces its potentials (Wohlstetter and Odden, 1992). In addition, misunderstanding and tensions between the central level and local level likely happen. Chapman (2002) stressed that when lines of responsibility and authority for education management are confusing; weak and poor management of education possibly arises.

## 2. Literature Review

### 2.1. School-Based Management

School-based management is a wide education reform strategy among policy makers globally. The definition of school-based management varies across countries particularly based on the nature and goal of the program (Caldwell, 2009), influenced by culture and political context (Gamage and Zajda 2009, p. 4). Sackney and Dibsiki (1995) viewed school-based management as a “proposal to decentralize and de-bureaucratize school control” in terms of shared decision making, involving parents and other stakeholders (p. 30). School-based management can also be defined as a form of decentralization by putting primacy on the individual schools that function to constantly improve and sustain the school effectiveness and efficiency within a given decision making authority and responsibility (Malen et al, 1990, p. 290). According to the expert of school-based management, Caldwell (2009), “school-based management in a system of public education is the systematic and consistent decentralization to the school level of authority and responsibility to make decisions on significant matters related to school operations within a centrally determined framework of goals, policies, curriculum, standards, and accountabilities” (p. 55).

The literature has demonstrated that school-based management has been a global education reform strategy driven by several shared reasons (Grauwe, 2005). The first reason is that school-based management is evident to show democracy in which teachers and parents are given space to participate in decision making process. The second supportive reason proves school-based management to respond to the needs of local stakeholders. While authority for decision making is closer to the local people, the addressed can be met better. The third reason is that school-based management reduces the practice of bureaucracy in the system. Problems can be solved quickly among local stakeholders. Finally, school-based management allows for greater accountability by giving schools and teachers greater authority held directly to parents and the community.

Because of the positive impacts of school-based management, many countries around the globe especially Asia and Pacific region have implemented various school-based management programs. School-based management in Hong Kong under the name of School Management Initiative (SIM), for instance, was introduced in 1991. It was aimed to improve quality of education by encouraging the participation of all concerned stakeholders (Wong, 2003). The program in addition promoted a quality culture, emphasizing on learner-centred, school-based and accountable strategy (Gamage and Zajda, 2009). In practice, schools were allowed to flexibly utilize the necessary resources and to clarify the functions and responsibilities for the delivery of education (Huen, 2003).

In an attempt to improve quality of education and country's competitiveness, Thai government decentralized decision-making power over fiscal management, personnel management, utilization of resources monitoring and evaluation of the administrators to school board to take control over school management (Gamage and Zajda, 2009). The school board which is comprised of 7-15 members among of whom are teachers, parents, local community members, local authorities and alumni not exceeding two from each group, relying upon the school size was created to take over school operation (Gamage and Sooksomchitra, 2004; Santibanez, 2006).

In 2001, Indonesia introduced school-based management nationwide, mainly focused on four aspects namely quality, equality, relevance and efficiency (Shoraku, 2008). Several approaches have been implemented to achieve the indicated desires. School approach placed more autonomy to the school principals while community approach connected both school and local community which in turn made significant contribution to the success of school management and student achievement (Indriyanto, 2003).

The practice of school-based management in the Philippines was intended to improve shared governance, democratic decision making, accountability and transparency and communication among the stakeholders (Guzman, 2003). The central and regional levels devolve the authority for decision-making to school divisions in the provinces and municipalities among of which share educational responsibilities with relevant stakeholders such as local government units (LGUs) and parent-teacher associations (PTAs).

The extant literature not only indicates the driving forces of school-based management, but also explains the general aims of school-based management. Although there have been various school-based management programs influenced by cultural, social and political factors (Santibanez, 2006), they may fall under any of the following aims which are (1) to involve parents and communities in schools; (2) to empower school administrators and teachers; (3) to build local level capacity; (4) to create accountability mechanisms for site-based agents and to improve the transparency of process by decentralization of authority; and (5) to enhance quality and efficiency of schooling which in turn raise learning quality (Gertler et al, 2007).

## *2.2. Decision-Making Authority in School-Based Management*

The general principle of school-based management is that the authority for decision-making is shifted from the central government to the school level accordingly, made up of school principals, teachers, parents, in some case student and school community members (Barrera-Orsorio et al, 2009; Cheng and Chan, 2000; Santibanez, 2006). However, these stakeholders with devolved decision making power have to comply with a set of framework, policies or regulations indicated by the central government (Caldwell, 2005, 2009; Grauwe, 2005).

In general, the areas of decision making shifted to the school level vary, specifically based on the nature of the program, political and cultural context. Interestingly, in the review of various aspects for which responsibility and authority for decision- making decentralized to schools in different countries, Di Gropello, (2006) drew some practical aspects of decision making authority shifted to the school level stakeholders namely (1) personnel management, (2) instructional management, (3), budget management (4) maintenance and infrastructure, and (5) monitoring and evaluation.

The review indicated that power for making decision over personnel management which transferred to the school level people include establishing incentives for teaching and non-teaching staff, recruiting and appointing teaching and administrative staff, monitoring and evaluating personnel, and funding professional development (Gamage, 2008; Gamage and Zajda, 2009; Herman and Herman, 1994; Nir and Miran, 2006). In Thailand, decision making over professional development for teachers and administrative staff has been empowered to manage at school levels (Gamage and Sooksomchitra, 2004). The principals can fund teachers for further professional advancement and supervise and evaluate them.

According to Di Gropello (2006), instructional area is primarily concerned with “setting classroom hours by subject, selecting textbooks/curriculum, setting the method of instruction, and setting the school calendar”. Besides, Herman and Herman (1994) indicated that it is furthermore associated with determination of curriculum, testing and assessment procedures, student grading procedures. For example, the school principals in Taiwan (Lo and Gu, 2008), Hong Kong, Japan (Cheng and Chan, 2000; Huen, 2003), South Africa, Thailand, and Spain (Gamage and Zajda, 2009) are empowered to develop their own teaching-learning environment relevant to their needs and to supervise and evaluate the instruction- process of teaching and learning. Chapman (2002) supported that the school principals are empowered to supervise and monitor the teaching-learning process in the schools. School principals are therefore seen to have significant capacity to enrich the quality of teaching and learning (Grauwe, 2005).

The study explains that the budget management is more focused on overseeing budget, allocating budget, and establishing school fees (Di Gropello, 2006). In more details, Herman and Herman (1994) specified the coverage of this area by including three main sub-areas namely determination of employee salaries; construction of building budget; and determination of expenditures of building budget such as supplies, equipment, staff development, co-curricular activities, maintenance, transportation, and food service. In some countries such as Hong Kong, Thailand, South Africa (Gamage and Zajda, 2009) and Israel (Gaziel, 1998; Nir and Miran, 2006), budget allocation is made the school level and approved by the school governing body.

In the study of the budget resources of Israeli schools, Nir and Miran (2006) found two main issues involving in the budget dimension which affects the equity. The first issue is concerned with the distribution of budget from central government to school. The budget distribution is computed based on the population of students locating in the schools. Generally, schools with bigger population can increase the budget whereas smaller schools are unlikely to increase. It therefore negatively affects the pedagogical practice. The second issue is that giving schools permission to

receive resources autonomously which may negatively impact the vertical equity among schools in considering the differences in their assumed ability to obtained resources form self-generated sources.

The existing literature has presented that the decision making authority over maintenance and infrastructure is the responsibility of school level stakeholders who have to ensure that school building and environment are safe and friendly for student learning (Di Gropello, 2006). This usually include the areas of building or maintaining school and buying school materials In New Zealand, the school council made up of principals, teachers, parents, community and students can decide which type of infrastructure is established to help student learn better (Gamage and Zajda, 2009).

In the aspect of monitoring and evaluation, the school level people have been empowered to make decision over two main aspects namely administrative and pedagogical activities (Di Gropello, 2006), more specifically staff, instruction, budget, curriculum and infrastructure (Gamage and Zajda, 2009). In general, the principals hold significant domination over the decision making in the area of monitoring and evaluation that can be found in many countries which implement school-based management program.

Herman and Herman (1994) suggested that policy area should be made at school level. In this sense, the schools should be allowed to determine the building policies related to students, employees, and other matters which can be differed from the district or provincial policies. For example, in Australia, school level is allowed to set its own policies which suit the school while schools in Spain can develop the rules and regulations for organizing school (Gamage and Zajda, 2009).

In summary, the focal practice of school-based management is the shift of authority for decision making from the central government to the local stakeholders namely principals, teachers, school board or school support council, parents, the community members and sometimes students. The general decision making authorities decentralized to the school are personnel management, budget management, instructional management, maintenance and infrastructure, policy development and monitoring and evaluation.

### **3. School- Based Management in Cambodia**

The contemporary education in Cambodia has commenced after the collapse of Khmer Rouge regime in 1979 (Chhin and Dy, 2009, p.113). All social infrastructures were immediately reconstructed and education development has been put bold emphasis. The then education system was shortened to a 10-year education system made up of four years of primary education, three years of lower secondary education and three years of upper secondary education to meet the urgent needs. The Ministry of Education, Youth and Sport (MoEYS) later added one more year to primary education to improve quality of education system. This education system was widely practiced from 1986 to 1996 (Pellini, 2007). An updated twelve-year education system containing six years of primary education, three years of lower secondary education and three years of upper secondary education has been nationwide implemented since 1996. The new system increased number of teaching and learning hours across all grade levels.

With strong and continuous commitment of the MoEYS with regard to improving educational sector, the MoEYS introduced school-based management known as the Education Quality Improvement Project (EQIP) in 1998, financially and technically supported by the Wold Bank (World Bank, 1999). The overall goal of the program was to establish and implement a “participatory approach to school quality improvement and performance-based resource management” (Benvensite and Marshall, 2007; World Bank, 1999, 2004). The participatory

approach specifically involved two beneficiaries. The primary beneficiaries of the grant were students and their families, teachers, and school directors, functioning as collaborators in developing quality improvement grants. Other stakeholders including the MoEYS personnel at national level, provincial and district level, NGOs, and other donors functioned as consultative role through National Committee on Effective Schooling and support to provincial management (World Bank, 1999).

The project principally encompassed two objectives. The first objective is that all concerned schools should progressively display characteristics of effective schools which ultimately demonstrate improvements in student enrolment, attendance, student flows and achievements. The experience learned from the practices served as valuable sources to notify sector-wide policies to enhance teacher motivation, cost efficiency in education, reduce recurrence and dropout and expand the time available for teaching and learning (World Bank, 1999, 2004).

In practice, school clusters were developed to identify problems and solutions in their own schools and in the development of cluster improvement plans to be used as the basis for preparing grant proposals. A school cluster grant program was initiated in Takeo province in 1998 with a pilot group of ten clusters and later expanded to include around 1,000 schools in three provinces between 1998 and 2004 (World Bank, 2004, 1999). A school cluster is a group of school geographically situated near each other that can provide mutual technical and material assistance to make teaching and learning more effective (Marshall, 2004; Pellini, 2007).

The evidence has shown that the MoEYS has been in the process of decentralization of education by devolving closer decision-making authority and responsibility to local education stakeholders. However, little is known about the actual implementation of school-based management at school level. The national decentralized strategies or policies of school-based management regarding decision making authority and school autonomy are not clearly defined. The knowledge gap what is actually happening at school levels will hamper our ability to help those stakeholders effectively implement the program.

#### **4. Statement of the Problem**

The study therefore sought to explore the implementation of school-based management in selected public primary schools in Cambodia. The study was aimed to establish the framework of school-based management in the selected public primary schools by examining (1) reasons for implementing SBM; (2) operational aspects of SBM; and (3) challenges in SBM.

Specifically, the research attempted to answer the following questions:

1. Why do schools engage in School-Based Management?
2. How are school-based management aspects operated in terms of decision making authority and participation of the stakeholders including principals, teachers, parents and community members?
3. What challenges do they confront in the implantation of School-Based Management?

#### **5. Method**

##### *5.1. Research Design*

The study is a qualitative case study which is essentially based on the Multiple Case Study Method expounded by Robert Yin (2003). According to Yin (2003), case study is “an empirical inquiry that investigates contemporary phenomenon within its real life context, especially when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used” (p. 13). The author further explains that a case study inquiry relies on multiple sources with data needing to converge in a triangular fashion.

## 5.2. *Participants*

Grounded on purposive and convenient sampling techniques, forty five participants including six principals, twenty-one teachers (teaching and non-teaching), nine school support committee and nine parents of the students and the community members from three public primary schools in Kampot province, Cambodia were included in the study. The participating schools were selected on the following criterion. The schools (1) were established practitioners of school-based management accord to the Ministry of Education, Youth and Sports; (2) had been practicing school-based management for at least five years; (3) contained large number of teaching and non-teaching staff and students; (4) were considered as outstanding and effective schools in the implementation of SBM and (5) were convenient for the researcher to conduct the study. Based on the indicated criterion, two public primary schools located in different districts were chosen.

The key respondents were chosen based on the following conditions. The principals and teachers (teaching and non-teaching) must have a minimum of five years service in the school across grade levels. The school support committee members included in the study must have at least three years of experience in the school. The parents and community members selected for the study must have active participation in school activities. The parents referred to the parents who have child/children enrolled in the school while the community members are whoever lived in the community and participated in school. They all should be available during the conduct of the study. The participants were selected with the specified minimum years of experience because they likely knew better about the practice of school based management as well as school history. To protect the confidentiality of each school in the study, the researcher employed code names- A, B and C to represent the participating schools.

## 5.3. *Instruments*

The instruments utilized in the current case study were mainly bounded on the triangulation method which included (1) interview, (2) internal documents and (3) data from parents and government. In-depth interview was the primary tool used to gather more comprehensive information of the study. The in-depth interview allowed the researcher to learn more about the facts and opinions of the events of the respondents. The researcher applied informal interview with director of district of education office and deputy director of provincial education office to further explore their perception of school-based management. The recoding tools were very significant for interview and transcription stages. In the context of this study, an audio-tape was mainly used to record the interview script appropriately.

According to Yin (2009), documents become the most important sources in the case studies. The documents are helpful in verifying the correct spellings and titles or names of organizations that might have mentioned in the interview and provide other specific details to corroborate information from other sources. The documents are therefore stable, obstructive, exact and broad coverage. In this study, the researcher gathered letters, memoranda, agendas, announcements, minutes of meetings and other written reports, administrative documents, formal studies or evaluation of the same case and news clippings from the schools for analysis and validation.

For validation purpose, the researcher carefully collected the data from parents and School Support Committee through interview to support the result of the study. The researcher approached various concerned government organizations to obtain some necessary documents regarding with the examination. For sure, the researcher visited the Ministry of Education, Youth and Sport (MoEYS), provincial education offices and district education offices to receive some related documents of school-based management.

#### 5.4. Data Analysis

The data obtained from the interviews, other related documents were analyzed into two main stages. The first stage was called within case analysis or single case analysis which was the process of studying the data of each individual case. In this stage, the data was processed, managed and transcribed into master units. The researcher therefore conducted critical reading of interview transcript, notes, documents, and other important materials. The researcher examined the emergent concepts and clustered them accordingly. The second stage was called cross case analysis which was used to compare and contrast the data in every single case. In this phase, the researcher established the patterns from all cases about the current practice of school-based management in Cambodian public schools.

### 6. Findings and Discussion

#### 6.1. Rationales of School-Based Management

The introduction of school-based management in the selected public primary schools in Cambodia is not different from what Grauwe (2005) identifies as influenced by the internal (national political reform, policies and strategy) and the external (international development agencies and education experts). The Ministry of Education, Youth and Sport (MoEYS) has shown commitment in improving education sector through various education reform initiatives. As evident, Education Strategic Plan (ESP) 2006-2010 and 2009-2013, originally established in 2000 emphasizes three key aspects: (1) equitable access to education services; (2) quality and efficiency of education services and (3) institutional development and capacity building for decentralization. The education reform has begun with technical and financial assistance from various international agencies. The World Bank and Asian Development Bank have played important role in supporting the process of education policy formulation. However, these organizations have no any direct influence or involvement at school level in which the SBM has been practiced.

The joint efforts of the government and international development communities have brought various school-based management programs which include Education Quality Improvement Project, Priority Action Program and Program-Based Budget in 2001-2003, 2001-2006 and 2007 respectively. The implementation of school-based management has thus far aimed to (1) improve quality education by making necessary instructional materials available at schools; (2) to expand access to education by eliminating start-school fee year policies; (3) to promote the participatory decision making approach by delegating decision-making authorities to various local stakeholders and (4) to increase the efficiency and effectiveness of budget management at schools.

In the practice of school-based management, the participatory decision making approach has been encouraged through the establishment of School Support Committee which has brought relevant key local stakeholders together. All schools have the School Support Committee which is composed of (1) a representative of local authorities at village or commune level or head of monk; (2) school principal; (3) one community representative who is admirable and charismatic; (4) one member of parent association; (5) one accountant (elected from among members); (6) one treasurer (elected from among members) and one secretary (elected from among members). The functions and roles of the committee include (1) enhancing the enrolment of children through education campaign and encouragement of parents; (2) taking part in revenue mobilization and budget through school development plan; (3) improving school maintenance and property; (4) involving in school construction and repair through fund raising and engaging parents; (5) preventing irregularities inside and outside the school; (6) participating in school planning and implementation and (7) monitoring student learning through community-parent meeting.

As described by Grauwe (2005) that the participative decision making approach has promoted the concept of democracy among local stakeholders as they become participative in school development. The current study particularly supports the importance that community members and parents have been more involved in the school activities. The participation of these stakeholders signifies a characteristic of decentralized education system which has appealed the public and research support school management (Gamage and Zajda, 2009, p.3). It becomes noticeable that non-governmental organizations have played very important roles to support the school development and management through technical and financial assistance. For example, Volunteer Service Overseas, Non-Governmental Organization Educational Partnership, TIMA, SAWA, World Education and SVA have supported in the areas of school environment (building playground and gardens), life skill program and training, teaching and learning materials, and extra-curricular activities (sports).

The extent to which the School Support Committee, parents and community members and non-governmental organizations take part in school development characterizes the uniqueness of the participating schools. The school with active involvement of the School Support Committee, parents and the community as well as direct technical and financial assistance from various non-governmental organizations proves better improvement in environment and infrastructure, instructional materials and staff involvement while the school with less or no direct support seems to have minimal improvement. The study indicates that in order to demand involvement and direct support from the organizations, strong school leadership is especially crucial as addressed by Grauwe (2005) that the principal capacity and leadership style is significantly related to quality of education and school improvement. He added that the principals engage the community in school activities and get them to understand the situation, constantly building trust.

The findings especially demonstrated that the relation between school-based management and access to education, environment and infrastructure and instructional materials among participating schools. Access to education has been significantly expanded since the implementation of school-based management. The enrolment rate in the participating schools has considerably progressed to slightly over 90 per cent. The education statistics and indicators of MoEYS identified that there was a considerable increase in enrolment rate in primary school from 77.8 per cent to 92.1 per cent between the 1996/1997 and 2006/2007 respectively (Chhin and Dy, 2009, p. 117). Also, school environment becomes safe and friendly. It becomes evident that instructional materials are more available to support the process of teaching and learning at schools. The development of necessary teaching and learning materials has been made at school cluster which is a group of schools geographically located near each other in the same community and works to address the priorities for school development. In practice, teachers in the cluster assemble to design some important materials accordingly and exchange in the cluster.

## *6.2. Operational Aspects of School-Based Management*

The transfer of decision making authority from central government to school level decision makers is very fundamental in the practice of school-based management as a way to accomplish the desired objectives in education. A special attempt therefore was made in this study to examine various decision making authorities and responsibilities that are devolved to local education stakeholders and the extent to which those people take part in the decision making process.

The findings demonstrated a similar practice of school-based management defined by Caldwell (2005) that school-based management in a system of public education is the systematic and consistent delegation of authority and responsibility from higher education level to the school level to decide on day-to-day school operation by complying with an indicated framework of goals,

policies, curriculum, standards, and accountabilities (p.55). In this study, the extent to which power for each decision making area devolved to the school level people differs accordingly.

One of many decision making authorities transferred to the school level stakeholders is planning and development. The principals and teachers reported that they have greater power to decide on what should be the agenda of the school operational plan and how this should be implemented. As indicated by the respondents that there are several regular meetings held at the beginning of the academic year that the principals, teachers and SSC assemble to develop the school plan by integrating the ideas collected from the participants, aligning them to the national education policies. Those stakeholders are free to go for their school vision-mission, structure, and date of various meetings grounded on their decision agreed by the participants. The findings are to some extent consistent with the suggestion by Herman and Herman (1994) that the local stakeholders should be allowed to make decision over the establishment of regulations related to students, employee, and other matters that differ from the given set of guidelines, but are relevant to the needs and practicalities of the context.

The quality of learning greatly depends on the relevance of the curriculum and quality of instructional preparation and the degree of decision making given on how the instruction should be designed to assist the students learn productively. The findings indicated that even though the teachers have to use the curriculum designed by the MoEYS, they have been empowered to review and adjust the curriculum to the needs and relevance of the student. However, a few teachers went through the review and many of them mentioned the limited knowledge of the curriculum, time constraints and shortage of necessary resources. As reported by the teachers that some of the lessons and learning activities are not relevant to the needs of the children in the schools that the flexibility of choosing new learning lessons related to the interests and needs of the learners needs to be made. In addition, it becomes observable that the teachers have been empowered to develop necessary instructional materials, use transformative teaching approach, conduct classroom assessment, design extra-curricular activities and set flexible timetable for learning. Many elements mentioned by Di Gropello (2006) and Herman and Herman (1994) have emerged in the study, except the selection of textbook and curriculum which is decided by the MoEYS.

The successful implementation of school management is driven by how the human resources or the personnel are placed to fit the school vision-mission, school structure and their expertise in the field. The findings presented that authority for decision making on personnel management and mobilization transferred to the principals remain weak. The principals claimed that they have no power to recruit or fire any staff in the school, but mobilize them as posted by the provincial office of education in accordance with needs of the school. The principals have been empowered to assign task and responsibility for teaching and non-teaching staff based on their expertise and to nominate the staff for promotion and award. The findings seemed contrary to what Di Gropello (2006) found in the practice of school-based management that the establishment of incentives for staff, recruitment and appointment of teaching and non-teaching staff, staff performance appraisal and funding professional development are made at school stakeholders.

The findings indicated that the distribution of the budget known as Program-Based Budget to the schools is mainly computed on the population of the students regardless of school size, location, and needs. It is no doubt that the schools with larger population likely receive greater amount of budget whereas the schools with smaller population receive less budget. In other words, greater amount of budget may make considerable progress to the schools because their needs are better met. The main issue in budget management is that the budget allocation is centrally pre-determined and allocated into various codes and sub-codes leaving the school stakeholders minimal room to make decision but to comply with. This is contrary to the findings by De Gropello (2006) that the budget management is made by the location education stakeholders so that their needs are fulfilled. In

addition, the principals and teachers mentioned that the budget usually arrives irregularly that some activities and programs are delayed. The study moreover found out that supplementary budget is contributed by donors, generous people in the community and parents of the students.

The decision making authority over school environment and infrastructure has been greatly empowered to the local school stakeholders. It was agreed that there has been significant improvement of both classroom environment and around school environment. All participating schools have good learning classrooms which are well-designed with friendly atmosphere. Also, the school buildings have been established and renovated to provide safe and healthy learning space for learners and this eventually promotes student learning quality. It becomes noticeable that the schools surrounded by community that is supportive and participative as well as assistance from non-governmental organizations make better progress in terms of school infrastructure. The results seemed to put more emphasis on the leadership of school principals.

Even though the study revealed that the authority for decision making over school assessment and evaluation which include instructional and non-instructional staff and budget expenditure, there has been little preparation and training organized for the principals. This new responsibility demands necessary skills and ability to effectively assess and evaluate. As indicated by the school principals that they have confronted administrative and pedagogical constraints which they have never experienced and they have received very minimal training. Noticeably, the school principals reported that they did not receive any school leadership and management preparation prior to their posting and minimal support has been provided to them when a new program is introduced. This has presented that the government failed to address the actual obstacles challenged by the principals and teachers to carry out the missions.

The findings evidenced that with the transferred authorities for decision making, the degree of participation of local school stakeholders significantly varies. The principals play the leading role and responsibility in all aspects of school decision making. The teachers have most authority and responsibility on teaching and learning, planning and development as well as environment. The School Support Committee representatives, usually the director, have been empowered to take part in some aspects of school operation including planning and development, budget management and maintenance and infrastructure. The issue on the participation of SSC in school decision making is that many of them do not have the knowledge of school management and they seem to rely the principals and teachers to decide. For schools in which SSC representatives are knowledgeable about school management, the participation would be better. The parents do not have any participation in school decision making process, but they have taken part in various school activities such as opening school ceremony, fund raising, teacher-parent meeting, and awarding ceremony at schools.

In order to better understand the participation of school stakeholders in school management, it is good to learn the models of school-based management developed by Leithwood and Menzies (1998) who categorized four models of SBM. The first model is known as administrative-control SBM in which the principals take most control and participation in the school operation. This is expected to improve the efficient expenditure. Second is professional-control SBM in which the teachers are given most participation and control over school operation in order to promote efficiency and effectiveness of teaching. Third is community-control SBM in which the parents and community dominantly control the school governance. It is believed that the parents and community have better understanding of the school operation. The last model is called balanced-control SBM in which the teachers and the parents and community have equal participation and authority to make decision over school management.

It becomes obvious that professional-control SBM, community-control SBM and balanced-control SBM can make better use of teachers' knowledge in decision-making and it in turn enhances the

accountability to parents and community. In this study, there seems to be a mixed approach of school-based management. In principal, the participatory decision making approach which engages the principals, teachers, SSC members, parents and community in the school management is encouraged in the participating schools. However, the principals are the main decision makers who usually take most control over staff management and monitoring and evaluation, leaving marginal gap for the teachers and SSC members to make decision. Cheng and Chan (2000) noted that administrative control SBM has been adopted by many principals in Hong Kong. These principals actually do not decentralize the authority and responsibility power over the utilization of the resources to teachers and parents.

### *6.3. Challenges in School-Based Management*

The results of this study showed that several challenges have emerged in the practice of school-based management. First, even though the participation of teachers, School Support Committee and parents is perceived to have increased, it remains low. The principals indicated that it is sometimes difficult to get teachers and especially School Support Committee involved in school management though they all had agreed earlier. In addition, the knowledge and understanding of those people on school management is questionable and they seem to rely on the principals to decide whatever decision. For example, the representatives of School Support Committee acknowledged that some school management aspects are tough to understand and they would leave this to the principals to take control. The principals also acknowledged that they have difficulty in dealing with this new responsibility. They were not familiar with the program and orientation was not organized that they had to go through error and trial along the way.

Pre-determined guidelines which leave minimal space for the school to take part are considered as a big challenge. The evidence demonstrated that the school stakeholders find very minimal room to decide on budget management as the Ministry has already set the code and sub-codes how the budget should be allocated. As expressed by the principals and teachers that the budget given does not meet their needs and priorities because the Ministry has already determined the budget allocation. In addition, teaching and learning resources to support the process of instruction seem limited that the teachers have minimal flexibility to adjust the curriculum and other instructional materials to meet the needs of learners. It not only relates to the matter of minimal decision making over curriculum but also the availability of necessary teaching and learning resources to support the teaching-learning process. The findings indicated that many students still do not have enough textbooks and supplementary learning materials to use while the shortage of instructional materials becomes problematic.

Culture and religion is found to have impact on the implementation of school-based management in two participating schools in which there is a mix of both Buddhist and Muslim students. The school principals and teachers sometimes find it more challenging to invite the parents of those children to participate in school activities. Moreover, Muslim students are sometime absent from classes due to religious practices and some of them especially girls drop out of school because their parents do not allow them to continue due to the religion practice.

## **7. Conclusion**

In exploring the implementation of school-based management in public primary schools in Cambodia, the study addressed the interrelationship among key stakeholders from the central level and school level. The central government represented by the Ministry of Education Youth and Sport works closely with the international development agencies to initiate the policies and framework of school-based management. The Ministry directly impacts the practice of school-based management at school level by providing technical and financial support and delegates

various decision making authorities to the local stakeholders to take over school operation. At school level, the success of the school-based management lies in the hand of the school stakeholders comprised of principals, teachers, School Support Committee and parents. The participatory decision making has been encouraged with the lead of school principals who work to ensure the participation of relevant stakeholders in school management. The involvement of local community and non-governmental organizations is perceived to have influenced the success of school management. The practice of school-based management is believed to have improved the concept of transparency and accountability in education.

The results of this study coupled with the extant literature of the field have drawn several major recommendations that should be taken into account for the progress of school-based management in Cambodia. First, it is recommended that framework of goals, policies, curriculum, standards, and accountabilities of school-based management should be clearly developed to guide the local education stakeholders in the implementation of the program. The legal guidance should provide greater authority and power to make decision making over school management school level people who are believed to have known the needs of learners better and been able to design more responsive strategies. The power for decision making over budget management, personnel management and the flexibility to adjust the instructional materials and curriculum should be greater devolved to those local people.

Second, leadership and management preparation for school people, especially school principals should be conducted. More responsibilities have been transferred to school people, especially school principals and transparency and accountabilities are expected from them, but minimal support has been available. This has put many school principals in hot spot in which many problems have appeared without any appropriate solutions. In this regard, the school principals need to be equipped with necessary skills and knowledge through pre-service and in-service training.

Third, a more participative decision making approach at school level should be enhanced. It has noted that the participation of teachers and School Support Committee in school management remain low. In this regard, the principals with the devolved power have to ensure that the teachers and School Support Committee are engaged in school management by reserving more space for them. In order for them to have a better understanding of school management and especially newly introduced program, orientation and workshop should be organized for them so that they would have a better awareness of the situation and prepared for the involvement.

## **Acknowledgement**

The authors would like to thank and acknowledge Asia Pacific Scholarship Consortium for providing financial support for this research and Open Society Foundations for the financial support to present the paper at ACE 2012. Also, acknowledgement goes to faculty members of Education Department, De La Salle University-Manila, the Philippines for comments and feedbacks on the study.

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*Exploring Major Predictors of Student Satisfaction: An Input Towards a  
Learning-Friendly School Environment*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

The study sought to ascertain the perceived level of importance and perceived level of satisfaction of college students on 16 student services commonly provided in a tertiary education setting within any University which include a) University Instruction, b) University Admission, c) Guidance Office, d) Accounting Services, e) Dean's Office, f) Bookstore, g) Library, h) Canteen Services, i) Computer Laboratory, j) Science Laboratory, k) Student Affairs Office, l) Campus Security, m) Clinic, n) Janitorial Services, o) Audiovisual Services and p) Overall Campus Facilities. The study was furthered by identifying specific services among the 16 listed student services that serve as determinants to a learning-friendly school environment in the tertiary level on the basis of an existing significant relationship on the perceived level of importance and perceived level of satisfaction of students on indicators embedded along the 16 student services identified. Item analysis was conducted on the services identified as determinants to a learning-friendly school environment to determine the items that serve as the specific determinants to a learning-friendly school environment on the basis of student satisfaction. The research was conducted with 399 students enrolled in Saint Louis University distributed in accordance to the population distribution of students in the different colleges within the said University.

**Keywords**

Student satisfaction, perceived level of importance, student services

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The 21<sup>st</sup> Century Educational Goals suggest a reconstruction on the different educational principles which to a degree of urgency include citizenship preparation, inclusion, and creation of an optimum learning environment (Laguardia and Pearl, 2009). While citizenship preparation is to be more of an outside-school concern, Inclusion and the Creation of an Optimum Learning Environment are the core focus of any educational institution for that matter.

Inclusion is defined as the approach whereby students with disabilities receive all instruction in a general education classroom while support services, like specialists, are expected to come to the student (Hardman, Drew & Egan, 2006) while the Learning Environment, which serves as the subject of this research, pertains to any formal or non-formal setting where students gain knowledge and skills to be used in their daily lives such that it may take form of schools, colleges, cultural centers, hobby centers and social clubs from which definition extends from the confined idea of buildings, infrastructures and machineries to the quality of service and efficacy of workforce inside an educational institution (UNESCO).

As inferred from different researches that were conducted, the learning environment is composed of 4 particular elements: Teacher-Student Relationship, Atmosphere of Inclusion, School Facilities and Services, and School Departments and Bureaucracies (Coll and Draves, 2009; Laguardia and Pearl, 2009; Stebleton, Huesman and Kuzhabekova, 2010; Roberts and Styron, 2009; Johnson, 1997; Umbach and Porter, 2002).

Additional feature of the 21<sup>st</sup> Century Educational goals is the promotion of learner-friendly school environments which is determined by the evident existence and interplay of the 4 elements of the learning environment which implies the full-scale existence of all student services in the learning environment (Gulosino and Lubienski, 2011).

In the Philippines, it is a normative practice by most Colleges and Universities to assess one variable of the learning environment, which is instruction, and make this as the sole basis in improving the learning environment. Moreover, national citations, accreditations and civil service examination passing rates are perceived as the basis of the effectiveness of the school environment in promoting learning to the students (Corpus, 2003).

However, these traditional practices of assessing the learning environment of a school are seen futile as these undermine the importance of direct understanding of the working system of the learning environment. The dangerous side encountered in such techniques of assessing the learning environment includes the ability to prepare and improve the learning environment before accrediting agencies, civil service examinations and categorical citations come into event.

This kind of scenario doesn't exempt that locale of this study, Saint Louis University, from the roster of Philippine Colleges and Universities practicing such. As far as status quo is concerned, the only area of the learning environment that students have a direct say is the time when students get to assess their instructors using a standard test that rates their teaching methods and strategies, instruction and attitudes towards the student and the subject. While for the other three areas identified, a clear and systematic student feedback is not solicited, hence, one can say that no particular improvements are done in the other components of the learning environment in basis of students' perceptions.

Hence, it is suggested that students are the best evaluator of the learning environment as students are knowledgeable with the daily transactions happening inside the school. Moreover, due to the students' direct encounter of the learning environment, no form of preparation can alter the working knowledge of the students with regard the school environment such that feedback of students on their learning environment is seen as more reliable and more authentic.

With the existence of myriad theories on the psychology of satisfaction, the necessary task to fulfill is to identify the theories of satisfaction and to narrow down roster of options and to scrutinize on these theories which fit best under well established criteria of relativity, interconnectedness and function correlation.

Following the said consideration, the theories that were adopted in this research includes the S-O-R Theory, the Satiation Cycle and the Theory proposed by Vohs and Baumeister.

The Stimulus-Organism-Response Theory incorporates the value of the individual variables of organisms, like one's personal beliefs and idea, cognition and emotion, in terms of receiving, processing and responding to certain stimulus (Algharabat, 2007) —this form of belief is called introspective or subjective psychology of satisfaction.

As for the Satiation Cycle and the theory by Vohs and Baumeister, both speaks of satisfaction as a correlated function with motivation except that the former espouses an indirect relationship between motivation and satisfaction as rooted on its target which is the short run event of things while the latter speaks of a direct relationship between the two on the basis of the long run effects of things (Vohs and Baumeister, 2008).

Having been able to identify the components of the aforementioned theories, a hybrid concept is constructed identifying the S-O-R theory as the guiding structure of the event of satisfaction and the satiation theory and Vohs-Baumeister theory as the working components which describes the psychological process of satisfaction in this way: there is an existence of a clear desire, which extends to the development of a motivation, and there exist to be a stimulus in the environment from which, a reconciliation of event happens and so if the stimulus fits the desire then satisfaction occurs and if otherwise happens, then dissatisfaction comes into event.

In the context of education, the stimulus is identified as the learning environment which comprises the different student services meaning the basis of educational satisfaction is the degree to which the learning environment provides viable and complete services to students.

Since educational satisfaction centers on the quality of services provided by the school and that the measuring stick identified is level of satisfaction students have on these service, it is only but proper to identify the different considerations students have in identifying a satisfactory forms of services.

This can be done by examining Maslow's Hierarchy of Needs, the Valence Variables of Gender, Age and Culture and Gardner's Theory on Multiple Intelligences. The Hierarchy of Needs by Maslow assumes that there are existing needs that are categorized in a hierarchical manner;

hence, each level of needs comprise different variables that needed to be satisfied (Steve, 2007) so that if we take this concept in the context of a learning environment, different services which satisfies the physiological, safety, shelf-esteem and other needs of students should be in personal experience by students.

The idea of Age as a factor to a personalized system of satisfaction is in consonance with the theory of Development by Piaget and Erikson which says that the satisfaction of people gets into a complex state as a person gets into higher stage of cognitive and psychosocial development (Lucas and Corpuz, 2007). The element of Sex and Culture on the other hand is supported by the role congruity theory and the cultural system principle respectively. The theory of role congruity suggests that there are different needs embedded in people in the basis of their gender as gender roles and functions sometimes define the nature of work of people (Deikman and Eagly, 2008). Also the system of culture by people sometimes defines the expected values harbored by group of people and extending their constituent needs.

Lastly, the Multiple Intelligences Theory by Gardner supports the idea that different students, in line with their field of specialization, manifest different kinds of needs for the purpose of their skill acquisition and development.

In its very sense, the satisfaction of students varies for different reasons concerning their individual needs, state of existence and the like.

The stimulus is powered by the interconnectedness of the 4 different given variables of the learning environment which are (1) Teacher-Student Relationship, (2) Atmosphere of Inclusion, (3) School Facilities and Services, and (4) School Departments and Bureaucracies. All of these 4 represent the expected general atmosphere of any educational institution. An extended function of these four is the determination of an authentic learning-friendly environment. Hence, no single element is indispensable to the other in assessing the school's learning environment (Laguardia and Pearl, 2009).

### *Purpose Statement*

This study aims to identify the major predictors affecting student satisfaction along student services provided in a university, particularly its locale that is Saint Luis University.

Since the aim is geared towards knowing the level of satisfaction and perceived level of importance on the student services as perceived by the students, the essential questions of this research are identified as:

- What is the perceived level of importance of students on the different services of the school? Services include (A) University Instruction, (B) University Admission, (C) Guidance and Counseling Office, (D) Financial/Accounting Office, (E) Dean's Office, (F) Bookstore, (G) Library, (H) Food/Canteen Services, (I) Computer Laboratory, (J) Science Laboratory, (K) Students Affairs Office, (L) Campus Security, (M) Clinic, (N) Janitorial Services, (O) Audio-Visual Rooms and (P) Over-all Campus Facilities.
- What is the level of students' perceived perceive along the same identified services?

- Is there a relationship in the student's perceived level of satisfaction of the student services and their level of importance?

Extension to these questions is the task of identifying programs that would enhance the student services of an educational institution by utilizing student satisfaction as standard.

## DATA COLLECTION AND ANALYSIS

This research, centering on knowing the variables that determine a genuine learner-friendly school environment involved the assessment of all the 9 colleges—namely the School of Administration and Business Management (SABM), School of Computing and Information Sciences (SCIS), School of Engineering and Architecture (SEA), School of Humanities (SOH), School of Law (SOL), School of Medicine (SOM), School of Nursing (SON), School of Natural Sciences (SNS) and School of Teacher Education (STE)—present at Saint Louis University as its target population. Respondents included the population of Saint Louis University in the 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> year collegiate levels. Such was so because of the running assumption that students on these year levels, at least, have a first-hand experience and working knowledge with regard the different offices, services and operations present in the university.

Population sampling was used to get the total number of respondents as the representative figure of the entire population. The calculated number of respondents resulted to a total of 399 students from the varied colleges of the university. The administration of questionnaires was held using random floating of questionnaires in cooperation with the respective deans of each college.

The instrument employed in gathering data was thru the use of three-column survey questionnaire from which left most column tried to assess the perceived level of importance of students on the given items and the right most column assessed the level of satisfaction of students on the given items.

The items or determinants were placed between the column for the perceived level of satisfaction and column for the perceived level of importance by students.

There are 267 items contained in the questionnaire which were distributed among the 15 different services/facilities identified as Instruction (22 items), Admission (10 items), Guidance Office (13 items), Accounting Office (13 items), Dean's Office (20 items), Bookstore (14 items), Library (30 items), Food Services (15 items), Computer Laboratory (20 items), Science Laboratory (26 items), Students Affairs Office (16 items), Campus Security (10 items), Janitorial Services (10 items), Audio-Visual Rooms (8 items) and Over-all Facilities (30 items).

Statistical formulas employed include the use of Weighted Mean (WM) and Regression Analysis (r).

In answering problem number 1 and problem number 2, the general weighted mean (WM) of items were used to which results were interpreted in the following manner: 1.00-1.74: Not Important (NI)/ Dissatisfied (D), 1.75-2.49: Slightly Important (SI)/Slightly Satisfied (SS), 2.50-3.24 : Important (I)/ Satisfied (S) and 3.25-4.00: Very Important (VI)/Highly Satisfied (HS).

In treating question number 3, Regression Analysis (r) was used to derive the possibility of an existing relationship between the items and the significance of the relationship was validated by using a P-value of .05.

After deriving the existence of relationship between areas, item analysis was conducted using Regression Analysis (r) to identify items that serve as major predictors of student satisfaction in line with student services.

In terms of answering the different problems of this research, the researchers tried to incorporate local and international literatures to substantiate claim.

Also, since this research concerns students' satisfaction, researchers incorporated the perceptions, students of the locale of this research. The suggestions of students and the programs that were gathered thru informal interviews were incorporated to come up with a single suggestion for each program/service that was assessed in the research. All in all, the methods mentioned are the ones employed in the completion of this research.

## RESULTS AND DISCUSSION

*What is the perceived level of importance of students along the different services of the school?*

Students' perceived level of importance on the different university services garnered weighted means for individual items in the different areas that were identified that lie within the range that corresponds to a descriptive equivalent of "very important" except for two items. This means that 265 of the total items in the questionnaire were considered as "very important" in determining a learning-friendly environment while 2 items were considered as "important" determinants of a learning-friendly school environment.

**Table A**

Overall weighted mean of students' perceived level of importance of the school services

Areas	OWM	DE
A) University Instruction	3.63	VI
B) University Admission	3.50	VI
C) Guidance Office	3.57	VI
D) Accounting Office	3.59	VI
E) Dean's Office	3.62	VI
F) Bookstore	3.53	VI
G) Library	3.59	VI
H) Canteen Services	3.62	VI
I) Computer Laboratory	3.58	VI
J) Science Laboratory	3.44	VI
K) Student Affairs Office	3.57	VI
L) Campus Security	3.64	VI
M) Clinic	3.57	VI
N) Janitorial Services	3.59	VI
O) Audiovisual Services	3.63	VI

P) Overall Campus Facilities	3.58	VI
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In Table A, it can be seen that all of the groups of services that were identified were considered as “very important” in its very existence

Results above suggest that the qualification of a learning-friendly school environment is based on its ability to provide the different needs of each student in the maximum possible level.

Since students’ educational needs vary according to different introspective standards, then the components of a learner-friendly environment should be considered as multivariate. This means that it the learning-environment should comprise of different services that are perceived by students as important in their learning.

Most likely, if this holds to be true, then additional ten or more items would still be perceived to be important or even very important determinants of a learner-friendly school environment. This is so because of the idea that a learning-friendly environment should provide the complete package of learning services to the students meaning the more services that are included in the learning environment then the package of learning services gets to be more complete.

With this function of an academic institution to provide the diverse needs of students, then the balancing element to fulfill such function lies on the sensitivity of the school to provide the needs of students.

The ability to sense the needs of the students is the very foundation of all learner-friendly services. This because the consideration of students’ perception on the creation and modification of student services allow the establishment of services that is initially student friendly.

Only when the school knows what are the real needs of students can a school improve on its services and provide the necessary services because of the idea that it would still be the students who are to utilize the services at the very end and would be the one to identify whether the service is satisfactory or not.

*What is the level of satisfaction of students along the different services of the school?*

**Table B**

Overall weighted mean of students’ level of satisfaction of the school services

Areas	OWM	DE
A) University Instruction	2.72	S
B) University Admission	2.83	S
C) Guidance Office	2.71	S
D) Accounting Office	2.60	S
E) Dean’s Office	2.85	S
F) Bookstore	2.63	S
G) Library	2.65	S
H) Canteen Services	2.41	SS

I) Computer Laboratory	2.58	S
J) Science Laboratory	2.61	S
K) Student Affairs Office	2.59	S
L) Campus Security	2.69	S
M) Clinic	2.70	S
N) Janitorial Services	2.81	S
O) Audiovisual Services	2.47	SS
P) Overall Campus Facilities	2.49	SS

In reference to the table above, it can be seen that students expressed different levels of satisfaction towards the student services. This can be verified on the services where students expressed a slight satisfaction on the area provided.

It can be seen that there are three areas which garnered a “Slightly Satisfied” form of response which include the Canteen Services, Audiovisual Services and Overall Facilities of the University. This only means that these areas need the most focus by the university in terms of service improvement and development.

Specific reasons given as to why these areas were least satisfying students are due to the reasons that: a) canteens in the university don’t consider the suggestions of students in coming up with the daily menu, b) there are shortages of units and rooms for audiovisual services and c) miscellaneous services like elevators, online enrollment and vending machines are not located within the university premises

Common reasons why students didn’t express full satisfaction or highly satisfied response on the student services is due to the absence of some services in some university, the presence of slow and obsolete forms of services and issues concerning the approachability of school staffs.

*Is there a relationship in the student’s perceived level of satisfaction of the student services and their level of importance?*

The importance of knowing if a significant relationship between the level of satisfaction and perceived level of importance by students do exist lies on the purpose of knowing the major predictors of student satisfaction. By this, the services crucial to the satisfaction of students can be easily identified which will allow the identification of services the needs utmost focus by school administration.

In reference to Table C, there are only 6 areas which were identified with an existing significant relationship and these are: C) Guidance Office, I) Computer Laboratory, J) Science Laboratory, L) Campus Security, M) Clinic Services and N) Janitorial Services. The other ten areas resulted to an insignificant result meaning the areas do not have a significant relationship at significance level of .05 and cannot be subjected to further tests to explain existing relationship so that on these items, students don’t consider their level of satisfaction in determining whether the determinants or items in the said area contributes to their consideration of variables contributing to the determination of a learning-friendly school environment.

Therefore, the next task to be done is to identify which specific items serve as major predictors of student satisfaction through item analysis.

**Table C**

Regression analysis on the perceived level of importance and level of importance on students' services

SOI	LOI															
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
A	.021															
B		.074														
C			.103*													
D				.003												
E					.074											
F						.047										
G							.091									
H								.027								
I									.122*							
J										.380*						
K											.062					
L												.150*				
M													.109*			
N														.101*		
O															.023	
P																.013
• <i>r</i> value is significant; <i>P</i> -value $\leq .05$																

*Major predictors of student satisfaction*

*Guidance services*

In the area of Guidance Services, the major predictors of satisfaction includes a) the presence of extension services like scholarships, exchange student programs and student organizational networking, b) the issuance of printed results of tests and c) the availability of staff during working hours.

The nature of counseling includes the prevention and correction of students' misbehavior through student monitoring techniques, direct student intervention programs, collaboration with school educators, assisting in the implementation of school instruction and providing miscellaneous activities that will develop the motivation of students to develop good interpersonal relationship with other people and motivation enough to sustain survivability in the university (Jones and Jones, 2001).

The availability of extension services like scholarship programs and exchange student programs was considered as the most important indicator of student satisfaction in the said area of service as it embodies the very essence of direct relationship and genuine student support given by the school to the students.

### *Computer laboratory*

In the computer laboratory services a) the adherence of computer laboratory instructors to school policies regarding computer use and ethics in accessing information, b) the giving of manuals on rules and policies regarding computer use and reservation and c) the presence of monitoring and inspection of laboratory facilities were considered as the major predictors of satisfaction in the area of computer laboratory services.

These items were considered as major predictors of student satisfaction along the field of computer laboratory services because it provides for the preemptive measures in promoting the good state of computers and its peripherals.

The adherence of computer laboratory instructors to school policies regarding computer use and ethics of accessing information is seen as an indicator of student satisfaction was considered as the most important indicator of student satisfaction on the said area as it provides for the protection of the personal information of students utilizing the computer services.

### *Science laboratory*

Among the specific services provided in the area of science laboratories, items that were considered as major determinants of student satisfaction includes a) the conduct of experiments that are only authorized by the school, b) the proper explanation of written laboratory directions to student before execution of any activity and c) the presence of enough water supplies and faucets in the laboratory.

The first item, though having the nature of restraint in the students' free and full-scale use of science laboratories, was considered as the most important determinant of student satisfaction as it deals with the protection of students in the use of laboratories.

The limitation of activities that can be performed inside science laboratories is very important indicator of student satisfaction as it indirectly serves as a mechanism to protect students from possible harms that may take into account due to the pure egalitarian and free use of services contained therein.

### *Campus Security*

Specific items that were considered as major determinants of satisfaction in the area of campus security include the assurance that security guards are a) equipped protective skills, b) well-groomed and c) well-disciplined.

The idea of security involves the idea of defensive and protective skills as the paramount value that is upheld. This serves as the most important determinant of student satisfaction in the area of campus security as it involves the protection of students within the university.

### *Clinic Services*

In the area of clinic services, items that were considered as major determinants of student satisfaction includes a) the sterilization and cleaning of clinical equipments, b) the availability of doctors in the clinic at anytime of the day and c) the approachability of staff.

The presence of sterilized and clean clinic equipments was considered as the most important determinant of student satisfaction in the area of clinic services as it concerns the clinic apparatus used in treating students. This is the most important determinants of student satisfaction as it serves as the tool to diagnose and treat ailments concerning the health of students.

### *Janitorial Services*

In the area of janitorial services, items that were considered as major determinants of student satisfaction includes a) the friendliness, honesty and approachability of janitors, b) the presence of cleaning materials and tools inside the classroom and c) the presence of janitors in all areas of the school.

The friendliness, honesty and approachability of janitorial staffs was considered as the utmost determinant of student satisfaction as it incorporates the factor of utilitarianism meaning that only in cases where janitorial staffs allows the establishment of rapport between the service and the students will be the only time where the said service be deemed functional in line with its function of promoting the welfare of the learning environment.

The role of the identified major predictors in relation to student satisfaction is that it allows the easy identification of student services that have a strong effect in the satisfaction of students. In this way, the multivariate component of the learning environment can be truncated into specific services that are composed of the most crucial elements that determine the level of satisfaction by students.

Also, because of the identified major predictors, the primary focus of development and modification of student services can be directed to services that have a strong and direct influence in determining student satisfaction.

*What suggested programs should be implemented to further enhance the university's student services?*

It was said that students are the best evaluator of the learning environment due to some reasons identified. This only means that the best way to ensure an ongoing assessment of the effectiveness of the services provided in the learning environment, as provided by an educational institution, is by creating and implementing programs that incentivize on the satisfaction of students.

#### *Pre-graduation satisfaction assessment program*

This program is a mandatory requirement that will be given to all graduating student as a pre-requisite for their graduation which has the aim of assessing the learning environment through the students who, at the very least, have first-hand experiences as regards the different services provided in the university.

The program requires all the graduating students of the university to undergo a uniform test to assess the satisfaction of the graduating students on the various student services found inside the university for the sole purpose of assessing which services least satisfied students and for the purpose of injecting necessary changes in the identified services.

To facilitate the speedy administration of the program, the Dean's office for each school and the Guidance office of the university are suggested to work hand-in-hand to which the administration and collection of the test will be delegated to the various Dean's Offices of the University while the task of processing and interpreting of the said test questionnaires will be delegated to the Guidance Office.

The program is intended a) to determine areas of the university where students are least satisfied and b) to develop services necessary as determined by the administered assessment. These two objectives can be measured using the average weighted mean of students' responses on the said assessment tests and the observance if an evident increase in the satisfaction of students is seen every batch of graduating students.

#### *Freshmen expectations assessment program*

This involves the identification by freshmen students of the services they expect to be present in the university in line with the degree the students are trying to pursue and in line with students' personal needs. The identification of the services needed by the students will be placed in a form that will be provided by the Registrar's Office. Afterwards, the forms will be forwarded to the Guidance Office for the purpose of summarizing reports that will be sent to the different offices concerned on the suggestions made by the students.

After collating the student suggestions, forms will be directed to the respective Dean's Office to which college the freshmen students belong.

The forms will be released by the various Dean's Office to the concerned students so that students will be able to assess personally the progress of the services they identified during their first-time enrolment.

A feedback form will be given to the students to identify the progress of their requested services to which feedbacks of the progress by the students will be sent to the Guidance Office for the purpose of collating and distributing the results of the students' feedback to the concerned students. This will be done every after the semester to report progress or non-progress of students expected programs from their first-time enrolment.

#### *Student quasi-accreditation program*

This involves the active participation of the KASAMA/SSC towards promoting student learning. In this program, the KASAMA/SSC is obliged to create a pool of student who will accredit the services provided in the University. The pool of students will be chosen in accordance with the ability of the student to give clear volition as regards to the nature of the task which is to accredit the school in terms of the services provided.

The Accreditation Program will use a personalized checklist of items which is devised by the KSAMA/SSC to test areas of the learning environment that needs improvement.

The Accreditation, with the same nature of identifying the level of the services that are present in the university, is not an accreditation to promote the University of any Status but an accreditation to inform the university offices as how students tend to view the level of services provided.

The program will be performed every school year and results will be summarized by the KASAMA/SSC and will be communicated by the same to the offices concerned as regards the accreditation done by students.

## **CONCLUSION**

From all of the results, discussions and recommendations that were revealed in this paper, the function of student satisfaction as a means to assess and to identify the effectiveness of services provided by an educational institution is considered as the most effective and most reliable tool of measure.

Hence, in determining the quality of services provided, student satisfaction should be considered as the primary tool of measure as it solicits authentic and objective information about the learning environment.

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*Analysing the Influence of Student Talk in the Meaning Making Process in a Religious Education Classroom in India*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

This article is a snapshot of an action research study conducted to develop student talk as a meaning making tool in a religious education classroom in India; where most of the students came from a passive learning environment. It examined the role of talk in student learning and the various factors that enhanced or hindered talk in classroom. A range of teaching/learning strategies were implemented to stimulate talk within classroom. This research is embedded in Vygotsky's theory of 'Social Constructivism', where he asserts that learning is influenced by social interaction. The data was collected through student work, teacher's reflective journal and focus group discussion. The outcomes of the study suggested that when students develop the requisite skills and are provided with opportunities to dialogue within a classroom; student talk helps in contextualising the content and facilitates students to create a personal meaning of the content.

**Key words:** student talk, dialogue, discussion, meaning making

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## 1. Introduction

*“The relation of thought to word is not a thing but a process, a continual movement back and forth from thought to word and from word to thought. In that process, the relation of thought to word undergoes changes that themselves may be regarded as development in the functional sense”. (Vygotsky, 1986, quoted in Haneda, 2009)*

Vygotsky believed that to develop thoughts and express them in words is a process and it requires a continuous movement of going from word to thought and thought to word. I have often experienced this kind of exchange of thoughts to words and words to thoughts as a student in the class, and observed it when my students in UK were asked to discuss things during pair share or group activity. During this dialogue there was an exchange of thought among different students, this exchange of thoughts served as a cognitive stimulation to understand the concepts and generate new ideas. It helped students to realize their role of being partners in construction of knowledge.

During my practicum in the UK Religious Education Center (REC), I have practiced small group activities in classroom. I observed that this practice gives an opportunity for the students to interact with each other, discuss their understanding of the content, fetch in examples to contextualize it and construct their own understanding of the content. This became a tool for assessing; the student understanding and application of the knowledge acquired.

The approach to learning in most schools in India is still through transmission of knowledge and rote memorization (Alexander, 2000; Clarke, 2003), where students rarely express themselves verbally. In this kind of an approach the teacher is believed to be the repository of knowledge and the students are considered to be the recipients of knowledge. Here the student rarely makes any active contribution towards learning. This approach is the result of many factors ranging from the larger number of students in a class, time constraint, low quality of teaching and teacher education, and grade centered approach.

### 1.1 Hypothesis

This small scale research study was an effort to investigate how student talk during the various activities in a classroom enhances the meaning making process of the students in the Indian REC classroom. It mainly focused on analyzing the nature and extent of interaction among students who rarely have such opportunities in classroom. It also observed the influence of various factors like group dynamics, pedagogy, and the topic of the talk; on the construction of knowledge through talk.

### 1.2 Context

The study was conducted as a part of the two year course Masters of Teaching (MTeach) as a participant of the Secondary Teacher Education Programme (STEP)<sup>i</sup>. It was an action research conducted in REC of the *Ismaili*<sup>ii</sup> community, situated in the western suburbs of Mumbai, India. The REC classroom was a blend of students, it would be interesting to study how the group which is so heterogeneous in terms of gender, school background, social background, and different learning styles; converse in classroom. The study was conducted over a span of five weeks with three hours of classroom teaching per week. The eighth grade class of 16 students consisting of six girls and ten boys, of age 12-15 years, was selected on the basis of random sampling. Due to secular coaching

classes, the attendance of the students was inconsistent, ranging from nine to twelve students in the class. The module taught to these students was “On the wings of words”, containing pieces from Muslim Literature. There was no specific reason for teaching this content, but it was in continuation of the module taught by the host teacher.

## 2. Literature Review

Extensive research studies have shown that the process of thinking and talking undergoes changes and helps an individual to develop their own thoughts and knowledge over a period of dialogic exchanges with each other (Barnes *et al.*, 1969; Britton, 1970; Nystrand *et al.*, 1997; Mercer, 2000). A range of literature and studies have defined various forms of talk such as dialogue, discussion, debates, as student talk. In the context of this research ‘student talk’ has been understood as, “any on task verbal/oral expression of the students in the classroom, in form of whole class discussion, dialogue with teacher, and talk among students during the small group or pair share activities”. A brief understanding from the quantum of literature encountered is presented below which helps to understand the various facets of student talk in teaching/learning process.

### 2.1 Learning through talk

The construction of meaning among students is not only the result of the encounter between the newly acquired knowledge and their prior knowledge, but it also arrives from their interaction with others. This interaction is crucial not only for their understanding of the subject knowledge, but it also plays a role in ‘*the development of their identity, their sense of self and worth*’ (Alexander, 2006). Talk is considered as one of the effective ways through which we can gauge the ‘*thinking, feeling or learning*’ of a student (Fisher, 2009). Sfard (1998, quoted in Haneda, 2009), proposes the two metaphors of learning; ‘*acquisition*’ and ‘*participation*’, which are very crucial as they provide complementary perspectives on learning. He propounds that only acquiring knowledge in isolation is not learning, learning in a classroom takes place when all the participants participate to achieve the objectives.

Fisher (2009) lists the benefits of talking together in groups in a classroom. It helps students to:

- *ask questions and pose problems*
- *investigate and solve problems with others*
- *think more widely and deeply*
- *learn collaboratively as a part of a group*
- *develop dialogic skills*
- *practice social and cooperative skills*

All these benefits of talk give the students an opportunity to think, understand and make meaning out of their own learning in the class, which further enhances their cognitive and social development. Research has shown that not all talk in the classroom helps in the construction of meaning making and nor does it necessarily lead to enhanced learning and getting mentally challenging responses

from the student. The research further suggests that conversations which include discussions or dialogue result in the most effective learning (Fisher, 2009).

## 2.2 Dialogue and discussions enhance learning

Discussion-based learning has led to achieve '*subject mastery, reading comprehension, conceptual understanding, problem-solving ability, moral development, attitude change and development, and communication skills*' (Henning, 2008). Alexander (2006) describes dialogic teaching as harnessing the power of talk to stimulate and extend pupils' thinking and advance their learning and understanding. Bakhtin (1981) proposes that dialogue is very important, because it provides with an avenue where there are no fixed meanings but there is a perpetual exchange, possession and creation of new meanings.

Gambrell (1998, pp.31) on the basis of his examination of various studies asserts that, "*student-led discussions allow to try their own thinking and engaging in exploratory thinking, resulting in more extended and more elaborate mental representations and higher level of analytical thinking.*"

## 2.3 Learning Communities

*"The classroom is seen as a collaborative community: Joint activity, by definition, requires us to think of the participants, not simply as a collection of individuals but also as a community that works towards shared goals, the achievement of which depends upon collaboration"* (Wells, 2000, pp.54).

Lave and Wenger (1991) emphasizes that learning is not an independent activity, which can be achieved in isolation, but is achieved through participation in '*community of practice*'. They further insist that the community in which the individuals participate should be able to extend assistance in terms of values, knowledge and skills that are practiced in the community. Hence classrooms in longer run can be viewed as community of practice where it becomes a place of '*potential change and renewal*'. Every situation in the classroom is challenging and requires the students to indulge into a joint effort to construct solutions which are innovative. Hence, classrooms can be interpreted as Vygotsky's '*zone of proximal development*' (ZPD) – zone where the individuals achieve more with assistance than individually (Moore, 2000).

Wells (1995) recognizes the two roles a teacher should play in the learning community, first is the teacher should act as a *co-inquirer* with the students and second the teacher as leader and organizer of the community's activities. Here the teacher is responsible for selection of the activities and ensures the use of appropriate resources to achieve the aimed objective. "*Teacher instruction should always be accompanied by teacher-student and student-student dialogue. In this social context, the internal (and therefore 'invisible') 'developmental processes' set in motion by instruction are able to develop and flourish until the student possesses them. When this happens, the processes are 'internalized' (Vygotsky 1978, pp.90) and 'becomes part of the child's independent developmental achievement'".* (Moore, 2000, pp.16)

Although not much literature was found on student talk in RE classroom, it is interesting to note the study conducted by Schihalejev (2009), where the author examines the possibilities and hindrances in the use of dialogue in RE lessons. He finds that learning through dialogue is seen as valuable for self-understanding, mutual understanding, and understanding concepts. He further asserts that the teacher plays an important role in designing and facilitating the whole process of dialogue in the classroom. Kukanboev (2009) carried out a similar study in STEP class in Khorog, expresses that the

flexibility of the STEP curriculum in terms of what knowledge to give and how to give it also favors the talk in classroom which results in construction of knowledge.

The literature review provides an overview of the various studies which indicates the role of talk as a powerful learning tool. This study had particularly used the dialogic and discussion approach to lead the student talk and analyzed how these pedagogical strategies enhanced meaning making in RE classroom in India.

### **3. Methodology**

A qualitative approach was adopted in the study, as it mainly dealt with the qualitative data gathered, i.e. the data to be analysed was a transcript of the talk of the students. As in the analysis of qualitative data, in this study also the 'raw' data collected during the practicum was interpreted and analysed by the researcher (Denscombe, 2007). The drawback of using qualitative analysis is the threat of not being objective with the data; often researchers tend to become subjective (Hopkins, 2008).

#### **3.1 Action Research**

This was an action research study, where I implemented, reviewed, evaluated, modified and again implemented the strategies, as per the student responses in the subsequent classes (Mills, 2003, in Hopkins, 2008, pp.48). Various teaching strategies were applied to provide numerous opportunities for students to converse in the classroom with their classmates and the teacher. This timely evaluation and modification of strategies ensured that the focus of the study remained intact.

#### **3.2 Ethical considerations**

The study is utilizing the student conversation as major data; therefore it is important to get the consent of the parents, since the students are minor. During the study, at some points video recorder was used in the class and certain parts of which were documented in the report. A parent's orientation meeting was organized wherein the parents were informed about the aims and purpose of this research and their consent was taken. Each student was given a pseudonym, to uphold their confidentiality while documenting the data in the report. A constant dilemma which continued throughout the study was balancing out the role of being a researcher and a teacher. As an ethical researcher I have tried to report fair, accurate and relevant data from the study, trying to keep out my personal bias while analyzing and presenting the data (Norton, 2009).

### **4. Data Collection Method**

The data collection methods selected aimed at capturing talk of the students in the classroom during the lesson where they were interacting with their classmates or the teacher in the class. Three data collection methods were used to form triangulation of data, to assure the utmost validity and reliability of the data collected (Denscombe, 2007).

#### 4.1 Teacher's Reflective Journal and Field Notes

The reflective journal was maintained on a day to day basis, to capture the critical incidents (Tripp, 1983) in the classroom. This presented a narrative of the classroom and the contribution of each student during the lesson. Since action research dominated the methodology of my research, reflective journal was a very helpful tool to evaluate and review the lessons for the subsequent classes. Journal entries can tend to be subjective as it is the writer's interpretation of the things witnessed in the class (Hinds, 2000). Unlike the video recording, the journal entries were inefficient in capturing every word uttered in the classroom, as it was subject to human memory and field notes taken during the class.

#### 4.2 Student Work

The daily activities in the classroom culminated in producing some kind of student work in the form of filling up activity sheets, making presentations in groups and creative writing in groups (Hopkins, 2008). This work demonstrated how students adapted and benefited from the various strategies which stimulated talk in classroom. It also helped in recognizing the role of talk during the lessons in the construction and application of knowledge; hence it helped in assessing the student learning.

#### 4.3 Focus Group Discussion

The focus group helped in conducting in-depth interaction with students, who had practiced in this learning approach in the classroom. It is a forum which opens up the arena for the students to express their views in detail (Cohen et al, 2007). This group discussion helped to communicate the students' view points, interpretation and meaning of classroom dynamics. Although it is used as qualitative data, it only helped to establish the student perceptions at that very particular time (Wilson, 2009).

### 5. Findings and Analysis

The presented data reflects the implications of the various strategies implemented during the lesson to enhance learning through talk. The analysis of data brought forth the various parameters which either influenced or hindered the students' construction of knowledge through conversation. A thematic presentation of the findings is given below along with the analysis.

#### 5.1 Adapting to the shift in learning

Communication starts with a task assigned in the classroom and the students build on their ideas. However, during this study my observation and the notes in my reflective journal (RJ) in week one suggests that:

*"When the students were paired up to do the 'think pair share' activity, most of them filled up their own individual activity sheets, without really talking to their peers".*  
(Reflective Journal (RJ), 31<sup>st</sup> May 2010)

Further reflecting on this, I felt that the aim of pair share activity was for students to discuss with their partners and bounce their ideas back and forth, resulting in 'interthinking' (Mercer, 2000), and then writing their individual thoughts on their individual activity sheets, which did not take place.

*"There could be various reasons for sticking to individual work rather than sharing with others, the individual activity sheet could be the indication of achieving individual task and therefore there was no shared goal to achieve between the two. This restricted them from having a feeling of a common goal and hence they relied on self knowledge to achieve the given task. The simplicity of task could have been a factor, resulting in limited conversation or no conversation between partners". (ibid)*

On further speculation, students were not used to working with peers. The students were unsure what to talk. The talk captured was either very superficial or was off task, and there was no deep discussion on the task. The secular schools and RE classes prior to STEP did not provide ample opportunities to converse and learn from peers, this was indicated by students during the focus group discussion (FGD). Hence peer talk was not valued within the students.

During the second week, it was observed that, there was a slight shift in students, when they were in groups of three/four. It was observed that during the activity the students came together to perform the task. Recalling from the reflective journal:

*"It seems that the complexity of the task could be a driving force for the students to collaborate with the group members to accomplish the given task (Watkins, 2001). While I was going around groups to observe them and facilitate them, it was noticed that the students initiated the task by deconstructing the meaning of similes and metaphors, which were taught to them in their earlier classes, they started recalling it by drawing examples". (RJ, 6<sup>th</sup> June 2010)*

After having a shared understanding (Barnes, et.al, 1995) of the terms, they actually had to recognize the metaphors and similes in the poem. It was observed that the cohesiveness of the group increased with the complexity and difficulty of the task assigned. This increased the length of discussion between them, and their collective thoughts and ideas were presented together on a chart.

The students in FGD elaborated that in an active learning environment they were presented with an opportunity to talk and discuss rather than just filling out the activity sheets. Hands on activities such as role play, model making and debates provided them with an opportunity for collaborating and learning from others, and constructing their own knowledge out of this experience. Active learning environment thus facilitates in the meaning making process of the students in the classroom, where they learn and reflect to make sense of their learning (Watkins 2001).

## 5.2 Contextualizing the content

The dialogue in classroom indicated how students were contextualizing the content, by drawing on from the examples of their own context and life experiences; leading to a better understanding of the concept.

*“Some of the pupils had an expression of surprise on their face. Sahil then brought in the example of a ‘Shok Sabha’ (obituary meeting) especially followed in Hindu tradition, where after a death of the person, the family and friends of the deceased person come together, and sing poems or present a speech as a tribute to the person. The students were further lead to think of such an event in Islam. Karim, and Falisha said ‘Muharram’iii; with some uncertainty. It was then unpacked by relating to the event from the Islamic history, which the students have learned in their previous classes. They then reflected on how it is being commemorated among other Shia Muslims, by reciting poems and prayers, and giving sermons on the qualities and life of the Imam.” (RJ, 31st May 2010)*

## 5.3 Application of the Acquired Knowledge

The RJ brings out another incident of learning through discussion, from the fourth week of the practicum.

*“The lesson was based on prayer. The “hook” activity started, by asking each student to pick up a piece of paper on which one of the letters from the word prayer was written. The student had to give one word starting with that letter related to or connected to God / Allah; for example Kashina got E and she said enlightenment. In this way each student gave one word which could be connected to God and then they were asked to reconstruct the jumbled word to form the word ‘PRAYER’. Moving forward I asked the students to think of the themes they would include in a prayer. There was a list of things the students came up with like thankfulness, shower blessings, Deedar (enlightenment), praise, asking for mercy, forgiveness of sin, expressing gratitude, showering peace and Rehmat (bounty), express love for God. All these were jotted on the white board.” (RJ, 20<sup>th</sup> June 2010)*

The students were then put into groups and were asked to write a prayer picking up some of the themes written on the board. The student work presented in the class, displayed that they came up with beautiful poems, where in they picked on one or more themes discussed. It was also evident that the students had written the prayer in the form of a poem, which they learned in their earlier lessons and also made use of appropriate literary elements like metaphors, similes, and rhyming schemes. This student work demonstrated the learning during the present and the previous classes was retained and recalled and culminated in the application of that knowledge in their own meaningful piece of creation.

## 5.4 Group Dynamics impacting talk in the classroom

It was the third week of the practicum. The group members had to read the content and understand it, deconstruct the meaning and then illustrating it on paper. During the presentation they also had to critically analyze the literary elements in the passage. It was observed that within a group there were some individuals who voluntarily took the role of group leader and took initiatives and instructed other group members.

The following excerpt from the FGD and RJ reveals what students feel about the composition of groups and how it affects their learning:

**Karim:** *I like working with those people who are of my ideas and thoughts, open minded, those who understand my ideas and agree with me*

**Faayaz:** *Sometimes, I feel very disappointed, when you get a topic to work on, which I am very interested in, but my group members of the group, they are very mischievous, they are not bothered about others in the group, and they are just roaming about themselves, that is very disappointing that it is such an interesting topic, we can do many things out of it, but the group members are not coordinating with me (FG, 3<sup>rd</sup> July 2010)*

## 6. Discussion

The study analysed the extent of the meaning making process facilitated through talk in terms of creating learning communities, enhancing learning while interacting with peers and effectiveness of group work. In this section I would discuss the limitations and challenges, and also some components of student talk which have emerged from the study.

### 6.1 Research Methods

This research being a participatory action research helped me to experience the classroom dynamics during the process. It helped me to reflect on every stage of the research and thus gave me an opportunity to improve my practice and modify the research elements as the need arose (Hopkins, 2008, pp. 47). Being a participant my observations and reflections, aspired me to collect accurate data. The challenge with the practice of observation is, there is a possibility to incorporate ones own personal bias. The duration and the design of the research restricted my observation of student talk when students are in a different classroom or among another set of students.

The reflective journal was referred to most of the times while analyzing the finding. It was used as the primary source of data, as it captured the processes of the classroom through field notes, and my own reflections and comments on the classroom processes. It was a quite reliable data; only noting down the conversations among students and teacher, so as to maintain the objectivity of the journal. This commentary was analyzed further through my reflections, which helped to modify my strategies to shape the course of talk in the classroom, and to increase the learning opportunity for students.

The findings from the focus group to a great extent corresponded with the findings of the reflective journal. However, question can be raised on the validity of the discussion. Only five students out of

the selected eight represented the group, this restricts us from generalizing these responses for other students in the class. One factor which strengthens the reliability of these responses is that, students' behavior during discussion was not different from that in the class. Hence, it can be said that although there was a small representation but the finding were significant and complementary to those of the reflective journal, when triangulated.

## **6.2 Learning through talk during dialogue and discussions**

Dialogic classroom opens up the conversation for the whole classroom. This gives an opportunity for every child to speak and contribute to the learning of the whole class. This helps in creating an atmosphere which is conducive for forming a community of learners. This was evident from the lessons in the first week of the study. The reflective journal clearly demonstrated that my role here was to act as facilitator for continuing the dialogue in the classroom. It was noted that I as a teacher had to build on every students' response. The students brought in their prior knowledge and were trying to connect it to the present discussion. This process of connecting prior knowledge to a new idea materializes in creating new meanings for the learners (Myhill et al, 2006).

During the whole class discussion the teacher acts as the focal point through which the dialogue with the students continues. The course of dialogue depends heavily on how and where the teacher wants to lead the students to think. The skill of questioning and the quality of questions the teacher asks are very crucial in the meaning making process. The teacher directs the learning of the students by adopting the higher order questioning techniques (Fisher, 2009). To keep the learning perpetual I further build on their knowledge by asking them questions leading towards the content of the curriculum. The planning of questions plays a vital role in taking the discussion further. Here I had planned to take them from known to unknown, unfolding the learning at every stage. The student responses lowered as the continuum of questions moved further towards the unknown.

Debates, gave them an opportunity to look at the point with another perspective, where they had to defend their ideas to challenge the other group. Discussion also reinforces the learning as there is repetition of ideas within the group and between different groups. It brings about clarity and there is a better understanding of concepts taught. Discussion in contrast to explanation helps in better understanding of learning, as it provides a spectrum of different perspectives and students make meaning through them.

During the focus group discussion, the students elaborated on the advantages of discussion; by stating that discussion and debates enhanced their social skills. It helps them to think critically and creatively to present a perspective which is acceptable to others (Lindfors, 1999). The process of presentation; constructing ideas, organizing them and justifying them in front of the group members sharpen their communication skills and boost their self-confidence. Working in group and talking within the group strengthens their social skills.

## **6.3 Community of Learners**

As discussed earlier in the literature review this study was influenced by Vygotsky's theory of social constructivism (Moore, 2000). Talk in the classroom can lead to form a community of inquiry (Wells, 1999; Fisher, 2009) in the classroom. It was observed that the group dynamics affected the participation of students in the group. The group composition affects the participation of the members of the group, the achievement of the group task, and thereby their learning (Edwards & Westgate, 1994). However, it was expressed by the students that they would prefer working with

likewise people in the group, and feel they learn better this way. This response directly affects the principles of community of inquiry, where every person is an expert in one's knowledge; collaborative learning in the group brings the emergence of new knowledge; and social skills develop while working in group. This leaves the teacher with a question of, so do teachers form the same group every time? Does learning from group members means learning from people of similar calibre? How does collaborative learning work in groups of mixed ability learners? (Edwards & Westgate, 1994) Learning in groups is an inception of forming a learner's community, where the students develop their own skills and knowledge to contribute in the community, creating new meaning of knowledge for themselves and the community (Wells, 1999).

#### **6.4 Inculcating the practice and skills to talk**

In the Indian context since student talk is not being given much importance as a tool for building knowledge (Smith, et.al, 2005), this also emerged from the focus group discussion. The contribution of students is not valued, and therefore the students do not value talk in classroom. Thus they were not equipping the skills of talking and sharing with peers, within the classroom. Alexander (2006), emphasizes that it is important to develop the repertoire of learning talk among students to enable them to narrate, explain, argue, reason, justify, etc. Therefore initially the talk remained on a superficial level of sharing information, then sharing knowledge. However, these skills were developing gradually through the task assigned, but were not exclusively developed due to the short time of the study.

Mercer (2000, pp.52) asserts that learning through talk is guided when the teacher practices, '*recapitulation, elicitation, repetition, reformulation and exhortation*'. To bring that shift from sharing information to sharing their ideas and thoughts, I had to plan activities which were more complex, where they had to indulge in discussion with each other to achieve the task. This scaffolding of information led them to internalize, which led in contextualizing, and personalizing the learning (Myhill, et.al, 2006; Thompson, 2008). Since this practice was new for the students in the Indian context, the study witnessed how students were adapting to the culture of talk, but the conversation during a whole class discussion was still mediated through the teacher. The students did not take ownership of dialogue; in terms of challenging peers or commenting or responding to peers in the class. The classroom was not fully transformed into '*dialogic inquiry*' (Wells, 1999).

### **7. Conclusion and Recommendation**

The research was conducted over five weeks, which is very short time to gauge the impact of talk on students' learning. Learning through talk requires various skills like dialogic skills, collaborating, accommodating in group, linguistic skills, critical thinking skills, and skills for presenting one's knowledge. It was not possible to equip the students with all these skills in such a short span. In the context of this study I feel the students were introduced to the various forms of talk and the skills required to dialogue. The development of these skills and practice of talk requires continuous efforts from the teacher and students. The biggest drawback of talk is it does not have any written student records (Wells, 1999). The teacher needs to assure to conclude a talk with some kind of written work, which will help the students to consolidate their thoughts and retain their learning for a longer duration. Talk in the classroom requires proper planning and facilitation on the part of a teacher, thoughtful questions or probing is essential to get a deeper insight from the students.

This study reaffirmed most of the findings of previous research conducted on the subject. However, it emphasized the value of talk in the context of Indian REC which is distinct from the context of its previous studies. This study therefore provided an insight for RE teachers for including dialogues and discussions as an essential part of their lessons and classroom practice, so as to form a community of learners, who come together to construct new knowledge. The fuzzy generalizations (Bassey, 1998) from the outcomes of this study, lead me to assert that, the findings of this study are not context specific and it may be applied and practiced in any other context, with a different set of students; will have similar results, with slight variations depending on the skills of teacher and student. The findings will also largely depend on the values of teaching and learning practiced by the institution, school, and teachers, where there is flexibility of curriculum taught, and students are provided with space and time to reach their own understanding.

Thus I conclude that student talk is valuable in meaning making process in the classroom. Talk as a pedagogical tool to enhance classroom learning, largely depends on the interplay of context, curriculum, student competency, and teacher skills.

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### Endnotes:

<sup>i</sup> [http://www.iis.ac.uk/view\\_article.asp?ContentID=106627](http://www.iis.ac.uk/view_article.asp?ContentID=106627)

<sup>ii</sup> [http://www.iis.ac.uk/view\\_article.asp?ContentID=104448](http://www.iis.ac.uk/view_article.asp?ContentID=104448)

<sup>iii</sup> Muharram is the mourning of the death of Hazrat Imam Hussein, widely practiced among the *Shia* Muslims

The logo for the International Association for the Advancement of Pedagogical Research (iafor) is centered on the page. It features the word "iafor" in a light blue, lowercase, sans-serif font. The text is enclosed within a circular frame composed of two concentric, hand-drawn style arcs. The outer arc is a light red color, and the inner arc is a light blue color, matching the text. The arcs are not perfectly circular, giving the logo a dynamic, artistic feel.

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*Economic Quantification of Ecosystem Services - Priority Research and  
Learning for Sustainable Development*

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Abstracts

Nature conservation is an area for action, but also a scientific branch (called conservation biology) shaped with increasing specificity of environmental issues. As an area of action, nature conservation has reflected for a long period the research results. Initially, were used information provided by the natural sciences - biology, ecology, geography - and then were focused on its results of conservation biology. Delineation of protected areas, establishment of species requiring protective measures, formulation of conservation objectives, allocation of financial resources were made using scientific information from the areas of knowledge mentioned.

Accelerating biodiversity crisis, increasing human pressure on natural ecosystems, increasing environmental activism and scientific results have turn management paradigms of nature conservation, such that for substantiation decision has been drawn on new scientific information provided by sociology, anthropology, economics, philosophy, and information provided by traditional knowledge or obtained through experience. Science is meant to specify restrictions on obtaining social benefits, while setting goals is a political process that balances the gains and losses perceived according the society matrix value.

Recognition of needing the economic valuation of natural contributions to human welfare was followed by a concentration of research efforts in this direction. This paper presents the most important achievements for the economics of ecosystems that are required to be implemented in learning for sustainable development.

**Keywords:** sustainable development, research priority, ecosystem services

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The economic size of nature conservation is recognized at the global, regional and country level as having an important role to increase the effectiveness and the efficiency of policies, strategies and action plans. The issue of economic quantification of ecosystem services research is most important in relation to development policy needs (Nijkamp and associates, 2008).

To achieve the objectives of the United Nations Framework Convention on the conservation of biological diversity (multilateral agreement for the development and implementation of nature conservation policy, ratified by Romania in 1994), the Fifth Conference of the parties (Nairobi, 2000), *The Ecosystem Approach* action strategy was approved. Economic size is expressed in the 4<sup>th</sup> Principle of such approach: *understanding the economic context in which you act in order to ensure that possible management gains are possible*. Compliance with this principle implies the correct sizing of the economic incentives for conservation and use, reduction of market distortions affecting biological diversity and internalization of costs and benefits.

The *Athens* Conference (27-28 April 2009), dedicated to defining the European priorities for the conservation of nature after 2010, underlines the need for the *economic justification of the conservation of biodiversity*. Thus, the Conference had a special section – economy and Finance –where issues related to the economic assessment of biodiversity, nature conservation, financing costs of protection and sustainable use of biodiversity and ecosystems were debated. The message from Athens, which summarizes the conclusions of the debates, underlines the need to improve the methods and techniques of quantitative assessment (priority I, II, VII), understanding through these methods of quantification and economic value of ecosystem services.

*Priority I. A vision to answer to the question: „Why biodiversity matters?“*

It is necessary to develop and communicate a better understanding of why healthy ecosystems deliver tangible benefits that underpin our economic, social and cultural well-being. The message needs to be clear and the sense of urgency in addressing its loss conveyed. The EU institutions and Member States should:

- Develop a clear target regarding biodiversity. The post-2010 target should be ambitious, measurable and clear.
- Ensure that the post-2010 target developed for the EU includes sectoral sub-targets that address the key challenges.
- Mainstream the findings of the study on The Economics of Ecosystems and Biodiversity (TEEB) to demonstrate the strong economic rationale for conserving biodiversity.
- Make biodiversity conservation a priority for future communication programs.
- Communications need to emphasize the co-benefits possible from tackling biodiversity loss and climate change in an integrated manner.
- Develop alliances with key stakeholders who are directly affected by biodiversity loss.

*Priority II. A better understanding of where we are and what more we need to do*

The scientific work of the Intergovernmental Panel on Climate Change has shaped the political response to climate change. A strong science-policy interface is also needed with regard to biodiversity – particularly since the drivers for biodiversity loss are more complex than for climate change and the direct impacts are harder to measure. Given existing gaps in scientific knowledge the application of the precautionary principle is particularly important. The EU institutions and Member States should:

- Improve the effectiveness of monitoring the status and trends of biodiversity in the EU;
- Further develop biodiversity indicators based on "SEBI 2010";
- Develop a biodiversity baseline against which progress can be assessed;
- Improve the science-policy interface, also through supporting the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES);
- Give a higher priority to biodiversity within EU and national research programs.

*Priority III. A functioning network of protected areas*

Protected areas contain our most precious species and ecosystems. They represent the foundation of biodiversity conservation in Europe and their effectiveness has been scientifically proven. The EU institutions and Member States should:

- Complete the terrestrial Natura 2000 network by 2010 and the marine network by 2012;
- Ensure the effective management of the network – which will require adequate funding being made available;
- Support the development of similar networks in overseas territories;
- Improve the connectivity between protected sites with a particular consideration to adaptation to climate change;
- Ensure that the Birds and Habitats Directives are enforced more effectively;
- Improve communication efforts with regard to the Natura 2000 network.

*Priority IV. Biodiversity outside of protected areas*

Protected areas are essential – but they do not exist in isolation from the rest of the landscape. The state of biodiversity in urban gardens, parks and green spaces, as well as rural areas, is extremely important. This is the biodiversity that most of the European population is aware of and can contribute to. The EU institutions and Member States should:

- Ensure the effective implementation of EU environmental policies;
- Use the restoration and renewal of terrestrial and marine biodiversity as a driver for economic development and the renewal of depressed areas;
- Progressively develop a policy approach based on the conservation of entire ecosystems and the protection of Europe's "Green Infrastructure" within a multi-functional landscape;
- Develop EU policies for tackling Invasive Species including, where appropriate, new legislation;
- Implement effective measures to protect Europe's soils which are essential not only with regard to the conservation of terrestrial biodiversity but also for crucial ecosystem services.

*Priority V. Biodiversity and Climate Change*

We cannot halt biodiversity loss without addressing climate change. It is equally impossible to tackle climate change without addressing biodiversity loss. Climate change policy needs to be fully complementary with biodiversity policy and these two policy areas must be developed in an integrated manner. The EU institutions and the Member States should:

- Actively support the process of Reduced Emissions from Deforestation and Degradation (REDD) to stop global deforestation;
- Ensure that climate mitigation and adaptation measures are fully compatible with the objective of conserving biodiversity;

- Promote the implementation of “triple win” of measures that conserve biodiversity while actively contributing to climate mitigation and adaptation;
- Ensure that international climate negotiations respect the above principles;
- Develop and implement adaptation measures for nature conservation.

#### *Priority VI. Global Biodiversity*

At a global level the EU is a leading player with a significant influence in international discussions. However, Europe's consumption patterns mean that our "biodiversity footprint" in third countries is large and is growing. The EU institutions and Member States should:

- Support improved governance structures at the international level for the protection of biodiversity;
- Take measures to assess and then reduce the impact of European consumption and production on global biodiversity loss;
- Increase cooperation with development institutions and partner countries to maximize the positive contribution that the conservation and sustainable use of biodiversity can make to poverty reduction;
- Support efforts to complete and implement the global network of protected areas – in particular, in marine areas that are beyond national jurisdiction;
- Work to protect vulnerable international marine ecosystems;
- Ensure that biodiversity concerns are fully taken into account by bilateral and global agreements on trade and investment;
- Work to finalize an agreement by 2010, in the context of CBD, on an international regime facilitating access to and equitable sharing of benefits from the use of genetic resources.

#### *Priority VII. Integration of biodiversity into other policy areas*

Effective integration of biodiversity concerns into other policies is needed to (i) minimize damage (ii) maximize the positive contribution to nature conservation objectives and (iii) realize the potential of co-benefits resulting from the maintenance and enhancement of healthy ecosystems. Building the EU's 2006 Biodiversity Action Plan the EU institutions and the Member States should:

- Review the impacts that EU policies, and EU funds, have on biodiversity – including biodiversity loss in third countries. Take measure to address negative impacts;
- Ensure, taking the TEEB study as a starting point, that the real value of ecosystem services are taken into consideration when designing relevant EU policies.
- Extend policies on sustainable consumption and production to cover the sustainable use of natural resources;
- Reduce fishing pressure within EU waters to sustainable levels in order to improve biodiversity in the marine environment;
- Promote investment in biodiversity as a part of efforts to "green the economy" and fully exploit the potential that biodiversity restoration and conservation offers in terms of job creation;
- Encourage market mechanisms that take biodiversity concerns into account (e.g. Green Procurement and labelling of sustainable agriculture, forestry and fisheries products) and promote policies that allow EU businesses to profit from protecting biodiversity.

#### *Priority VIII. Funding*

Many EU and national funds open the possibility of providing financial support for protecting biodiversity. However, the actual level of financial resources allocated to biodiversity conservation remains small (especially when compared to the welfare benefits that ecosystem services provide). The EU institutions and the Member States should:

- Evaluate the success of the "integration" approach. If there is evidence that it is not working, then propose a specific funding instrument for biodiversity;
- Mobilize private funding building on experience with climate change and other environmental finance initiatives;
- Involve the finance and banking sectors systematically in the development and implementation of EU biodiversity policy;
- Review the opportunities for making progress on biodiversity a pre-condition for access to some Community funding instruments;
- Ensure sufficient funding for biodiversity conservation in the EU budget-review;
- Identify, and reform, subsidies that have a negative impact on biodiversity.

In *Romania*, the preliminary assessment carried out by the UNDP-GEF *Support for Compliance with the National Strategy and Action Plan for Biodiversity with the Convention on the Conservation of Biological Diversity and the achievement of Clearing-House Mechanism*, highlights a number of barriers that can be overcome through economic approach to conservation issues. For example, it is considered that the lack of awareness and the absence of political will can be overcome through economic assessment of protected areas and the formulation of programs to raise awareness of the authorities and the public.

Nature conservation is a field of action, but also a science branch (also called conservation biology) contoured with increasing specificity. As a field of action, nature conservation has reflected the results of long term research. Initially, it used the information provided by natural sciences such as – biology, ecology, geography, and later this branch emphasized on the results of its own conservation biology. Delineation of protected areas, the establishment of species requiring protective measures, conservation objectives formulation, and allocation of financial resources is realized using exclusively scientific information in the fields of knowledge mentioned.

Accelerating of the biodiversity crisis, the increase of the anthropogenic pressure applied on the natural ecosystems, the intensification of environmental activism, as well as scientific results have turned the management paradigms of nature conservation, in such a way that in the fundament of decision taking appeal was made to the new scientific information, provided by sociology, anthropology, economics, philosophy, but also to the information provided by traditional knowledge or obtained through experience. Lackey (1998) points out that science's purpose is to specify constraints for obtaining social benefits, while goal setting is a political process that balances the perceived gains and losses according to the value of the society.

Recognizing the necessity for the economic assessment of the contributions of nature to human welfare was followed by a concentration of research efforts in this direction. *Economy of Ecosystems and Biodiversity* project (TEEB) is relevant evidence to a prompt response from the scientific community to the informational needs of the process of elaboration of policies and strategies for the conservation of nature. The most important achievements for the economy of ecosystems/biodiversity are:

- I. Economic Assessment of ecosystem services – the most significant result is global economic valuation of ecosystem services, carried out by Costanza and Cooper. (1997) by quantifying the contribution of 17 components of natural capital;
- II. Analysis of the relationships between natural systems and human welfare – the subject of

the report of the Millennium Ecosystem Assessment (2005) achieved the UN project, through the participation of 1350 of experts from 95 countries. 24 ecosystem services have been described and evaluated and four scenarios were postulated taking into account the prevalence of transition processes (regionalization or globalization) and how to approach the management of ecosystems (reactive or proactive);

III. Methodologies for assessing ecosystems/nature/protected areas – starting from the identification of the components of the total economic value were made to quantify their methodologies depending on data availability. The methods differ depending on the existence of market prices;

IV. Analysis of the possibilities of sustainable use of ecosystems in protected areas – research based on the premise that prevention of the destruction of natural ecosystems and biodiversity depend on enabling new usage values. Through new uses of safeguarding benefits that will outweigh the benefits of the exploitation or replacement (conversion) through improvements for agriculture or for civil engineering;

V. Effectiveness and efficacy of the use of financial resources;

VI. Sizing economic incentives for conservation and use;

Although significant, these achievements do not allow the formulation of comprehensive answers to crucial questions in the economics of ecosystems and biodiversity. How to distribute the benefits of protected areas between holders of interests and on spatial and temporal scales; What is the size of the benefits for protected areas; Which are the costs of the management of protected areas; What are the costs of inaction or delay of effective actions; What is the structure of benefits; Which is the correct size of economic incentives for the conservation and sustainable use.

In addition, there are numerous issues of concern regarding the economic assessment of methodologies, and of the quantification of ecosystem services, particularly in the field of their adequacy to the specificity of economic, environmental, social and cultural that manifests itself at different spatial scales. In Romania, economic valuation of ecosystems and biodiversity is in its infancy, without a coherent and comprehensive approach to enable realistic estimates.

#### ACKNOWLEDGMENT

This work was supported by CNCIS-UEFISCDI, project number PN II-RU code TE\_336/2010, agreement no. 45/03.08.2010.

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*A Phenomenological Study about Integrating Technology into English Language Curriculum*

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Official Conference Proceedings 2012

Abstracts

This phenomenological case study was designed to investigate an English language professor's perceptions about integrating technology into English Language Curriculum. Seidman's in-depth, phenomenological interviewing method was used. The participant reveals that both teachers and students need to acquire not only the technical knowledge but also the pedagogical and content knowledge as the most profound in integrating technology effectively into the curricula. Also, the participant thinks that it is impossible for teachers to teach with technology everything they know to be of value to challenge established power relationships in textbooks and tests. Instead teachers need to be flexible and open to handle the shift in power and control inside their classrooms to create a genuinely cooperative learning environment in which students keep questioning, researching, exploring and manipulating to create and enhance knowledge. Furthermore, the participant emphasizes the role of administration in integrating technology into the curriculum.

**Key words:** Learning Technology, English Language Curriculum, Language Learning and Teaching

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## Introduction

Practitioner' preconceptions and understandings about integrating technology into the curriculum is a valuable source for pedagogical practices, curriculum developments and administrative policies. This is the purpose of the present qualitative study. The study is designed to investigate an English language professor's perceptions about integrating technology into the curriculum. Even though the study is a case study which is not designed for the purpose of generalization, reflecting on an English language professor's perceptions would not only help us realize the complexity of integrating technology into the curriculum, but it also makes us reflect on pedagogical practices, curriculum developments and administrative policies for the purpose of changing and reforming in education.

Seidman's (2006) in-depth, phenomenological interviewing method was used in the study. Seidman's method involves three ninety-minute in-depth interviews with the participant. The time between the three interviews was one week to three weeks. The time allows the participant to remember and reflect on their comments in the previous interview. It also helps the researcher to check for the internal consistency of what the participant said. As I read the transcripts carefully, I identified and marked important and meaningful themes. Then I highlighted the most pertinent themes for the purpose of the study. A cut-and-paste system was then used to create a profile for the participant.

The participant is a 42-year-old Saudi university professor. He is recognized by his colleagues and the administration as "an excellent teacher". He has a PhD in education from the United States. He has been teaching English courses for more than twenty years. He is now teaching three undergraduate courses: Teaching Methodology, Academic Writing, and Testing and Assessment.

I think his reflections speak most clearly standing alone without my interpretations or references to professional literature. I offer it to other teachers who may be moved by it as I was.

## The participant's Reflections

My English language students need to learn technological skills to advance them into the real world and prepare them for life outside academia. I think that technology is a huge force or rather goal for educators. I must learn the technology and teach my students how to use it. It can open a floodgate of learning opportunities for me and my students. It can provide me a different approach to teaching. I can use technology to teach my students complex ideas that are abstract. I can also use technology to help my students organize thoughts in a graphical ways, analyze a text, and communicate with classmates . . . I can use things like e-mail and discussion boards. They can give me and my students a forum for constructive feedback on papers. There really are endless possibilities!

While I was working as an instrumental designer for a government, I consistently saw this battle between the expert and the students that were trying to develop new technical skills . . . I have learned the hard way in my classes and it has taken trial error to become an expert teacher in my field. I had a hard time teaching someone else how to use a software program

and design skills, especially online . . . I am trying to discover new ways to help my students acquire the new knowledge they need.

Student preconceived knowledge can help teachers facilitate learning by building on student pre-existing knowledge . . . This can be utilized as a starting point for teachers and eventually luring students into learning the concept/skill. And this can be easily accomplished in a learner center, knowledge-centered, and community centered classrooms . . . This is absolutely a challenge for me, especially with a huge diverse number of students.

Sometimes teachers cannot permit this shift in power, control. They resist . . . They should see the benefit of changing roles in the classroom; otherwise, their classrooms will remain boring and uninteresting to future students . . . It is extremely easy to say I should integrate technology in the classroom. It is nearly impossible to see it in action if you do not full heartedly embrace the opportunity for change in instruction and allow the student to take an active role in participating as a learner and classroom leader. Teachers have to accept change. Change is unavoidable. It is not a problem, but those that face difficulties need direction to best serve their student.

The work I'm doing now at a university is so much more rewarding than when I was at school . . . Most of my English language students are over the age of 20 and they bring life experience into the classroom. The advantage is that they have real life experiences or expertise that they can use to assist them in making meaningful connections that will help them in the transferability of knowledge. The disadvantage is that having expertise can sometimes mean you lack the flexibility and openness to see other options.

Technology integration requires that I and my students be comfortable in relying on each other . . . A commonly seen scenario; it is the beginning of the semester, and 'Ali' has entered his computer application class only to find out that there is a new teacher, and I am not familiar with a particular software package. Ali offers to install, configure and help me get the class going in the right direction . . . Both the student and I are thrust into different roles and ultimately experience learning at different level. This is a great scenario depending on the attitudes of three separate entities: the teacher, the student, and of course, the administration.

In utilizing technological tools for research, exploration, and manipulation to create and enhance products, it is not the end results that are important, but problem based project learning and the process that are of utmost importance . . . As these new technologies develop and are integrated as work tools, I should constantly remind myself that technology comes hand in hand with obstacles that require me to be patient and create a sense of humor.

In problem and project based learning environments that were collaborative, challenging, relevant, contextualized and intensely personal, I observed students develop into increasingly sophisticated and empowered thinkers. My students sometimes constructed understandings because they had a need to know. For example, understanding how to critically analyze a text makes more sense when that knowledge is necessary in determining sources of power in different types of genres!

Memorization is not the norm, student interests drive the curriculum, and students are expected to think critically. Also, students will be seen helping each other solve problems which will build a sense of comfort with questioning rather than knowing the answer and can develop a model of creating new ideas that build on the contributions of individual members.

Furthermore, the types of assessments given in these environments will promote critical thinking skills versus memorization.

Student preconceived knowledge can help me facilitate learning by building on student pre-existing knowledge . . . This can be utilized as a starting point for me and eventually luring students into learning the concept/skill. And this can be easily accomplished in a learner center, knowledge-centered, and community centered classrooms . . . This is absolutely a challenge, especially with a huge diverse number of students.

It is the responsibility of administration to get the latest and greatest technology and then train teachers how to incorporate it into their curricula. Workshops and conferences help and need to be attended. There needs to be an open share of information about teaching approaches, learning theories and the use of technology. I also believe that there needs to be more research on the “how’s” and the “why’s” technology makes learning better. I think with the advancement of our modern lives, education must advance with it. Not only are we trying to train or students to be productive members of our society, we are training them to become productive members of a technological advanced society.

## **Conclusion**

The participant thinks that both teachers and students need to acquire not only the technical knowledge but also the pedagogical and content knowledge as the most profound in integrating technology effectively into the curricula. Also, the participant argues that it is impossible for teachers to teach with technology everything they know to be of value to challenge established power relationships in textbooks and tests. Instead teachers need to be flexible and open to handle the shift in power and control inside their classrooms to create a genuinely cooperative learning environment in which students keep questioning, researching, exploring and manipulating to create and enhance knowledge. Furthermore, the participant emphasizes the role of administration in integrating technology into the curriculum.

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The logo for the International Association for Frontiers in Research (iafor) is centered on the page. It features the word "iafor" in a light blue, lowercase, serif font. The text is enclosed within a circular frame composed of two concentric, hand-drawn style arcs. The outer arc is a light orange color, and the inner arc is a light blue color, matching the text. The overall design is minimalist and modern.

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*A Technology/Website for Speech and Text Synchronization Useful in the Training of  
Listening Comprehension in Foreign Language Learning*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012



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## 1. Introduction

In non-English speaking world, particularly in the East Asian region, such as Taiwan, Japan, Korea, and even China, learning English is almost a national campaign. Students of English as a second language in the area usually feel more difficult in listening and speaking than in reading and writing.

## 2. Motivation

In this study, we have a very simple motive: i.e., we as English learners and computer engineers, hope to utilize the computer speech and language technology to assist language learners in learning a foreign language, especially in listening comprehension and speaking fluency.

## 3. Accessibility to Learning Material in Internet

Because of the popularity of the Internet, we can now easily access to many useful audio material, with the corresponding text in foreign language. These audio/text material can be well utilized to be helpful in language learning, especially in listening comprehension. Examples include a free audiobook website, LibriVox [ref.01], and a commercial language training website, JapanesePod101 [ref.02].

Let's take a look at LibriVox

An example from LibriVox

Let's take a look at JapanesePod101.com

An example from japanesePod101.com

Some convenient tools are also provided

Human conversational interpretation

Vocabulary Flashcards

Learner's Voice Recorder

Line-By-Line Audio Transcript

One of the most wonderful tools

## 4. New Features Expected ...

As a language learner, I appreciate the website mentioned above very much.

But as a critical user, I also hope they can provide more convenient tools for learners to digest the learning materials.

One of the desired/expected functions is ....

the Karaoke (カラオケ)-style audio/text synchronization in the word level.

An example of Karaoke (カラオケ)

## 5. Techonology Involved

Speech / Audio Processing

Speech / Text Synchronization

Speech Recognition

Web/Mobile Application

Speech/Text Synchronization can be achieved in different levels

Chapter level

Adopted in most audio books

Convenient for storage and transmission

Paragraph level

Convenient in recording session

Sentence level

Adopted in many language learning sites,

e.g., japanesePod101.com

Word level

Adopted in Karaok-style lyrics

Still hardly seen in language learning material

because it is not convenient to achieve

Sub-word level

Syllable level, Phoneme level, Acoustic level, etc.

Very hard to achieve and just found in research labs

## 6. How to achieve Speech/Text Synchronization

For an audio file with corresponding text, we need to produce a ‘Timed Text’ file, where the time for each audio event should be recorded.

Several formats for ‘Timed Text’ have been proposed, including

TTML (Timed Text Markup Language) by W3C

SMIL 2.0 specification adopted in ePub

SubRip format for closed captioning in Video

LRC format for song lyrics

TRS format (used in Transcriber, based on XML)

Some examples of Timed Text

## 7. A Software for manually generating Timed Text

## Transcriber

a tool for segmenting, labeling and transcribing speech [ref.03]

### The timed-text file in Transcriber

the '.trs' file format  
xml-based

It is not difficult for manually segmenting speech in sentence levels  
because of the existence of the obvious silence segment.  
However, it is very hard or tedious for human being to do segmentation in word level  
because no obvious visual cue exists in word level.

### 8. Speech/Text Synchronization in Word level

Speech recognition technology has made a great progress during the past decades.

One of the major successful techniques is Hidden Markov Model (HMM).

HMM is a statistical approach to model speech features, usually a HMM represents a speech unit, such as sentence, word, syllable, or phoneme.

### 9. HMM Toolkits (HTK)

Given a speech utterance, it can be well aligned with a sequence of speech units by 'forced alignment' techniques in the HMM approach.

A set of HMM Toolkits, called HTK, provided a convenient way to utilize the HMM approach. [ref.04]

### 10. An Introduction to Forced Alignment in HTK

### 11. Doing a Viterbi Search for the optimal path (alignment):

### 12. Performance Measure

Testing Example:

'The Adventures of Tom Sawyer'  
from LibriVox

Counting in words of Text

Mis-Aligned: 9.14% (6,446 words / 70,496 words)

### Measuring in time of Speech

Mis-Aligned: 8.97% (2,187 sec / 24,382 sec )

13. CguAlign: A website to demonstrate Speech/Text Synchronization

14. Technology in CguAlign

Text and Audio material come from public domain website, such as LibriVox, JapanesePod101..., etc

Synchronization is done by HTK-based CguAlign technology.

The '.lrc' file format is adopted as the Timed-text format.

JavaScript language is used to construct the dynamical website.

15. Conclusion

This website demonstrate a technology to do Speech/Text Synchronization in word level.

Currently, about 9% mis-alignment rate is achieved, using HTK-based Forced Alignment technique.

It can grow to a general-purpose language training service, especially focused on listening comprehension.

16. Reference

[ref.01] <http://librivox.org/>

[ref.02] <http://www.japanesepod101.com>

[ref.03] <http://trans.sourceforge.net/en/presentation.php>

[ref.04] <http://htk.eng.cam.ac.uk/>

*Using Thai Folk Plays to Develop Mathematics Concepts of Pre-School Children*

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Official Conference Proceedings 2012

Abstracts

This independent study was to investigate the using of Thai folk plays to develop mathematics concepts of preschool children at Chumchon Ban Naduai, Loie Province. The study employed one group pretest-posttest design experimental research which took 20 sessions of 4 weeks consisting. The instruments used included the 7 lesson plans, test of mathematics concept for pre-school students. The concepts were included in the Ministry of Education's 2008 Pre-school Curriculum which covered counting and numbers 1-30, even and odd numbers, comparing in terms of more than, equal, and less than, number adding of less than 10 result, and subtracting of less than 10 numbers. The statistics used to analyze the data included mean and standard deviation. The analysis was presented in table followed by description. The findings reveal that plans using folk play could increase the preschool students' mathematics concepts in every aspect.

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## **Backgroud and Significance**

Early childhood development is at the beginning of every aspect of human life. The development and construction experience to children by means of accurate and appropriate. Will encourage children to learn things. And development around the areas. To the members of the family, community and nation

Experiences for the early childhood curriculum early childhood education is key. Development for early childhood education is the most important thing. Children should have the opportunity to develop a realistic perception of creativity and imagination (Ministry of Education, 2003)

Activities for preschool children should be in the form of "I was learning to play" because of the nature of children this age like to play more. The children will enjoy playing it. Meanwhile, the children will be learning together with (Dechakup, 1985)

Mathematics is highly important to development of the human mind. It enables a person to acquire skills in creativity, logic and systematic and methodical thinking, and allows one to carefully and thoroughly analyse various problems or situations, anticipate, plan, make decisions, solve problems and accurately and appropriately apply mathematics in daily life. Mathematics serves as a tool for learning science, technology and other disciplines. It is therefore useful to one's life, enhances quality of life and enables a person to live in harmony with others (Ministry of Education, 2008).

We should do the math to young children since. And develop basic mathematical concepts on the basis of the understanding by providing children with their own hands. This will be the situation in the daily lives of children. Requires planning and preparation for the event of an effective teacher. Opportunities for children to practice and Learn many things. Self as much as possible. It will allow children to develop skills and basic mathematical concepts. That can be used as a basis for living in the present and the future (Yielu, 1998)

Mathematics as a cultural heritage that has been passed down from generation to generation, and that creativity is the subject that enables human thinking is organized and assists in solving problems in daily life (Pog wongpanya, 2001)

## **Purpose of the Study**

A study Using Thai Folk Plays to Develop Mathematics Concepts of Pre-School Children

## **Hypothesis of the Study**

Thai Folk Plays to develop the concept of early childhood to higher mathematics

## **Definitions**

The following terms have been used throughout the present study, and defined below for clarity in their application to this study

**Thai Folk Plays** means Thai Folk Plays that have been transmitted from our ancestors. Playing with the rules of both the lyrics and dialogue. Movement. The competitive nature of the game and with the age of the child.

**Mathematics Concepts of Pre-School Children** means The idea that a person can have one arising from the accumulation or collection of facts to be learned In this research, including Counting and number 1-30 Knowing the number and odd number Comparison than less than equal Positive elements 10 Deletion elements 10 By the situation Thai Folk Plays

**Pre-School Children** means Kindergarten students are studying two years Age 5-6 years, 10 students in the first semester of the 2012 academic year Chomchonna Duang

### **Expected Application**

1. The concept to Develop Mathematics Concepts of Pre-School Children by Using Thai Folk Plays
2. Study as a guide for teachers and early childhood personnel involved in its application to teaching and learning to Develop Mathematics Concepts of Pre-School Children

### **Research Methodology**

This independent study was to investigate the using of Thai folk plays to develop mathematics concepts of pre-school children at Chomchonna Duang, Loie Province. The study employed one group pretest-posttest design experimental research. The following sequence of steps to implementation. This research is targeted, kindergarten students are studying two years Age 5-6 years, 10 students in the first semester of the 2012 academic year Chomchonna Duang

### **Tools used in the research**

Planning of activities Thai Folk Plays 7 activities and use time activities about 25 minutes. Test of Mathematics Concepts of Pre-School Children include Counting and number 1-30 Knowing the number and odd number Comparison than less than equal Positive elements 10 Deletion elements 10

### **The statistics used for research**

The statistics used to analyze the data included mean and standard deviation. The analysis was presented in table followed by description

## Results of Data Analysis

**Table 1 Number and percentage of the personal characteristics of the sample (N = 10)**

Gender	Number	Percentage
Boy	6	60.00
Girl	4	40.00
<b>Average</b>	<b>10</b>	<b>100.00</b>

**Table 2 Mean, SD and t-test to compare mathematics concepts of including Counting and number scores of students (N = 10)**

	Mean	Standard Deviation	df	t
Pretest	3.90	.994	5.60	
Posttest	9.50	.527		
				16.474**

**\*\* p < .01**

According to the results given in Table 2 , mathematics concepts of including Counting and number Averages scores obtained before and after of students were 3.90 and 9.50 and SD were .994 and .527 respectively.

It was found in the comparison between the differences of mathematics concepts of including Counting and number scores before and after to activity that , mathematics concepts of including Counting and number scores of students after to activity were increased with statistical significance at the level of .01

**Table 3 Mean, SD and t-test to compare mathematics concepts of Knowing the number and odd number scores of students (N = 10)**

	Mean	Standard Deviation	df	t
Pretest	3.60	.843	4.50	
Posttest	8.10	.738		12.075**

**\*\* p < .01**

According to the results given in Table 2 , mathematics concepts of Knowing the number and odd number Averages scores obtained before and after of students were 3.90 and 9.50 and SD were .994 and .527 respectively.

It was found in the comparison between the differences of mathematics concepts of Knowing the number and odd number scores before and after to activity that , mathematics concepts of Knowing the number and odd number scores of students after to activity were increased with statistical significance at the level of .01

**Table 4 Mean, SD and t-test to compare mathematics concepts of Comparison than less than equal scores of students (N = 10)**

	Mean	Standard Deviation	df	t
Pretest	3.70	.949	4.30	
Posttest	8.00	1.054		9.099**

**\*\* p < .01**

According to the results given in Table 2 , mathematics concepts of Comparison than less than equal Averages scores obtained before and after of students were 3.90 and 9.50 and SD were .994 and .527 respectively.

It was found in the comparison between the differences of mathematics concepts of Comparison than less than equal scores before and after to activity that , mathematics concepts of Comparison than less than equal scores of students after to activity were increased with statistical significance at the level of .01

**Table 5 Mean, SD and t-test to compare mathematics concepts of Positive elements 10 scores of students (N = 10)**

	Mean	Standard Deviation	df	t
Pretest	3.10	.738	4.90	14.080**
Posttest	8.00	.667		

\*\* p < .01

According to the results given in Table 2 , mathematics concepts of Positive elements 10 Averages scores obtained before and after of students were 3.90 and 9.50 and SD were .994 and .527 respectively.

It was found in the comparison between the differences of mathematics concepts of Positive elements 10 scores before and after to activity that , mathematics concepts of Positive elements 10 scores of students after to activity were increased with statistical significance at the level of .01

**Table 6 Mean, SD and t-test to compare mathematics concepts of Deletion elements 10 scores of students (N = 10)**

	Mean	Standard Deviation	df	t
Pretest	3.30	.949	5.40	
Posttest	8.70	.675		
				20.250**

**\*\* p < .01**

According to the results given in Table 2 , mathematics concepts of Deletion elements 10 Averages scores obtained before and after of students were 3.90 and 9.50 and SD were .994 and .527 respectively.

It was found in the comparison between the differences of mathematics concepts of Deletion elements 10 scores before and after to activity that , mathematics concepts of Deletion elements 10 scores of students after to activity were increased with statistical significance at the level of .01

**Table 7 Mean, SD and t-test to compare mathematics concepts of including Counting and number scores of students (N = 10)**

	Mean	Standard Deviation	df	t
Pretest	3.30	.949	5.40	
Posttest	8.70	.675		
				20.250**

**\*\* p < .01**

According to the results given in Table 2 , mathematics concepts of including Counting and number Averages scores obtained before and after of students were 3.90 and 9.50 and SD were .994 and .527 respectively.

It was found in the comparison between the differences of mathematics concepts of including counting and number scores before and after to activity that , mathematics concepts of including counting and number scores of students after to activity were increased with statistical significance at the level of .01

### **Conclusion Discussion**

This independent study was to investigate the using of Thai folk plays to develop mathematics concepts of preschool children at Chumchon Ban Naduai, Loie Province. The study employed one group pretest-posttest design experimental research which took 20 sessions of 4 weeks consisting. The instruments used included the 7 lesson plans, test of mathematics concept for pre-school students. The concepts were included in the Ministry of Education's 2008 Pre-school Curriculum which covered counting and numbers 1-30, even and odd numbers, comparing in terms of more than, equal, and less than, number adding of less than 10 result, and subtracting of less than 10 numbers. The statistics used to analyze the data included mean and standard deviation. The analysis was presented in table followed by description

The findings reveal that plans using folk play could increase the preschool students' mathematics concepts in every aspect.

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### REE-REE-KAW-SARN GAME





**KOM-TAY GAME**



**WING-PLUD-KAB-KONG GAME**



*The Effect of Bi-Modal Input (text and sound) on the Development of Second  
Language Listening Comprehension*

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Official Conference Proceedings 2012

Abstracts

When second language learners are exposed to a continuous speech, they more than often find the segmentation of where a word ends and where the other begins beyond their ability, especially given that English has so many specific issues in lexical segmentation. (such as reduced forms, assimilation, elision etc.) The second language learner would be more than happy to “see” a clear-cut or pause between two words, just like how the sentences are written down.

This project intends to investigate whether bi-modal input (text and sound) can have beneficial effects on second language listening comprehension. This research designed a series of interviews and assessment questionnaires to modified group A (involved in bi-modal input listening course) and control group B (involved in traditional listening course). Feedback from research was used to analyze the case of using bi-modal input in listening course. Also, comparison on listening ability improvement between the modified group and control group was made.

For the contribution to academia, second language teachers can be made more aware of how students perceive and memorize words when they listen and how is this process different from the recognition of words via reading. As a result, more efficient way of improving second language listening skills may be found and implemented in current course teaching modal.

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## Introduction and Literature Review:

As an essential part of second language acquisition, listening is a comparatively difficult one to improve for quite a lot of people. Listening to others' talking in native language, one may assume the process is a rather simple task since it seems to be automatic and effortless for people to apprehend a sequence of continuous words. But actually the comprehension of spoken words is a demanding process, in which the continuous stream of speech input signals have to be mapped accurately onto a lexicon of tens of thousands words before they are encoded and form any interpretation on the hearer's mind. For the second language learners, the listening part of studying is especially essential because it is the most frequently used technique people need in daily life. At the same time, it is also equally difficult to learn as well as to teach. The combination of "bottom-up" and "top-down" in listening can be quite a big problem for the beginners or even for the intermediate second language learners. According to my three years teaching experience in China, the people who are not having problems in reading or taking exams, they do have great difficulty in the perception of a continuous 'informal style' of public speech (Brown, 1990, p.5). That makes the question of how to improve listening ability in second language acquisition appear more challenging.

Most people consider the rate of speaking can exert a decisive effect on the understanding of a second language, therefore those people have the tendency of "blaming" others talking especially fast when they have difficulties in the listening process. In fact, it has been estimated that human can encode speech at the rate of around 25 to 30 phonemes per second though we are not able to do the same with other types of sounds such as buzz, hiss or siren. (Liberman, 1970) This demonstrates that the ability of one's working memory should be sufficient for the processing of continuous sentences in spite of the fastness.

The segmentation of word boundaries makes the major contribution to the problem at stake and the strong syllable approach is usefully adopted for solving the problem in English. One of the most prominent characteristics of speech is that the signal input varies through time. Not like the written form of language, the speech vanishes after it is uttered and that makes the speech transient. In addition to that, although the units of the input such as phonemes, syllables and words appear to follow one after another in time, the feature of linearity is not found in the physical signal. So it is generally considered that the speech signals fail to meet the linearity condition, which means there are actual overlaps and co-occurrences in the acoustic signals. (Miller & Chomsky, 1963) Thus, the problem of how listeners are able to separate the overlapped linguistic units within the limited time becomes one of the popular topics in this field.

The recognition of isolated words is already hard. The listener needs to be able to select the right word the speaker intended in spite of the speaking rate, dialect or accent and sometimes even the background noise in particular situations. What makes it more complex is that the lexicon from which the word should be selected contains tremendously numerous similar words, differing from one another often by no more than one distinctive feature. Of course, the problem becomes even more severe when it comes to the recognition of continuous

speech. Besides the difficulties stated above, new obstacle arises. As discussed in previous paragraph, since the speech is in continuous utterance, how can the listener tell where one word ends and where the next word begins? So it is asserted that the central problem in the recognition of continuous speech lies in the fact that there is no perfectly reliable cues to word boundaries. (Cutler et al., 1997) And this leads to the problem of segmentation, which means the 'difficulty in the parsing of the acoustic waveform into discrete linguistic units'. (Nygaard & Pisoni, 1995, p.65)

When second language learners are exposed to a continuous speech, they more than often find the segmentation of where a word ends and where the other begins beyond their ability, especially given that English has so many specific problems in lexical segmentation. (such as reduced forms, assimilation, elision etc.) Most psycholinguistics argue that the prosodic features like intonation and word stress are important for the perception of a connected speech because those features help listeners to segment the connected words and influence how the listener would chunk the acoustic information they heard and then put them into meaningful interpretation. Though so many methods of words segmentation in continuous speech have been discussed and explored, still the second language learner would be more than happy to "see" a clear-cut or pause between two words, just like how the sentences are written down. As Gilliam Brown asserted:

*Most literate people find it very difficult to disassociate knowledge of how a word is spelt from how it is pronounced. (Brown, 1990, p.3)*

In this essay, the main concern will be focus on whether bi-modal input (text and sound) would have any beneficial influence on the learning of English as a second language.

### Designed Research and Questionnaires:

Two years ago, the department I worked at in China set up a course called "Audio-Visual" to supplement conventional listening courses. In "Audio-visual" course, it combines listening to the conversations in videos and reading the transcripts simultaneous by showing students some visual materials. The basic design involves the utilization of projector and computers to show students some English movies, documentaries and TV news, using subtitles at the same time. We change the subtitle from English to Chinese sometimes. Very often, we found the subtitles (both English and Chinese) help students' general comprehension. In this research, by adopting different methods of teaching (using subtitles and not using it) in two groups of students who have equal backgrounds in English learning, and testing their listening comprehension at the end of the research, we discovered some new factors that may lead to some difference in one's listening ability.

The duration of this research is designed for one semester, which in China is eighteen weeks, with 10 hours of audio-visual courses evenly distributed in five days a week. Group A ((involved in bi-modal input listening course) and control group B students (involved in traditional listening course) are deliberately selected in terms of their age, educational background, foreign language level, and interest in learning. Both the groups are high school

graduates, with an average English score of 70 (full score is 100). All the students are keen in learning English since they are about to go abroad and further their study. After a semester of Audio-visual class, a formal achievement test with multiple choice and blank-filling question patterns is given to both of the groups, based on the listening materials they learned. In addition to that, questionnaires are delivered to all students, evaluating their responses and appreciation towards the conventional approach (no subtitle input) and the alternative approach (bi-modal input). The questionnaires are designed with slight difference for group A and Group B in accordance to the distinctive nature of two approaches.

Questionnaire for Group A (bi-modal input) is designed as follows:

Evaluation Questionnaire for Audio-visual Course									
Name:					Class:				
Please answer the following questions or give your personal opinions.									
1. Have you ever take part in any audio-visual class with bi-modal input (with subtitles for the listening material)? If yes, where and when?									
2. On the scale of 1 to 10 (10 being the most helpful), how do you evaluate seeing the subtitle while listening to it? Tick the box for appropriate.									
1	2	3	4	5	6	7	8	9	10
3. Compared with teacher's explanation of every sentence, do you feel actually seeing the sentences as subtitle more clear and helpful? Why?									
4. Can you keep up with the pace of the subtitle?									

5. Do you find bi-modal input can help you improve your memory, thus you can remember more material after the course?

6. How much do you understand the listening material? Tick the box for appropriate.

10%	20%	30%	40%	50%	60%	70%	80%	90%	100%

7. Do you have any further suggestion towards this course?

Questionnaire for control Group B (traditional audio input) is designed as follows:

Evaluation Questionnaire for Audio-visual Course	
Name:	Class:
Please answer the following questions or give your personal opinions.	
1. Have you ever take part in any audio-visual class before? If yes, where and when?	
2. Do you find the teacher's explanation of every sentence very helpful in terms of facilitating the understanding of listening materials?	
3. Besides the teacher's explanation, what other aids would you prefer to help you understand the listening material?	

4. How much can you understand the listening material? Tick the box for appropriate.									
10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
5. Do you have any further suggestion towards this course?									

Altogether 60 questionnaires have been distributed, and 59 collected with valid data. After the investigation and interpretation of the 59 questionnaires, we rendered that to a great extent, audio visual course with bi-modal input is superior to the conventional listening course in terms of improving students' understanding as well as memory.

In regard to the question "how much you understand the listening material?", 21 out of 30 of Group A students ticked 70% or above, with 8 of them ticked 90%. On the other hand, most of Group B students only tick 50%~60%, with only 4 of them ticked 70%. This differentiated result is also reflected in the final exam, in which Group A students scored 20% better than Group B students averagely.

Towards the question "do you find teacher's explanation helpful", most of Group B students said "yes, but it does not cover all the listening material." At the same time, Group A students also find teachers' explanation helpful but the subtitle supplemented it perfectly since the teachers sometimes omits some details.

For Group A students, 26 out of 30 acknowledge bi-modal input in audio visual course can facilitate their study quite well by tick the box of "8" or above in question number 2. On the other hand, when Group B students were asked "what other aids do they need besides teacher's explanation", 18 of them answered that they would like to listen to the material one more time or to have reading materials supplementing this course.

From the analysis of the questionnaires, we draw the conclusion that bi-modal input in audio visual course is welcomed by the students, and can in fact enhance their confidence and may eventually improve their listening capacity. In addition to that, bi-modal input can facilitate teachers in a classroom, by providing more explicit details in the listening materials.

The question "do you have further suggestion towards the course" is poorly design in this questionnaire, since most students are too timid or hesitating to raise any valuable improvement suggestion. 48 out them simply put down "No" for an answer. In our future

research, a list of designed answers will be listed as potential possibilities, from which the students can choose from.

## Conclusion:

For the second language learners, seeing the “clear-cut” of two words makes them able to segment the sentence and thus understand better. By adopting the bi-modal input approach instead of convention method in listening capability training course, second language teachers may better design their material and the second language learner can hold more confidence in their listening ability thus understand more.

For the contribution to academia, second language teachers can be made more aware that students perceive and memorize words better if both of visual and audio mechanisms are activated. By providing them bi-modal input, we may activate both mechanisms and enable the segmentation of English words more convenient. This should be considered more efficient way of improving second language listening skills and implemented in current course teaching modal.

In the daily practice of teaching English as a second language, teachers should shift their idea of single modal teaching to bi-modal, even multi-modal teaching. When it comes to persistent difficulties such as listening obstacles, innovative approaches should be adopted, targeting at students’ weak point, rather than holding onto the conventional way of tape-recorder listening.

Of course, the problem of segmentation of a continuous speech is far from resolved. Bi-modal input may facilitate second language learners in a positive way, but there are still many undecided factors involved in this process. For instance, should the visual input be demonstrated all along with audio input or should it be after audio input? When is the suitable cue to pause in the process of demonstrating the material? How to prevent the second language learners focusing on the visual input instead of the audio input? In our future study, these factors shall be take into consideration, and a larger sample group shall be included in the survey.

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*Learning at Work - A discussion of Work Based learning at the University of  
Portsmouth*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

For the last twenty years the University of Portsmouth has delivered a Work Based Learning degree, and in the last five years numbers on the programme have grown rapidly; in 2012, 160 students graduated with either an Undergraduate or Master's degree. The ethos behind the programme is that students design their own learning profile at either undergraduate or master's level, with credit being awarded for evidential experience gained in the workplace. To gain prior learning credit, students are required to complete a portfolio matching the learning gained through experience with learning outcomes declared on units delivered at the University of Portsmouth. Students then accrue additional credits (as required to achieve the award) by a series of work-based projects. For each one they must write a series of personalised Learning Outcomes and the reports must show evidence that these have been met. Experienced tutors are assigned to each student to help them deliver at an appropriate academic level. The document that their studies are based on is known as the Learning Contract. This is the first item they must submit for formal approval and assessment. The Learning Contract may be submitted for approval to one of several professional bodies. This paper focuses on the advantages of gaining qualifications using the Learning at Work pathway. The benefits to the student, in gaining higher educational qualifications and future career progression, and to employers, who gain professionally qualified employees with focus and commitment, are discussed.

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## Background - 'Angels in Concrete'

Michelangelo believed that the Angels he carved already existed within the unsculpted block of marble – they were just waiting to be released (Gustati (1863)). Trowler (1996) liked the analogy and saw how it could apply to students; in a paper on 'Accrediting Experiential Learning', he describes students as being 'Angels in Marble'. He quotes Evans (1987) who says

*'Hidden within all students...lies a mass of knowledge and skills acquired in a wide variety of ways and distributed between heart, head and hands....The task of both student and teacher is to bring this mass out into the open, to identify it through appropriate assessment, to record it...and put it to use.'*

Two academics working at the University of Portsmouth picked up on the analogy as they developed work-based learning. However they considered that marble suggested exclusivity and preferred, instead, the title 'Angels in **Concrete**' (Lyons & Bement (2006)):

**Frank Lyons** was a lifelong learner at the University. He taught sociology from 1968 to 1990 before becoming Associate Dean (Curriculum) in the Faculty of Technology. He subsequently took on the role of Director of the Centre of Excellence in Teaching and Learning in 2005.

**Mike Bement** was Director of Postgraduate studies and convened the group that set up the Partnership (Learning at Work ) programme. A former Engineering Designer who moved into tertiary education, his publications focus on learner managed education and learning measurement.

Preliminary investigation of employer support for a partnership programme led to funding from Shell and the UK government in 1989. This enabled the concept of such a degree to be explored, initially targeting young people who had left school with few formal qualifications.

The degree was to provide a balanced, integrated experience including independent task based learning with University attendance for some classes. This suggested a three way partnership between the student, employer and the University.

As the project was further developed, it became apparent that the proposed programme was better suited to more mature and experienced individuals. The pilot year enrolled seven students, all of whom had some formal qualification as well as experiential learning.

The staff appointed to develop the programme worked with the Higher Education Quality Control Group and with the Southern England Consortium for Credit Transfer and Accumulation to develop an academically rigorous credit rating for experiential learning. This added credibility to the programme so that the University, initially dubious of the idea of Work Based learning, gradually came to support it.

The programme grew and expanded to include a Master's route to allow those with higher qualifications and/or higher levels of experiential learning to further develop their educational level. The evolution of the degree was led largely by student (and employer) feedback to become the robust structure it is today. The work of Frank Lyons was rewarded with the award of a National Teaching Fellowship in 2003.

The initiative was also recognised in the government report written by Sir Ron Dearing. Entitled 'National Committee of Enquiry into Education' it talks about the need for lifelong learning to be an integral part of Education in Britain. In chapter 12, paragraph 23, of the report, Dearing notes:

*For some years now, many institutions have been producing tailor-made programmes for local businesses. The University of Portsmouth, for example, offers a degree programme for people who work in local companies, which incorporates credits towards the degree based upon the individual's learning at work and his or her previous qualifications, organised and delivered in a way that fits in with the individual's employment.*

The original motivation for designing the new programme was a growing realisation that alternative methods of learning existed. Again, Dearing's report supports the initiative to look beyond the traditional classroom learning environment. In his introduction he says

*Over the next 20 years, the United Kingdom must create a society committed to learning throughout life. That commitment will be required from individuals, the state, employers and providers of education and training.....We see the historic boundaries between vocational and academic education breaking down, with increasingly active partnerships between higher education institutions and the worlds of industry, commerce and public service.*

The traditional model for University teaching is that a team of academics design a syllabus, prescribe the curriculum and dictate the *Learning Outcomes* (see below) for any particular course, and teaching unit within it. In other words, the learning is entirely controlled by the institution. Even final year projects, where learning is more individual, often tend to be led by the interests of the project supervisor.

Bement and Lyons came from a different approach and considered how the student could be given control of his own learning. The student (in full time employment) could use Work Based projects to provide the credits for his degree. The projects were required to enable students to achieve the appropriate levels and the report would be subject to the same academic assessment as any campus based student report.

The experiment was a success. Students engaged with their own learning and with guidance, wrote their own Learning Outcomes. In other words, they designed their own degree, specifying what was required to complete it and were in full control of their learning. This led to a highly motivated cohort who performed extremely well, when measured against traditional students.

In fact, Lyons et al. were ahead of their time. In 2004, Lord Leitch was commissioned by the government at the time to write a report on 'what the UK's long term ambition should be for developing skills in order to maximise economic prosperity, productivity and to improve social justice.' This was commissioned as a response to the perceived skill shortage in the UK when compared against other European countries. The report (published in 2006) recommended

- **Focus on Economically Valuable Skills.**  
**Skill developments must provide real returns for individuals, employers and society. Wherever possible, skills should be portable to deliver mobility in the labour market for individuals and employers;**
- **Demand-Led Skills.**  
**The skills system must meet the needs of individuals and employers. Vocational skills must be demand-led rather than centrally planned;**
- **Adapt and Respond.**  
**No one can accurately predict future demand for particular skill types. The framework must adapt and respond to future market needs;**

In other words – he described the fundamental ethos of a work based learning programme!

#### How it Works Today

Prospective students make an application to the University in the normal manner, declaring a wish to undertake a Bachelor or Master degree in a variety of subject areas including Engineering, Management or Business. Any student wishing to register who cannot find a suitable title may register for a degree in 'combined studies'. The student is also asked to identify appropriate project areas in order that a suitably experienced tutor can be assigned. On the application the student must also state how many prior learning credits they are claiming. This is known as *Accredited Prior Learning* (APL) and is a key component of the partnership degree which is worth considering further:

#### **Accredited Prior Learning (APL)**

There are three ways in which students enrolling on the programme may claim prior Learning Credit.

The easiest way of claiming credit is by certificated learning or by a recognised rank or other military achievement. In these cases no portfolio is required. For instance, a Foundation Degree or Higher National Diploma (if current and relevant to the course of study) will automatically be awarded 240 credits which equates to the first two years of an Undergraduate course. As an example, in the British Military services, a rank of

Warrant Officer 1, a senior non-commissioned officer rank with high levels of responsibility, if held for at least 2 years, carries an automatic 120 credits at Master's level, thus requiring the student to complete only 60 credits for a Masters degree.

All appropriate United Kingdom armed forces military ranks have been credit-rated. The resulting equivalencies are the result of consultation between the armed forces, the University and the City and Guilds. Military personnel at higher career points are eligible to apply for recognition of their training and experience with the City & Guilds. The awards are at three levels; Licentiateship, Graduateship and Membership.

The number of military personnel continues to grow and credit equivalents have been expanded to cover all armed forces ranks, using NATO equivalents. This means that credit rating can now be applied to international forces. The department currently has a large number of Omani students studying with it, and is in the process of credit rating Merchant Navy roles.

If recognised credit is not available, then any student may submit a portfolio of evidence demonstrating accrued learning at either undergraduate or postgraduate level. The student may be able to 'match' the learning gained in the work place with Learning Outcomes as stated on any Portsmouth taught units. If appropriate evidence is submitted credit can be awarded 'as if' the unit had been studied. If a suitable unit cannot be found then the student may demonstrate that he has gained credit by giving evidence of meeting suitably worded Learning Outcomes.

The department provides guidance on building a portfolio on an individual basis, but its construction can be time consuming and carries a financial cost, so would only be worthwhile if the number of credits claimed was significant.

The advantages of claiming prior learning credit are obvious: The degree will take less time to complete and the course of study will cost less, as the student fee is calculated on the number of credits required – not the length of time of the degree. In fact, a student presenting with no prior learning would be advised to seek a formal taught qualification first – such as an HNC, HND or Foundation Degree, as the course is really only suitable for students with some experience in the working environment.

Once APL has been agreed, the student then has to agree with the University how the remaining credits are to be accrued. These will be made up from:

- Work based projects, which will account for the majority of the remaining credits (after APL).
- Taught Units from the University of Portsmouth (or elsewhere); some students opt to take these as part of their degree but time-tabling constraints and the limited availability of distance learning units mean that they are not widely used.

- The Learning Management (LM) Unit which is the only compulsory element of the programme and consists of the construction of the degree (as evidenced by the Learning Contract), together with periodic progress reports.

To initiate newly enrolled students, they are invited to the University for a one day course that includes the development of Learning Outcomes and the discussion of suitable project areas. For any students that cannot attend, all the material is available through the on-line University Learning Environment. The first submission for all students is the Learning Contract.

### **The Learning Contract**

Once students have registered they are required to construct a personal 'Learning Contract'. They must give details of their APL and outline how they will gain the remaining credits which are mostly accrued through work based projects. The students must outline their plans for each project, detailing how many credits they deem it to be worth and writing a set of Learning Outcomes for each one.

Once the contract has been drafted it is reviewed by a *work place mentor* (see below), an academic tutor, and a 'Learning Management' tutor. The mentor and tutor will be expected to comment on the project specifications; the Learning Management tutor will give more detailed feedback on the choice of Learning Outcomes and the general structure of the document. Together with the draft, the students must also submit a *reflective report* (see below) indicating initial progress and comments on the introductory Learning Management course.

A definitive contract is then submitted which is formally assessed by the Learning Management tutor. This first mark counts as half the assessment for the Learning Management Unit.

It is expected that each student will work closely within the boundaries given in his contract, with any changes resulting in a formal amendment, requiring acceptance by both tutors.

### **Learning Outcomes**

An explanation/definition of a Learning Outcome is given by Adam (2004):

*A learning outcome is a written statement of what the successful student/learner is expected to be able to do at the end of the module/course unit, or qualification. Learning outcomes are concerned with the achievements of the learner rather than the intentions of the teacher (expressed in the aims of a module or course). They can take many forms and can be broad or narrow in nature.*

Overton (2005) writing a paper for the Higher Education Academy states that

*‘Learning outcomes should:*

- be written in the future tense*
- identify important learning requirements*
- be achievable and assessable*
- use clear language easily understandable to students’*

From the point of view of the Learning Management tutor, they must be measurable, achievable and at the correct level. For instance, the verb ‘Understand’ is not considered a suitable basis for a Learning Outcome (LO) at level 6 or 7 (at which the majority of our students are working). The Learning Management Handbook, an on-line easily accessible resource, gives advice on suitable verbs to use at each level. Broadly speaking, cognition is not a higher level outcome, whereas ‘evaluate, analyse, critique, and argue’ etc are. In addition to the project based LO’s, general LO’s are required, outlining learning that it is hoped will be achieved in the course of the programme. Typically these are transferable skills encompassing (for instance) time management, report writing, communication etc.

### **Reflective writing**

An important element of every project, and an integral part of the Learning Management Unit, is the submission of reflective reports. The students are required to assess their own learning, as measured against their Learning Outcomes, and give consideration to how their approach to work, and proposed career development, have been enhanced by participation in the programme.

### **Work Place Mentor**

It is the responsibility of each student to appoint a ‘mentor’ within the work environment. The role of the mentor is to give guidance and encouragement to the student, and to comment on each submission without having to provide a formal assessment of any report. The Learning at Work Department provides guidance notes for mentors to help them understand their role. Mentors have the advantage of knowing the company, and the work in which the student is involved, and their comments are usually incisive and helpful. However, as they are not chosen by the University, it is supposed the value of each individual one may vary a great deal.

The student will complete his degree upon achievement of his remaining credits. The final submission is a reflective report commenting on the student’s experiences on the programme and should demonstrate how their General Learning Outcomes have been satisfied. The following are comments from the student cohort of 2012:

#### Student Feedback

Extracts from the End of Contract reports:

*The project complemented my prior learning and the business needs of my company. I think I am now seen as a person who leads and influences policy within my company. (MSc)*

I feel the partnership programme is a very good method of study. The ability to link in work based projects allows for full time employees to participate whilst their employers do not feel they are losing man hours to the study and research time. (BSc)

*Overall I found the Learning at Work (LatW) Partnership Programme to be a great method of achieving a degree for those in full time employment as it allows people to set their own deadlines through the management of their course. (BSc)*

.....and by his mentor

*A's professional standing within the department has significantly increased due to his learning through the WBL programme and BSc in Engineering Studies. This is evident in his application to tasks, the level of competence and where his peers are seeking his advice and direction where the path is not always clear. A chose his learning outcomes very wisely, as he considered current and future tasks, his new skills picked up along the way will no doubt serve him well.*

### Accreditation

Many Learning at Work students have an engineering background and the department has a good working relationship with the main U.K. Engineering Council institutions. Whilst the degree cannot be accredited wholesale, as each student takes a different path, the department has a well established protocol for registration with the professional bodies.

Students are encouraged to declare that they are using the Learning at Work degree to gain professional qualifications. The Learning Management tutor can then guide them to develop a definitive Learning Contract that will be acceptable for submission to the relevant institution. The contract will then be examined and discussed by the institution and feedback will be given to the student.

The institute will then inform the student if the contract is a suitable alternative to an accredited degree, or whether amendments are required. If accepted the student will automatically go to the next stage (normally the Professional Review Interview) on completion of their degree.

### Student Cohort

Many of the students enrolled in Learning at Work are in the military or from associated industries. They are mostly highly motivated in their ambition to gain a qualification before they leave the armed services, in order to improve their career prospects in a civilian setting.

The result is that the department award a high number of first class undergraduate or distinction at master's level outcomes.

The armed forces involved also benefit from revitalised, higher qualified staff who, in the course of their educational programme, will have reported upon complex technical and managerial issues. A cultural shift from 'it has always been done this way' to 'what would be the best way of completing the task' has often resulted in a more cost-effective, streamlined solution to an old, common problem.

Other students come from a variety of civilian industries. Most applicants have at least 180 credits as Accredited Prior Learning, with an additional 180 more credits required for a BA/BSc award. The nature of the degree means that it is not ideal for a student starting with no APL and they would be advised to gain a Higher National Certificate or Diploma before joining the programme.

### Conclusion

Learning at Work programmes developed through the Partnership Programme aim to equip students to progress within their specific fields of practice and to be able to apply their skills and knowledge in new areas. More generally, the programme aims to:

- provide learning relevant to the career development of people in work.
- provide learning which is at the leading edge of technology and professional practice and which is relevant to the career development of people who are in work.
- value and accredit the student's relevant prior learning.
- provide a quality assured framework that enables negotiated study programmes, encapsulated in personal Learning Contracts, that include university and work-based study to result in named university awards.
- ensure flexibility within the programme that meets the variable time constraints and changing strategic needs of the world of work.

The overall philosophy of the Partnership Programme is to encourage and reward career related lifelong learning by:

- accrediting career relevant and self-managed learning that is at graduate or postgraduate level.
- enhancing the scholarship of work-based learners, by requiring the development of a range of self-managed, conceptual and analytical skills applicable to practical problems within their professional fields.
- assisting in the personal and professional development of students so that they may improve the contribution they can make to the organisations in which they are employed.
- furthering the University's plans for expanding work-based learning and widening participation, through the provision of education that is relevant to the economy (local,

national and international) and maximise learning partnerships between the University and industry, commerce, the services and voluntary sectors.

- encouraging industry and commerce to become partners in developing their employees' technical and business competences.

Currently the programme is thriving, with 160 students graduating in 2012 (the highest number since the department began) but no one can predict the future. Cuts in the defence budget and economic recession mean that funding for lifelong learning might be vulnerable. However, in the light of the government report (Leitch (2006)) advocating more vocational education, and the large fees charged for full time students, the belief of the department is that there is a growing need for the provision of work-based degrees and, provided the high academic standards are maintained, the programme will continue to recruit successfully for the foreseeable future.

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*An Overview in Qualitative Study : Practices As Instructional Leaders among  
Secondary Schools Principals in The State of Pahang, Malaysia*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

The study tries to explore the pattern of principal's practices as instructional leaders in six types of schools in the state of Pahang Malaysia. The practices as instructional leaders among principals was based on four dimensions, i) define and establish school goals, ii) manage instructional program, iii) promote learning environment and iv) create friendly and cooperative school environment. Interview data collected from six principals and six teachers was analyzed using NVivo. The findings show that the practices of instructional leadership occur in the six types of schools in Pahang. However, the dimensions of managing the instructional program being practiced rarely in all type of schools. Findings of the study indicate a wide difference in the principal's practice as instructional leaders between Boarding Schools, Special Model Schools and Daily Schools as compared to Religious schools and Technical/Vocational Schools.

**Topic :** Educational Vision, Policy, Leadership, Management and Administration

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## 1.0 Introduction

Instructional leadership came to light 25 years ago starting with the study of an effective school by Edmonds (1979). Instructional leadership model has been developed since the 1980s by western scholars such as Hallinger and Murphy (1985, 1987), Bossert (1988), Murphy (1990), Weber (1996), Southworth (2002) and Hallinger (2000). The model of Hallinger and Murphy (1985) often used in the research on instructional leadership. Hallinger (2011) states that starting in 1980 until 2010, a total of 130 studies have been conducted using the model of Hallinger (1985).

Instructional leadership in Malaysia gets attention among the school principals as it very significant in creating an effective school (Sazali, Rusmini, Abang Hut & Zamri 2007). In the 21st century, the practices of instructional leadership are still relevant and useful in contributing to the school performance (Hallinger 2005; The Department of Prime Minister 2010). The effectiveness of instructional leadership practices were set out in the Education Development Master Plan (KPM 2007) and The Department of Prime Minister (2010). Alimuddin (2010) describes an instructional leader as an agent of a change and create conducive school environment which has significant impact on the student's achievement. According to him, the responsibility of the principal as an instructional leader is to ensure that teaching and learning and academic activities are planned and implemented well, conducted in a good and orderly manner and carry out academic management in order to help teachers to teach effectively (Educators 2010).

However, in reality the role of principal is less effective in guiding and sharing goals with the teachers and thus leads to the failure in the planned teaching to achieve the aims of the school (Academic Management Sector 2009). Hallinger and Heck (2001) in his study found that this problem caused by lack of clear goals which made it difficult for the school staff to share the same goals. According to Hallinger (2000), the element of establishing a clear school vision can lead the direction of principals in accomplishing a successful teaching and learning process.

Workloads restrict the efforts to accomplish the principal's role as an instructional leader, especially in monitoring and supervising the teaching process. Accordingly, the principal often places the responsibility of supervising and monitoring to the Senior Assistant and Head of Field (Hallinger, 2005). However, the principal's responsibility in the areas of monitoring and supervision is crucial to ensure an effective teaching and learning (Robinson, Lloyd, Rowe, 2009). Supervision is also an important aspect of evaluating the content and teaching methods to ensure it is in accordance with the needs of the curriculum (James & Balansandran 2009).

An Increase of the principal's task in managing the various fields limits the time allocated for planning, organizing, leading and controlling the implementation of the school curriculum. This gives rise to the failure to overcome the problem of teacher's absence and eventually limits teaching and learning process. Academic Management Sector Monitoring Report, (2009) showed several factors that lead to a deficit in a curriculum which mainly caused by the absence of teachers during teaching hours in order to fulfill the need to attend school organized events such as meetings (36.04 percent), the course (17.20 percent), seminars (4.81 percent), workshops (10.24 percent), sports / games (8.60 percent), co-curriculum activities (8.66 percent) and extra-curricular activities (7.49 percent). Some of the problem associated with the instructional supervision among secondary school principals has led researchers to undertake research on the instructional leadership practices.

## **2.0 Research Framework**

The framework of this research is based on the Instructional Leadership Model of Hallinger (2000) and Murphy (1990). Hallinger (2000) defined the instructional leadership of principal in three main dimensions which are defining the goals, managing the instructional program and promoting school climate. Dimensions were discussed based on ten elements. The first dimension, defining the goals was represented by two elements (i) develop school goals and (ii) clarify school goals. The second dimension, managing the instructional program was represented by three elements (i) supervise and evaluate teaching, (ii) coordinate the curriculum, and (iii) monitor the progress of student. The third dimension of promoting school climate was represented by the elements of (i) preserving teaching time, (ii) always visible, (iii) provide incentives for teachers, (iv) promote professional development and (v) provide incentives for student's learning.

Instructional leadership model by Murphy (1990) has four dimensions and sixteen elements, the first dimension of cultivating mission and goals has two elements, namely (i) develop school goals and (ii) deliver the school vision. The second dimension of educational management has five elements, (i) promote quality of teaching, (ii) monitor and evaluate learning, (iii) provide and protect instructional time, (iv) coordinate the curriculum activities and (v) monitor the progress of student. The third dimension, promotes academic learning climate has four elements, (i) establish standards and positive expectations, (ii) maintain a high visibility, (iii) provide incentives for teachers and students and (iv) promote professional development. The fourth dimension of creating a friendly and cooperative environment in schools has the elements of (i) creating a safe and orderly learning environment (ii) provide meaningful opportunities for student's involvement, (iii) foster cooperation and cohesiveness among the staff, (iv) obtain external resources to support the school goals and (v) build a good relationship between home and school.

This study will explore the practices of instructional leadership among principals based on four dimensions, i) define and establish school goals ii) manage the instructional program, iii) promote learning environment and iv) create a friendly and cooperative school environment.

## **3.0 Methodology**

The main purpose of this study is to explore the instructional leadership practices of principals in six schools in the state of Pahang. Thus, this study attempts to answer the question of how instructional leadership has been practiced among principals in these six schools.

The design of this research is qualitative, emphasizing the exploration method as recommended by Creswell (2008) by using three methods for collecting data of structured interviews, observations and document analysis. There are two sets of interviews were conducted, the first involved six principals in six schools and the second type involved a total of six teachers who gave their perceptions of leadership in their schools. Observations made directly to the subject of the study which is the practices of instructional leadership of principals. Document analysis is conducted by looking at the monitoring documents from the State Education Department and the Inspectorate. The sample was selected after a review of the need of the research to find the school with the highest mean.

## **4.0 Findings**

The study was carried out on six types of secondary schools in the State of Pahang as follows:

School A: Daily school (SMK) is a school located in a rural area, led by female principal which also an 'Excellent Principal'.

School B: Special Model School (SM Model Khas) is a school located in a rural area, led and controlled by male principal.

School C: Boarding school (SBP) is controlled by the management of boarding school. This school is a high performance school and led by 'Excellent Principal'.

School D: Technical / Vocational school (SMT / V) is controlled by the school Vocational Technical Division, led by male principal.

School E: Religious School (SMKA) is controlled by Islam Educational Sector, JPN Pahang and led by female principal.

School F: Religious School with Government Assistance (SABK) is controlled by the State Religious Department, originally it was a Public Religious School (SAR) and has been taken over by the Ministry of Education in 2002. The school is led by male principal.

Overall, instructional leadership practices occurred in all these schools, School A, B, C, D, E and F. However, instructional leadership practices implemented were not comprehensive in terms of the four dimensions proposed by Hallinger (2000) and Murphy (1990).

#### **4.1 Define and establish school goals**

Generally, the principals in all six schools, A, B, C, D, E and F adopted a consistent practices in terms of defining and establishing the school goals and also managed to involve the school community together in the success of achieving the school goals. Table 1 describes the practices of designing the school goals and found that the principals of A, B, C, D, E and F take into account academic achievement in formulating school goals. However, only the principals of B, D, E and F make sure goals are easily understood and applicable to all the staff in the school. Meanwhile, the principal of school C does not involve directly in the process of developing the school goals.

Table 1 also describes the findings for the practices of delivering the school goals to ensure that the goals are acceptable by all the staff in the school. The study found that the school principals of A, B, C, D, E and F ensure that the goals that have been built communicated verbally through speech and repeatedly reminded in the assembly or any gathering. All school principals were found to make sure goals were posted at the place which can be seen easily by school community. The principals of B, D, E and F often discuss school goals with their staff in the meetings with teachers. The study also found that the principals of B, D and E ensure school goals are always appreciated by the school community. Surprisingly, the study shows only the school principals of A, C, D and E make sure that academic goals were adopted in the curriculum program such as curriculum meetings.

Table 1 Analysis of interview: Theme of defining and establishing the school goals

Main Theme	Sub-Theme	SCHOOL PRINCIPALS
Designing And Clarifying School Goals	Take Into Account Academic Achievement Understandable Applicable	A, B, D, E, and F B, D, E and F B, D, E and F
Deliver School Goals	Discussion Internalized Adopt Into Curriculum Program Verbal Printed	B, D, E and F B, D and E A, C, D and E A, B, C D, E and F A, B, C D, E and F

#### 4.2 Manage the instructional program

Overall, the study discovered the school principals of A, B, C, D, E and F were lack of commitments in terms of managing the instructional program. Some of the principal practiced the dimension of managing the instructional program in a collaborative way by involving school administration committee to work together in supervising curriculum. The complete details of the practices of managing the instructional program can be found in the Table 2.

In terms of instructional supervision and evaluation, the study shows that the principals of A, B, C, D, E and F have been delegated the task of supervision to the Senior Assistants and head of field. Also, the principals gave approval to the Senior Assistants to praise the strength of teachers and provide guidance on the weaknesses of teachers. The study also found that the principals of D and E assigned Senior Assistants to do focus observation to fulfill the required number of supervision of teachers. The findings demonstrated that the school principals of A, B, C and D handed over the task of student's note book observation to the Senior Assistants because they are busy with the management matter. The analysis observed that the school principals of B, C, D, E and F did supervision in the form of unstructured supervision which is known as MBWA (Management By Wandering About).

According to the study, the school principals of A, B, C, D, E and F have been delegated the practice of coordinating the curriculum, which is organizing the curriculum program to the Senior Assistants and 'head of field'. Based on the findings, the school principals of A, B, C and D handed over the task of coordinating the curriculum program to the Senior Assistants. Meanwhile, the school principals of B leave the job of monitoring of teaching materials to the 'head of field'.

The school principals of A, B, C, D, E and F are involved directly in the process of monitoring student's progress to observe the student's progress. Principals are also available to meet with the students to find out the difficulties in the learning process and spend time to motivate students. However, only the school principals of A, B, C and F showed an interest in doing the debriefing or post mortem of academic in order to improve student's performance.

In an effort to promote a quality teaching, the school principals of A, B, C, D, E and F chaired a curriculum meeting to encourage a quality teaching process. However, the study found that only the principals of A, C, E and F showed an effort to increase teacher's professionalism

Table 2 Analysis of interview: The theme of managing the instructional program

Main theme	Sub-Theme	SCHOOL PRINCIPALS
Supervise and evaluate the instructional time	Delegation supervision (GPK)	A, B, C D, E and F
	Focus observation (GPK)	D and E
	Parallel objectives	B, C, D and F
	Observation of student's note book (GPK)	A, B, C and D
	Formal	B, D, E and F
	Unstructured supervision	B, C D, E and F
	Strength and weaknesses of teachers (GPK)	A, B, C D, E and F
Coordinate curriculum	Curriculum program (GPK)	A, B, C D, E and F
	Coordinate program (GPK)	A, B, C and D
	Teaching materials (GPK)	B
Monitor student's progress	Informing the students	A, B, C D, E and F
	Academic Debriefing, Post Mortem	A, B, C and F
Promote a quality teaching	Chaired the meeting	A, B, C D, E and F
	A quality teacher	A, C, E and F

### 4.3 Promote learning climate

In general, the school principals of A, B, C, D, E and F practiced effectively the dimension of promoting learning climate in the school. This explains that, the responsibilities of a principal are to know the learning climate and manages school to be an excellent school. Table 3 shows the practices of principals in promoting professional development, establishing standards and positive expectations, provide incentives for student's learning, protect teaching hours, provide incentives for teachers and always visible.

The findings explain the practice of protecting teaching hours and found that the school principals of A, B, C, D, and E ensure that teaching and learning time was used well and avoid any interference by internal or external school activities. However, the school principal of F is quite lenient in controlling and preserving teaching time due to the lack of firmness in the administration.

The findings also indicated that the principals of A, C, D, E and F always available in the school when they are needed. The study also showed that the school principals of A, D, E and F ensure their presence at the school is not only spent in the office but also used to interact with teachers to discuss school issues. However, in terms of the practice of providing incentives for teachers, only the principals of A, D, E and F reflected their appreciation to the teachers in the meeting or in any acknowledgement event.

The study also found that the school principals of A, C, E and F promote the professional development of teachers by allocating time in the meeting to share ideas, provide support for teachers to use the skills acquired from in-service training in the classroom, ensure all service activities attended by school staff are consistent with the academic goals of schools and provide professional development opportunities.

The study also showed that the principals of B, D, E and F provide incentives for student learning including giving recognition to the student and contacting parents to inform their children excel. The findings also indicated that the school principals of A, B, C, D, E and F encouraged teachers to form the standard and positive expectations by showing the accuracy of time management in all activities, inform the students about their expectations of the performance of school and guide teachers in implementing the academic policy.

Table 3 Analysis of interview: The theme of promoting the learning climate

Main theme	Sub-Theme	SCHOOL PRINCIPALS
Protecting teaching hours	Using time allocate for teaching	A, B, C D and E
	School Policies and Procedures	A, B,D, E and F
	Disturbance Control	A, B, C D and E
Always visible	School issues discussion	A,B, C D, E and F
	Interaction	A, B, D, E and F
Provide incentives for teachers	Reinforcement	A, D and F
	Appreciation – acknowledgement	D and E
	Appreciation – meeting	A, D, E and F
Promote professional development of teachers	Staff meeting to share ideas	C
	Support skills in the classroom	A
	Provide opportunities – professional development	C, E and F
Provide incentives for student learning	Students acknowledgement	C, D and E
	Contact parents	B, D and F
Form standard and positive expectations	Timeliness	A, B, C, D, E and F
	School expectations	D and E
	Academic policy	B, C, D, E and F

#### 4.4 Establish a friendly and cooperative school environment

In general, the school principals of A, B, C, D, E and F were able to form a friendly and cooperative school environment. Table 4 describes the practices of principals in creating a safe and orderly learning environment, providing meaningful opportunities for student participation, foster cooperation and cohesiveness among the staff, outsourced to support school goals and foster relationships between home and school.

The findings showed that the school principals of A, C, E and F showed a concern in the safety aspects by ensuring the damaged buildings and infrastructure were repaired, monitor Hem Unit, the safety committee, hostel wardens and security guards to make sure they carry out duties efficiently. The study also indicated that the principals of A, B, C, D, E and F encouraged students to set the niche, organize brilliant sharing for critical subjects and gave instructions to the relevant teachers in encouraging students to participate in co- academic and certain programs.

The findings also indicated that the principals of A, B, C, D, E and F foster cooperation and cohesiveness among the staff. However, the principal of D showed the determination of influencing Senior Assistants to gain the support of other teachers and have a family relationship through even a

small appreciation, taking care and advice the staff, celebrate the teachers and willing to accept comments and suggestions from the teachers.

The study found that the principals of A, B, C, D, E and F outsourced to support the school vision and foster relationships between home and school. The principals always seek help from external funds to support school goals, including the PIBG, district office, Yayasan Pahang, politicians, ministries, colleges community, associations of former students (ALUMNI) and university students. The principals also established a good relationship between home and school to ensure that the trustees have knowledge of information about child under their care through website that displays information of their children's activities to make the information transparent. They also built a good relationship with YDP, share staff's phone numbers with the school custodian, transparent and always meet the parents of the children who attend special remedial classes.

Table 4 Analysis of interview: The theme of developing a friendly and cooperative school environment.

Main theme	Sub-Theme	SCHOOL PRINCIPALS
Create a safe and orderly learning environment	School environment and appreciate culture	A, E and F
	Safety	C
	Teaching & Learning, and co-academic without intersuperviseruption	B, and D
Provide opportunities for meaningful student involvement	Co-academic activities	A, B, C D, E and F
	Academic excellence program	B, C, D, E and F
	Students skill program	A, B and C
Foster cooperation and cohesiveness among the staff	A friendly and warm atmosphere	A, E and F
	Collaborative discussion	B, C and D
	Cooperation	D
	Accepting teacher's idea	D
Outsourcing to support school vision	Outside speakers were invited	A, D and E
	Outside support	B, C, D, E and F
Build a relationship between home and school	A good relationship between parents and school	A, B, C, E and F
	Discussion of learning problem	C, D, E and F
	Involved in activities and programs	C, D, E and F

## 5.0 Discussion

The findings showed that all six secondary school principals in the State of Pahang adopted the four dimensions of instructional leadership, however, the dimension of managing the instructional program, rarely practiced by the principals of all types of schools. Overall, the findings also indicated that there was significant difference in the practices of instructional leadership among principals of boarding school (SBP), Special Model School (SM KHAS) and Daily School (SMKH) compared to the Religious School (SMKA), Religious School with Government Assistance(SABK) and Technical /Vocational School (SMT / V).

The principals in all types of schools in the State of Pahang ensured that the school vision and mission were delivered and appreciated in the meeting directly and indirectly. The Principal uses an

open mind approaches that require teachers to think the importance of vision or goals for school's improvement. This finding is consistent with the Clark's study (2009) who found, the principal who prioritizes academic goals although did not involve directly in the teaching process can improve student's achievement through collaboration of teacher's attitudes.

The study also describes the dimension of managing instructional programs in all six schools in the State of Pahang only focused on the direct monitoring in every examination and every month to see the student's progress directly and meet them in the class with their examination's results. The principals made post mortem or debriefing based on the examination's result to see the academic strengths and weaknesses of student's achievement. Instructional leader must always show a meaningful interaction with students and use examination data to make decisions related to the teaching and learning process. This scenario shows the secondary school principals in the State of Pahang looked in details the headcount in student's performance and continues to make improvements where necessary to achieve school goals. This coincides with the academic sector, the State Education Department (2010) which emphasizes on the academic profile of students which shows in details the achievement of every student in every subject. However, in managing instructional programs, the secondary school principals in the State of Pahang delegated the task of supervision and observation because they are busy with other task or work and lack of skills in certain topics. Nurahiman and Rafisah (2010) described the quality of supervision depends on the factors of knowledge, skills, interpersonal and technical skills. According to Clark (2009), the principals practiced and delegated some duty such as student note book's observation to the senior assistant, teachers, other staff and did unstructured supervision in order to assist schools in achieving the objectives and subsequently improved their school's performance.

Instructional leadership practices among the secondary school principals in the State of Pahang which promotes student learning dimension yielded some interesting findings. The study found that the principals of Religious School (SMKA), government-aided religious schools (SABK) and Technical /Vocational School (SMT / V) focused on encouraging staff development to increase opportunities for staff to gain knowledge in pedagogy and teaching skills. According to Islamic Education Sector Monitoring Report (2011), most of the teachers of SABK are still weak in pedagogy and teaching skills. Thus, following the acquisition of the Ministry of Education Malaysia, SABK management and teachers are encouraged to follow a compulsory course in Teacher Training Institutes to improve knowledge and teaching skills. The study also found that the principals of all types of schools in the State of Pahang encouraged the teachers to form standards and positive expectations. This is consistent with the Ministry of Education Malaysia's target in the examination program of School Examination Analysis System (SAPS) which emphasizes student headcount from Take of Value (TOV), down to the targeted Expected Result (ETR) to monitor individual student's achievement for each subject.

Instructional leadership practices among the principals in the State of Pahang in developing a friendly and cooperative school environment also yielded an interesting finding. The study concluded that the principal of SMT / V prioritizes cooperation and cohesiveness among the staff. According to Abdul Ghani and Tang (2006), a leader that emphasizes collaborative relationship with the staff is able to develop and achieve the vision of school. Deborah (2002) in her opinion suggests that the leader should be wise in organizing instructional strategies to gain teacher's cooperation to improve teaching and learning process. The study also found that the practices of principals of all types of secondary schools in the State of Pahang were further reflected in terms of acquiring external source to support the school and foster relationship between home and school. According to

Lambert (2002) the ability of the principals to share in building the vision, knowledge, responsibilities collectively and collaboratively can lead to the excellence in the organization under his leadership. According to Deborah (2002), instructional leaders must be creative to get the resources to support school's improvement. Zulkifli, Jamilah, and Ismi Aminah Arif (2011) in their study described an academic discussion of parents showed an improvement on the student's academic performance. Department of Education and Skills (2002) suggests that parents should directly involve in the education of their children in school to affect the student's progress on an ongoing basis and help their children succeed in the academic.

## 6.0 Conclusion

The study emphasizes qualitative exploration methods using three methods for collecting data of structured interviews, observation of main subject of the study which is the principal and document analysis. In conclusion, the study found that the principals of daily school (SMKH), special model school (SM KHAS), boarding school (SBP), Vocational / technical school (SMT/V), religious school (SMKA) and religious school with government assistance (SABK) practiced all the dimensions of instructional leadership although not comprehensively practiced. However, all the principals agreed that the instructional leadership is capable to generate school's performance.

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*A Literature Review on Twitter-Assisted Learning and Its Potential Application in  
ESL/EFL Writing*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

A trend of the modern age is that people like to express their views about specific interests and connect with others through the use of numerous Internet platforms that provide personal blogs, photo albums, and message boards. In particular, Twitter is a microblogging service that allows the quick exchange of information to different social groups. Some studies and numerous reports have suggested that Twitter is a convenient tool for learning and has educational value. The existing studies of the application of Twitter to educational purposes indicated the increase of learning engagement and social interaction among the peers and instructor. The application of Twitter is based on social learning theories. The platform has the potential to facilitate learners' collaborative learning and experiential learning. Furthermore, most of the studies suggested that Twitter could enhance learners' learning motivation through interactive activities. Although the existing studies provide useful insights regarding Twitter and its application for improving course engagement, there is not much literature on Twitter as a potential EFL/ESL teaching and learning.

This paper aims to review existing studies in related to the use of Twitter in education from the perspectives of asynchronous learning, social learning theories, social interaction framework, and language acquisition theory in order to build a rationale for the use of Twitter for ESL/EFL writing instruction. Pedagogical suggestions for ESL/EFL educators will be provided as conclusions.

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## Introduction

People in modern age like to express their views on specific interests and connect with others through the use of numerous Internet platforms that provide personal blogs, photo albums, and message boards. In particular, Twitter is a microblogging service that allows the quick exchange of information to different social groups. It is frequently used by individuals to communicate briefly and quickly with each other and with groups.

Twitter posts, known as tweets, are limited to 140 characters including spaces and punctuation, which concentrates the language accuracy and communicative precision (Grosseck & Holotescu, 2008). Members can track each other's personal updates and post 140-character maximum replies. "Twitter is the most popular microblogging application, with almost one million users, called Twitterers, who can send and receive messages via the web, SMS, instant message clients, and by third party applications" (Grosseck & Holotescu, 2008, p. 1). The setting of Twitter allows users to follow or to be followed in a virtual community which serves as a daily virtual conversation platform for people to talk about work, sports, politics, music, and so forth. Twitter provides a more anonymous medium of communication for those who may not like to express themselves in public. On the other hand, Twitter can also be used as a platform for high profile users, such as celebrities or politicians, to promote themselves or to update followers on their personal thoughts and life agenda.

Twitter is mainly used for asynchronous interaction among users and followers (Dunlap & Lowenthal, 2009; Grosseck & Holotescu, 2008). The characteristics of microblogging on Twitter focus on higher frequency of personal updates compared with regular blogs and also provide swift dissemination of information. Twitter also offers a platform for quick communication that could play a role as a catalyst for language learning by means of improving target language communicative ability (Borau, Ullrich, Feng, & Shen, 2009).

Unlike the synchronous written communicative environment of a chat room, Twitter is mainly used for asynchronous interaction among users and followers (Dunlap & Lowenthal, 2009; Grosseck & Holotescu, 2008). Twitter offers a platform for quick communication that could play a role as a catalyst for language learning by means of improving target language communicative ability (Borau, Ullrich, Feng, & Shen, 2009).

Adopting technology to enhance learning efficiency has been studied and proven to be useful when the course structure and content are well-organized and well-blended with the use of the technology in a cyber-environment (Lee & Rha, 2009). The use of asynchronous and synchronous mediums of communication as venues for learning has become more prevalent in today's society and also more important for educational purposes. Current educational

technology specifically enables communication that facilitates collaborative discussion, exchange of opinions, and critical thinking.

Twitter as an educational tool provides an enhanced social presence, which is an important element of Second Language Acquisition (SLA) theory. In Twitter-assisted learning, the method of engaging in social interaction, discussion, and collaborative learning is based on an asynchronous form of written communication (Borau et al., 2009; Dunlap & Lowenthal, 2009). Tweets allow instructors to track each learner's writing progress and ideas. Posting comments offers students a chance to practice using the language for situational communication while also giving teachers a chance to observe the actual performance of students' comprehension in their target language (Borau et al., 2009). When Twitter is being utilized for class discussion, it facilitates students' skills of summarization by consolidating their thoughts with concise and precise syntactic structure and vocabulary in their tweets (Bart, 2010).

## **Literature Review on the Significance of the Study**

### ***Social Interaction in Computer-Assisted Learning***

Cyber learning environment heavily relies on the social interaction. It is important to recognize the significance of social interaction and its positive effect on language learning in terms of cooperative learning in which weaker learners receive assistance from stronger learners in well-organized environments with mutual learning objectives (Tsai et al., 2008). Twitter-assisted learning satisfies users' intrinsic needs for social communication, and the interaction creates habitual information or emotion sharing through the behaviors of tweeting, retweeting, and following people (Chen, 2011). Therefore, the possible collateral benefit of adopting Twitter in language learning is that users will have sufficient exposure to their target language and will learn to deliver their thoughts in a concise and organized syntactic structure across tweets for their social groups (Borau et al., 2009). The more time spent on Twitter, the more one's sense of social connectivity will be satisfied through the process of tweeting (Chen, 2011). The environment of Twitter could stimulate users to utilize reading and writing in order to engage in social interaction and support communicative competence in English learning (Borau et al., 2009).

Many educators have asserted that information technology can be a tool to reinforce linguistic competence in global communication without geographic restriction and to enhance individual social engagement (Cummins, 2000). Further, there are certain benefits to social interaction in the target language (Lu & Yeh, 2008). For instance, learners can be stimulated by having interactive conversations with their peers (Borau et al., 2009). Vygotsky

(1985) noted that during social interaction, weaker learners have an opportunity to be inspired by their stronger peers, and this process facilitates learners' cognitive development. The most important benefit is that communication activities in the socialization process lead to language internalization. Technology in language learning is intended to enhance learners' interaction and engagement (Yang, 2011), and computer-assisted methods could facilitate language learning by giving purposeful interaction and constructive feedback (Borau et al., 2009; Dunlap & Lowenthal, 2009; Murphy, 2007; Yang, 2011).

Web-based writing, including blog writing or discussion board commenting, offers a stimulating and enjoyable method of communicative practice. The collaborative work and interactive message-based conversations can motivate students in their language learning process (Al-Jarf, 2004). From an educational technology perspective in teaching and learning, some recent studies indicate that, as more teaching practices utilize educational functions of technology in the EFL classroom, students who have learned through these communicative devices have significantly greater frequency and opportunity to practice their writing skills (Al-Jarf, 2004; Chuo, 2007; Heinrich, Milne, & Moore, 2009; Stevens, 2008). Using web-based writing stimulates students' critical thinking through social interaction, and this creates more communication and more opportunities for learners to be exposed to real situational texts (Chuo, 2007). Al-Jarf compared traditional in-class writing methods with a method that combined traditional practices and web-based writing exercises and found that the computer-assisted learning approach significantly enhanced students' syntactic structures. Furthermore, the students in the experimental group with computer-assisted learning method also exhibited more fluency in their written sentences for communicative purposes and were more expressive in their ideas for essays.

In social groups' discussions, an asynchronous discussion platform has the capacity to facilitate learners' efficacy in language learning while also promoting social interaction that results in higher language achievement and problem solving capabilities (Borau et al., 2009; Lu & Yeh, 2008). It could be beneficial to implement the web-based asynchronous approach to language learning methodology as an assistant tool for creating extensive interaction, which is normally restricted to traditional class structures. Foreign language learners need effective social interaction in order to produce the actions they see being modeled. Authentic language usage that is pertinent to the contextual situation is important so language learners can recognize modeled stimuli (Lave & Wenger, 1990). Social interaction can lead to the recognition of certain social stimuli and can help develop the individual's ability to synthesize the new information (Chiou & Yang, 2006). In an asynchronous learning environment, language learners are often required to actively give meaningful and topic-related feedback in the online conversation. Therefore, interaction is based on

student-to-student and student-to-teacher communication.

The process of modeling is perceived as imitating others through positive reinforcement, which results in reproduction of the imitation in responding to external stimuli and elicitation. Bandura (1977) wrote that the complexity of responses often reflects the progress of cognitive development in social learning. Social interaction can lead to the recognition of certain social stimuli and can help develop the individual's ability to synthesize the new information (Chiou & Yang, 2006).

The application of Twitter in language learning is a project-based approach in which learners are working on common objectives collaboratively in an authentic language setting. Eskrootchi and Oskrochi (2010) noted that incorporating computers in the classroom significantly improved engagement, social interaction, and contact with real-life resources and allowed peers to learn from one another and aid weaker learners through constructive, scaffold, and collaborative learning. In their study, a project-based e-learning platform enhanced communication through peer collaboration and helped break the communication barrier for those students who tend to be more reserved. However, careful instructional design is important to maximize learning performance. Eskrootchi and Oskrochi concluded that it is the instruction and curriculum implementation that boost efficacy, not the technology itself. The quality of interaction is often influenced by the instructional design. Clear guidelines are needed so that all students must do is follow the rubric and work on their assignment collaboratively. Well-organized instruction was the core element for maximizing the effect of interaction that determines learners' satisfaction and receptive learning achievement. More specifically, interpersonal interaction facilitated communication and critical thinking in the structure of a web-based learning environment (Lee & Rha, 2009). Effective interaction requires clear guidance if it is to inspire critical thinking and communicative language skills. An effective teacher must create collaboration among learners so that students can learn to build their constructive thinking through replying to the questions on the course blogs and engaging in interaction with their peers.

In terms of Twitter's potential advantages for enhancing social interaction, learning experiences on Twitter can be described as experiential learning. Hedin (2010) and Kemp (2010) stated that experiential learning engages learners in activities in which they have the ownership of learning autonomy and can experience and develop social presence and problem solving abilities. Incorporating Twitter into a class creates a new way of communication that stimulates the learner's cognitive process in perceiving and handling new tasks or information. Twitter contains a constructive and positive learning community that guides students' learning objectives by encouraging them to tweet intellectually or

emotionally. Student engagement is facilitated by the instructor, and performance is the result of a constructive and experiential process throughout the Twittering.

### ***Studies on the Educational Uses and Potential of Twitter***

First-time Twitter users may consider the function of Twitter to be for trivial things in life, such as updating personal daily routine. However, Twitter has a unique function compared with instant messaging applications: its capability to broadcast to mass receivers instead of sending messages to an individual on instant messaging applications (Galagen, 2009). The purpose of applying Twitter is to increase opportunities for interaction (Dunlap & Lowenthal, 2009). Dunlap and Lowenthal found that Twitter is a bridge that increases students' learning engagement because its characteristics of promptness and conciseness attract users around the world and suggested that it could enhance collaborative learning and act as a quick information exchange platform in a virtual classroom.

When Twitter is used in an academic setting, users are told to participate in the activities, such as answering questions, sharing thoughts, and commenting others' posts. It can also be utilized in project collaboration and to promote literacy skills (Grosseck & Holotescu, 2008). Interpersonal communication can be created by incorporating Twitter as a bridge to connect students and faculty that allows for quick responses regarding students' projects, assignments, and ideas (Bart, 2010). It is not only helpful for improving learners' social presence by participating in course tasks but also a potential tool for language teaching (Dunlap & Lowenthal, 2009).

Yang (2011) has discussed the problems of English learning in Taiwan. In some big classes with 50 to 60 students and limited meeting times, it is difficult for students to communicate with the teacher or with one another. Twitter provides a platform for those who are too shy to voice themselves (Bart, 2010) and to establish relationships by sharing personal updates, news, thoughts, and hobbies (Brown, Hendrickson, & Littau, 2011). In their study of Twitter for language learning, Borau et al. (2009) showed that students can practice their target language (i.e., English) on Twitter and that tweeting actually let students produce authentic communication. Despite the limited time of the study, huge differences in the students' English level, and the large size of the class, Borau et al. were able to enhance their participants' communicative competence mainly in three areas: grammatical, sociolinguistic, and discourse competence. Moreover, Twitter can raise users' cultural awareness by allowing interaction with native speakers of the target language. In addition to helping students develop communicative competence, Twitter can be used as a blended learning community in which learners can meet their classmates both in person and online. Twitter-assisted learning reinforces learners' sense of the learning community so that learners will comply with group

learning objectives and manners.

Tweeting also allows students to express their interests openly and to work on the same project collaboratively (Dunlap & Lowenthal, 2009) and allows teachers to check everyone's comments and responses. Students can also view their classmates' tweets and provide feedback. Galagen (2009) mentioned that users can actually obtain advice by tweeting their questions to followers who provide their thoughts or experiences and noted that Twitter is a strong social connection tool that links students and teachers after class hours.

From an educational technology perspective, Young (2010) noted that there is another advantage in adopting Twitter for educational purposes, which is that introverted students may feel more comfortable producing and contributing their efforts without the fear of ridicule. In addition, Twitter has features that facilitate the teacher's interaction with students, and the teacher can monitor students' feedback as well as provide corrections or suggestions. Wright (2010) demonstrates an example of the benefits of utilizing Twitter for enhancing social presence in educational purposes. Wright asked education majors to participate in a discussion of pedagogy, curriculum planning, and teaching-related issues on Twitter. As they used Twitter, participants made progress on their reflective thinking, and the Twitter discussion activity also consolidated the students as a learning community. Furthermore, the 140-character limitation required them to make their points more precisely.

Learners' course engagement in using Twitter is one of the main research questions regarding the value of applying Twitter to the academic setting (Chen, 2011; Junco, et al., 2011). Chen (2011) found that Twitter facilitated course discussion in and out of class and allowed introverts to express their opinions with less stress. Moreover, it helped students to connect with their classmates or instructor and provided personal support. Junco et al. (2011) noted that Twitter fulfills users' needs and desire to make connections with others in that the longer users communicate through tweets, the stronger their sense of belonging will become.

The significance of Twitter in terms of educational value and its potential usage for education are discussed in the literature with findings that students are inspired to actively participate in Twitter discussions because their opinion is being noticed and critiqued (Dunlap & Lowenthal, 2009; Grosbeck & Holotescu, 2008; Johnson, 2011; Stevens, 2008; Wright, 2010). Twitter provides learners an insight into multifunctional and multicultural perspectives as they exchange their opinions or interact with each other on Twitter.

## Summary

Twitter-assisted learning has the potential to motivate the language learners and increase the interaction in and out of class. Although many people have criticized that 140 characters limitation could hinder the flow of idea conveyance, it is undeniable that Twitter indeed attracts users' desire to follow other Twitterers. The irresistible charisma of Twitter could serve as a medium for the learners to discuss course content, assignment or project. Despite the fact that Twitter is new to most Asians, the students could use the platform to practice their English writing and read more English texts once the students discover the wide-spread social communities on the sites and its tight connectivity. Furthermore, there are a lot of cases that Twitterers can always split up their writing into several tweets. Studies have showed that the strongest advantage of applying Twitter to EFL writing or reading in class is the increase of social interaction. From the perspectives of language learning, interaction is the key to acquire a language. Nevertheless, more investigation on the application of Twitter in language learning is needed in terms of the data results from quantitative or qualitative research.

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*“Inherently Unequal”: The Long and Troubling History of Segregated Schools in  
“Moderate” Florida*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

This paper examines Florida’s long and ugly history of school integration and how this history fits with Florida’s image as a moderate southern state. This paper attempts to place Florida within the context of other southern states during the civil rights era.

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In 1845 as Florida joined the Union, the state legislature promulgated a law which stated that any “assemblies . . . by free negroes and mulattoes, slave or slaves, shall be punished . . . with a fine not exceeding twenty dollars, or stripes, not exceeding thirty-nine.”<sup>1</sup> This measure, along with extensive and punitive slave codes, virtually eliminated opportunities to establish African-American schools in the newest slaveholding state. Florida, like most Southern states, wanted to eliminate opportunities for slaves and free blacks to congregate and to pursue education for their children. Although based on the deep and pervasive racial codes of the antebellum South, the efforts by white Floridians to deprive African Americans of equal opportunity education would last up to and even through the modern civil rights movement of the 1950s and 1960s. This study will explore that history of educational inequality between the races and how the Sunshine State’s reputation for moderation in Southern race relations and school desegregation does not, in fact, match its record. In this endeavor, this study also focuses on the centrality of grassroots Floridians in the Southern struggle to combat educational segregation in the mid-20<sup>th</sup> century, as augmented by the pioneering legal work of Thurgood Marshall and the NAACP.

During the Civil War, the Union military and the Freedmen’s Aid Society created the first formal schools for blacks in Florida. In 1864, Dr. Esther Hawks, a Northern physician and philanthropist, was authorized by the latter organization to create a school in Jacksonville, at that time under Northern occupation. The school opened shortly thereafter and by early 1865 had 150 black students and four teachers. Within months of Hawks’s opening of the school, the Jacksonville *Florida Union* newspaper stated that in “the progress of their studies” the young pupils “compare favorably with the children in other [white] institutions of learning.”<sup>2</sup>

The historical record reflects that freedpersons in Florida, along with their counterparts throughout the newly emancipated South, desired education for their children. Their wishes were combined with the building and financing of black schools and philanthropic efforts of paternalistic Northerners like Hawks and societies such as the African Methodist Episcopal

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<sup>1</sup> Title Fourth: Of Offenses Committed by Slaves, Free Negroes, and Mulattoes, and of Certain Civil Remedies Against Free Negroes and Mulattoes, Ch. 1, Sect. 2, in Leslie A. Thompson, *A Manual or Digest of the Statute Law of the State of Florida, of a General and Public Character, in Force at the End of the Second Session of the General Assembly of the State, on the Sixth Day of January, 1847. Digested and Arranged under and in Pursuance of an Act of the General Assembly, Approved December 10, 1845* (Boston: Charles C. Little and James Brown, 1847), 539, see 531-46 for the extensive and punitive slave codes.

<sup>2</sup> Charles L. Crow, “History of the Early Public Schools in Florida,” Preservation Photocopy, np., nd., Smathers Libraries, University of Florida, Gainesville, Florida, 3-14; Thomas Everette Cochran, *History of Public-School Education in Florida* (Lancaster: Press of The New Era Printing, Co., 1921), 19-28; “The Colored School,” Jacksonville *Florida Union*, March 25, 1865; Gerald Schwartz, “An Integrated Free School in Civil War Florida,” *Florida Historical Quarterly* 61 (October 1982), 155-61; Joe M. Richardson, *African Americans in Reconstruction of Florida, 1865-1877* (Tuscaloosa: University of Alabama Press, 2008 [1965], 98; Joe M. Richardson, “The Freedmen’s Bureau and Negro Education in Florida,” *Journal of Negro Education* 31 (Autumn 1962): 460-61.

Church, American Missionary Association, AME Church, African Civilization Society, and the American Freedmen's Union Commission, to create thirty actual or prototype schools whenever and wherever possible.<sup>3</sup> With the help of these organizations, despite their sometimes onerous racial stereotypes, African-Americans created their own "book larnin'" schools as an educational foundation for freedpersons took root. The freedpersons soon pressured local and state leaders to establish a public school system in Reconstruction Florida. To ignore their demands would have placed the state in jeopardy of increased federal and military occupation and interference in the state's internal affairs. Despite its long history of racial injustice, post-war leaders for the first time bowed to the agency of the black community, albeit the military occupation of the state after the war helped set the stage for that historic event.

In 1866, Florida passed legislation authorizing the first state-sanctioned education for African Americans. In short order, Edward B. Duncan rose as the initial Superintendent of Common Schools for Freedmen. That school year witnessed an immediate increase to sixty-five in the number of African American day and night schools (almost all in urban areas), and there is evidence that black children outnumbered white children in many schools throughout the state. The number of freedmen teachers increased to thirty-two with a corresponding student enrollment of 2,726. The "teachers have been mostly colored, of good moral character, delighting in their work, maintaining good discipline, men of energy, and many well qualified" Duncan wrote in his first year-end report.<sup>4</sup> The first State Superintendent of Education, C. Thurston Chase, was recorded as stating that, "With the great mass of them [blacks], the avidity to learn was most intense with these first opportunities."<sup>5</sup> By all measures, blacks desired an education and pursued all chances of such with vigor and commitment, a pattern that continued unabated for generations of African-Americans in the Sunshine State.

After passage of the 1868 State Constitution, Florida again broke with its Old South past by offering free public education to all residents. Copying the "Systems of the older States," legislators voiced their version of a "system of Common Schools" and a "Common School Fund" in the new constitution. This provision was codified into law in January 1869, when the Florida legislature outlined sources of public funding in its new "School Law." It called for "separate schools for the different classes in such manner as will secure the largest attendance of pupils, promote harmony and advancement of the school, when required by the patrons." Thus

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<sup>3</sup> See J. Irving E. Scott, *The Education of Black People in Florida* (Philadelphia: Dorrance, 1974), 7.

<sup>4</sup> Ibid; *Florida Acts and Resolutions* (1866), 37-39; Richardson, "The Freedmen's Bureau and Negro Education in Florida," 460-62; Frederick B. Rosen, "The Development of Negro Education in Florida During Reconstruction, 1865-1877" (Ed.D. diss.: University of Florida, 1974), 129; quoted in William M. Sheats, *Administration of Superintendent Chase, "Bi-Ennial Report of the Superintendent of Public Instruction of the State of Florida for the Two Years Ending June 30, 1894* (Tallahassee: John G. Collins State Printer, 1895), 11.

<sup>5</sup> Quoted in William N. Sheats, "Administration of Superintendent Chase," in *Bi-Ennial Report of the Superintendent of Public Instruction of the State of Florida for the Two Years Ending June 30, 1894* (Tallahassee: John G. Collins State Printer, 1895), 12.

the new school code superseded the freedpersons' schools and sanctioned a caste-based public school system in the State of Florida.<sup>6</sup>

As post-war Florida entered the 1870s, Governor Ossian B. Hart (1873-1874) appointed African American Jonathan C. Gibbs, a graduate of Dartmouth College and the former Florida Secretary of State, as State Superintendent of Public Instruction. This was a bold step for an ex-Confederate state like Florida, but yet a savvy one by the governor as he sought to solidify Republican support and to project a progressive and compliant state in an effort to slip Florida out from under Washington's yoke of Reconstruction. Even as Gibbs feared the reactionary violence of the Ku Klux Klan in Florida, he rendered "all the assistance in my power" to create opportunities for "the education of the whole people of the South, without reference to race, color or previous condition." The black community (almost one-half of the state's population) responded by committing large numbers of youth to the emerging educational system. Under Gibbs, black students came to account for one-third of all the students in Florida, albeit they attended segregated and inferior facilities.<sup>7</sup>

Despite segregated schools, most whites in Florida still opposed any measures designed to provide quality education for blacks. When the reactionary Democrats (Bourbons) regained control of Florida in the mid-1870s, whites rejoiced in the belief that the racial codes of the Old South would be reinstated, including the historical denial of educational opportunities to blacks. African Americans were initially disheartened by the election of the reactionary George Franklin Drew to be Florida's, and the Bourbon's, new "home rule" governor. Paradoxically, the governor (1877-1881) argued that, "Only through the schools could the colored race become fit to exercise the privileges of voting intelligently, to perform all the sacred rights of freedmen, to enjoy their liberty, to become wise and good citizens." He added that a meager education for blacks was cheaper than prisons and poor houses for them. In the end, however, Drew was more interested in mercantile concerns than he was in racial policy. He thus championed academic education for whites as a means of expanding the economy and vocational education for blacks as a means of contributing labor to his new economic order.<sup>8</sup>

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<sup>6</sup> Constitution of the State of Florida (1868), Article VIII, Sect. 2; quoted in Sheats, "Administration of Superintendent Chase," 11; Cochran, *History of Public-School Education in Florida*, 34-36; Robert Lenton Mitchell, "Legislative Provisions and Their Effects on Negro Public Education in Florida, 1869-1947," (Ph.D. diss.: Florida State University, 1970), 14-29.

<sup>7</sup> Hon. J. C. Gibbs, *Report of the Superintendent of Public Instruction of the State of Florida, For the Year Ending September 30, 1873* (Tallahassee: Hamilton Jay, State Printer, 1874), 49; Jonathan C. Gibbs, "Education in the South," in Scott *The Education of Black People in Florida*, 141; see Richardson, "The Freedmen's Bureau," 463; Maxine D. Jones and Kevin M. McCarthy, *African Americans in Florida* (Sarasota: Pineapple Press, 1993), 44-45; Joe M. Richardson, "Jonathan C. Gibbs: Florida's Only Negro Cabinet Member," *Florida Historical Quarterly* 41 (April 1964): 363-68.

<sup>8</sup> Quoted in Arthur O. White, "State Leadership and the Public Education in Florida: The Evolution of a System," in Ronald K. Goodenow and Arthur O. White, eds., *Education and the Rise of the New South* (Boston: G.K. Hall, 1981), 238.

While serving during the Drew Administration, the superintendent of schools, William P. Haisley, made a much-publicized tour of Florida's schoolhouses. He thereafter made several recommendations to update the state's system of education, including the establishment of a separate system for blacks. The evolving racial divide continued with the exclusion of blacks from any school administrative positions in the state and the appointment of Confederate veteran "Col." Albert J. Russell as Sate Superintendent of Public Instruction in 1884. Thus, by the mid-1880s, the Sunshine State had eschewed any semblance of moderation on the education issue and embraced its antebellum concept of race oppression throughout the echelons of state government and its now white-controlled public education system. Where once the school house door offered hope and vision for Florida's African Americans, it now insinuated exclusion and inequality.<sup>9</sup>

In May 1885, lawmakers met in Tallahassee to write a new state constitution. The document embodied the changing attitudes of white Bourbons towards the Reconstruction-era's notions of African American equality and education rights. Article 12, Section 12 stated, "White children and colored children shall not be taught in the same school. . . ." To protect themselves from Northern criticism and legal challenges from African Americans, lawmakers in Florida also mandated—although the mandate proved hollow—that "impartial provisions" be provided for both races.<sup>10</sup>

In retrospect, the 1885 Constitution and its local iterations set the enduring pattern of a "dual" school system in Florida and degrading black educational affairs for most of the decades between the 1880s and the landing of an American on the Moon in July of 1969. Yet white elites in Florida were not satisfied with this sole measure of oppression. In 1889 state lawmakers wrote a new school law, which further strengthened by statute segregation for all of Florida's public and private schools. In 1895, Tallahassee lawmakers once again underwrote established procedure by declaring any such mixing in an educational setting as "a penal offense." That same year, Superintendent William N. Sheats acknowledged in his bi-ennial report the statistical and qualitative imbalance between black and white schools and dismissed the situation by stating that the "recent denizens of the cotton patch" simply exhibited "a minimal of interest in all that pertains to progress or intellectual advancement."<sup>11</sup> Thus, the notion of separate-but-unequal

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<sup>9</sup> William P. Haisley, *Biennial Report of the Superintendent of Public Instruction for the School Years 1876-1877, and 1877-1878* (Tallahassee: State of Florida, Department of Education, 1879), 24-27; W.S. Cawthon, *A Semi-Centennial View of Public Education in Florida and Other Addresses* (Tallahassee: State Superintendent of Public Instruction for Florida, 1936), 5; see White, "State Leadership and Public Education in Florida," 238.

<sup>10</sup> *Journal of the Proceedings of the Constitutional Convention of the State of Florida, Convened at Tallahassee* (1885), 86, 575, 882 for quotation.

<sup>11</sup> W.N. Sheats, *Digest of the School Laws of the State of Florida with the Regulations of the State Board of Education and the Instructions and Forms of the Department of Education* (Tallahassee: T.J. Appleyard, 1915), 87; William N. Sheats, *Bi-Ennial Report of the Superintendent of Public Instruction of the State of Florida for the Two Years Ending June 30, 1894* (Tallahassee: John G. Collins, State Printer, 1895), 12, 59; Cochran, *History of Public School Education in Florida*, 84-88.

was part of the state's racial behavior long before the *Plessy v. Ferguson* decision provided the legal basis for this in 1896. Even though the law mandated separate but equal, as in most former Confederate states, local officials in Florida ignored the equal provision of the law.

Many scholars trace the explosion of school injustice to the nadir of race relations following the *Plessy* decision of 1896. Yet, as noted, Tallahassee had set in motion "separate and unequal" treatment of blacks well before the ruling in the Constitution of 1885. That same document provided for a poll tax, and Florida became the first state of Dixie to adopt this measure as well as a convict-lease system. With little opposition, Tallahassee had nullified the spirit and practices of Reconstruction, and in ensuing statutes in 1905, 1913, and 1939, strengthened these practices or created similar race-based measures. When whites desired even further oppression, they often resorted to violence and mayhem in reactionary Florida. Michael Newton in *The Invisible Empire: The Ku Klux Klan in Florida* has characterized the Sunshine State as "one of the Klan's strongest and most violent realms . . . ."<sup>12</sup> This type of racial brutality would effectively freeze in place the state's color line for generations, including the polarization of the races in separate and inferior schools.

In the midst of these racial disparities, virtually every school district in Florida practiced systematic discrimination, not only in school assignment but also in the allotment of educational funds, term of academic year, student per capita funding, and, most glaringly, in pay for teachers. By the eve of World War I, Florida allocated \$12.50 per capita for white schools versus \$2.87 per capita for black school construction and maintenance, and \$8.35 per capita versus \$4.92 per capita between the races for educational programs. Even though blacks comprised roughly 41 per cent of Florida's population in 1910, the state invested \$2,067,356 in white schools and \$184,255 in black schools, or roughly 8.2 per cent of what the state spent on the total allocation for school property in 1910. Moreover, not one accredited high school for blacks existed in the state's major urban areas of Jacksonville, Tampa, and Pensacola.<sup>13</sup>

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<sup>12</sup> Florida Constitution (1885), Article 12, Section 12; Paul Ortiz, *Emancipation Betrayed: The Hidden History of Black Organizing and White Violence in Florida from Reconstruction to the Bloody Election of 1920* (Berkeley: University of California Press, 2005), 53-54, 56, 70, 171-78, 212; Jerrell H. Shofner, "Custom, Law, and History: The Enduring Influence of Florida's 'Black Codes'," *Florida Historical Quarterly* 55 (Winter 1977): 277-98; James Button, "Blacks," in *Florida's Politics and Government*, Manning J. Dauer ed. (Gainesville: University Presses of Florida, 1984), 286-89; Michael Newton, *The Invisible Empire: The Ku Klux Klan in Florida* (Gainesville: University Press of Florida, 2001), xv.

<sup>13</sup> See Thomas A. Bailey, *Narrative Reports of County Superintendents, 1892-94 to 1898-1900*, "Research Report-21, Division of Research (Tallahassee, 1962), 35-181; Thomas A. Bailey, *Narrative Reports of County Superintendents, 1900-1902 to 1904-1906*, Research Report-27, Division of Research (Tallahassee, 1963), 3-189; Thomas A. Bailey, *Narrative Reports of County Superintendents, 1906-1908 to 1910-1912*, Research Report-37, Division of Research (Tallahassee, 1965), 3-204; William M. Holloway, *Bi-Ennial Report of the Superintendent of Public Instruction of the State of Florida, For the Two Years Ending June 30, 1912* (Tallahassee: T.J. Appleyard State Printer, 1912), 448, 454; W. S. Cawthon, *Biennial Report of the Superintendent of Public Instruction* (Tallahassee: Florida Department of Public Instruction,

Into the 1920s, the average annual pay for black teachers was much lower than that for white teachers. For example, in Gainesville, Florida, the annual salary was \$562 for blacks and \$970 for whites. Across the state, white female teachers averaged \$115.20 per month and white male teachers averaged \$169.20 per month, while black female teachers earned just over \$60 per month and black male teachers earned roughly \$80 per month, with some Florida counties paying blacks a paltry \$30 monthly. In the practice of pay disparity, Florida did not prove exceptional but rather conformist when compared to the practice in other former Confederate states. Black teachers in Mississippi in 1890 earned \$23 per month while white teachers earned about \$33 per month, and in Alabama in 1900, blacks tended to earn \$17.66 a month and whites about \$25 per month. From 1911-13, the average yearly salary in Virginia was \$322.69 for a white teacher, and \$172.63 for a black teacher. Similarly, in Georgia during the same years, a white teacher earned \$318.63 a year, while a black teacher earned \$119.35 per year. White teachers in South Carolina earned \$333.28 a year during the same time, and black teachers earned \$110.54 per year.<sup>14</sup>

Additionally, Florida provided black schools (generally one-room school houses) with dramatically less funding than that given to the state's white schools. For instance, in 1897-98 white schools statewide were budgeted \$565,465. That same year, black schools were budgeted only \$171,486. The amount of money spent per student also differed significantly in other states of the Deep South as well in "moderate" Florida. In Beaufort County, South Carolina in 1910, the average expense for each white student was \$40.68, while only \$5.95 was spent for each black student. The same was also true in Alabama. In 1910, Macon County, Alabama spent approximately \$39.99 per white student. Each black student, conversely, received only \$3.89. In North Carolina in 1914-15, \$7.40 was spent for each white student, while \$2.30 was spent on each black child. In Amelia County, Virginia in 1915, \$11.63 was spent for each white child, and \$0.94 was spent for each black child (in terms of salaries for teachers). By the time of the crash leading to the Great Depression, little had changed in Florida; Tallahassee budgeted \$703,454 for the state's 37 per cent black population and \$11,364,476 for the state's white population. Thus, Florida endeavored to keep pace with its Jim Crow counterparts in miserly support for black education. The Pittsburgh Courier decried the situation to its widespread

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1926), 218-19; "Whites Must Not Teach Negroes: Not One Public High School in All Florida for Colored Boys and Girls," *Baltimore Afro-American*, January 24, 1914; James D. Anderson, *The Education of Blacks in the South, 1860-1935* (Chapel Hill: University of North Carolina Press, 1988), Table 6.3, 194.

<sup>14</sup> W. S. Cawthon, *Biennial Report of the Superintendent of Public Instruction* (Tallahassee: Florida Department of Public Instruction, 1930), 176; Charlton W. Tebeau, *A History of Florida* (Coral Gables, FL: University of Miami Press, 1971), 305; Maxine D. Jones, "The African-American Experience in Twentieth-Century Florida," in Michael Gannon, ed., *The New History of Florida* (Gainesville: University Press of Florida, 1996), 384; Scott, *The Education of Black People in Florida*, 64; Adam Fairclough, *A Class of Their Own: Black Teachers in the Segregated South* (Cambridge: Belknap Press, 2007), 126; Louis R. Harlan, *Separate and Unequal* (New York: Atheneum, 1968), 257.

audience in the following headline: “Negro Education in Florida Needs Help: Amazing Situation Revealed.”<sup>15</sup>

For its part, the NAACP, America’s oldest surviving civil rights organization, pursued an aggressive strategy to expel Jim Crow from American society, initially by focusing on these types of education disparities in the courts. Black educators and local branches of the NAACP in Florida consistently pushed the NAACP legal staff to move on school equalization suits at many levels. In 1937, representatives of Florida’s African American teachers contacted the NAACP’s executive director, Walter White, requesting that he file a suit through the NAACP’s Legal Defense and Education Fund on behalf of Florida’s segregated and inferior black educational system. White, though, was leery of moving too fast and wanted to ensure sustainable data for the case prior to litigating it. The NAACP’s legal staff also feared that state officials would argue that black teachers had a lower cost of living and therefore needed less pay. The NAACP worried, as well, that its lawyers would not be able to find plaintiffs willing to file suit. Indeed, across the South, as Adam Fairclough has determined in his massive study of the issue, the NAACP witnessed in state after state white elites “tenaciously [pursuing] a battery of tactics, some nakedly aggressive, others cunningly subtle” to thwart legal challenges to their white supremacist school systems. Attorney Simuel Decatur McGill of Jacksonville directed most of the NAACP cases in Florida. He was nearly sixty years old and had been practicing law for over thirty years and had earned a national reputation for successfully fighting “legal lynching” in the Sunshine State when the national office of the NAACP finally sent a teacher equalization suit to him. Florida would, in turn, prove no exception to Fairclough’s assessment of Dixie as a whole.<sup>16</sup> In retrospect, there should have been little difficulty in proving discrimination in Florida. In the midst of the Great Depression, over half of Florida’s 67 counties had no public high school for African Americans, and only 16 per cent of all black children ages 14-17 attended any form of advance school as compared to 67 per cent of white children of the same cohort. As James D. Anderson has found in his useful study of the subject, this practice effectively excluded blacks “from the revolution in public secondary education that characterized the nation and the region during the period 1880 to 1935.” There were other obvious schoolhouse discrepancies for the

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<sup>15</sup> Cochran, *History of the Public-School Education in Florida*, 199; William H. Chafe, et al., *Remembering Jim Crow: African Americans Tell About Life in the Segregated South* (New York: The New Press, 2001), 153; Harlan, *Separate and Unequal*, 131-32, 167; “Says Negro Education in Florida Needs Help: Amazing Situation Revealed,” *Pittsburgh Courier*, December 28, 1929.

<sup>16</sup> For the many actions requested by black educators and local branches of the NAACP in Florida, see August Meier, ed., *Papers of the NAACP: Part 3, The Campaign for Educational Equality: Legal Department and Central Office Records, 1913-1950, Series B: Legal Department and Central Office Records, 1940-1950* (Frederick, MD: University publications of America, 1986, microfilm version, no pagination), reel 1; McNeil, *Groundwork*, 26; see Scott, *The Education of Black People in Florida*, 64-80; Jones and McCarthy, *African Americans in Florida*, 101-102; Fairclough, *A Class of Their Own*, 344; “S.D. McGill, ‘Little Scottsboro Case’ Attorney, Has Thwarted Legal Lynchings In Florida For 25 Years: Brilliant Florida Lawyer Amazingly Successful in Fighting Legal Lynchings, State Will Bow Once Again to His Legal Genus this Month,” *Pittsburgh Courier*, July 13, 1940.

Sunshine State's 430, 000 plus blacks, including outdated textbooks, no school buses, leaky school roofs, poorly ventilated and heated buildings, lack of indoor restrooms, and no formal coordination for the 866 black schools in the state. Moreover, the Great Depression of the 1930s and its economic constrictions at the local level affected African American schools disproportionately. Overcrowding became such a problem during the inter-war years in African American schools that most of them were forced to operate double sessions. What had been a substandard condition for black school in Florida had become a dire condition by the eve of World War II. These types of educational inequities continued through the war and into the late 1940s.<sup>17</sup>

By the time of war, the historical disparity between the races in Florida's educational practices had changed little. For example, Florida's school budget allocated \$800 annually per white teacher for salaries, while it allocated roughly \$510 a year for the services of a black teacher, with the average salary for white teachers at \$1,202 and for blacks at \$605 per annum. Proving such salary discrimination would not take much effort; even Northern newspapers such as the *Pittsburgh Courier* recognized the gross disparity of benefits for Florida's black minority and spoke out for the cause of the over 3,000 black teachers "waging a relentless battle for equalization of salary." As the *Pittsburgh Courier* stated to its readers across the nation, "The outcome of [their] case . . . will have much to do, not only with better pay for teachers but better educational opportunities for Negro children in the South."<sup>18</sup>

Originally, lawyers representing African American teachers asked that their clients earn the full allocation for teachers across the state. But the legal goals evolved to fit the particular circumstances of Florida. Counties ranging from St. Johns in the north to Dade in the south to Hillsborough in the west closed black schools in various months of the academic years to allow students to work as field hands harvesting fruits and vegetables. Since white schools did not experience such closures, blacks operating through local teachers associations and the NAACP began to challenge these "strawberry" and "bean pickers" schools as discriminatory and harmful to the education and psyche of black children. In one notable action, the NAACP branch in Fort Lauderdale raised \$3,500 to begin actions under the direction of Thurgood Marshall to attack the School Board's closing of schools for "bean pickers" from December 1 to July 1. When confronted with these types of challenges, many county officials refused to discuss the issue. NAACP lawyers modified their legal strategy to pressure large, urban counties to equalize pay and terminate abbreviated academic years, hoping that this would force smaller rural counties to follow suit. Concurrently, NAACP lawyers sought to litigate the glaring pay inequity in Florida,

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<sup>17</sup> "Florida Spends Six Times As Much on White Students," *Pittsburgh Courier*, June 19, 1937; Anderson, *The Education of Blacks in the South*, 186, Table 6.5, 236; "Negroes in the United States, 1920-32," U.S. Bureau of the Census (1935), 9-10, 15; see Scott, *The Education of Black People in Florida*, 14-21; "In Florida Negroes Attend Inferior Schools," *Pittsburgh Courier*, December 5, 1953.

<sup>18</sup> W.S. Cawthon, *Biennial Report of the Superintendent of Public Instruction of the State of Florida for the Two Years Ending June 30, 1928* (Tallahassee: T.J. Appleyard, 1928), 255; "Florida Teachers to Continue Salary Fight: Leaders Plan New Approach to Get Equal Salaries," *Pittsburgh Courier*, October 19, 1940.

but they had difficulty finding a teacher willing to put his or her name on such a lawsuit. Harry T. Moore, a state NAACP activist, convinced John E. Gilbert, an eleven-year teaching veteran and principal of the segregated Cocoa Junior High School, to underwrite the first legal challenge to pay inequity in the Deep South. As the news circulated in a number of major African-American newspapers, now often the “voice” of local protesters, the Florida State Teacher’s Association stepped forward and agreed to compensate Gilbert once he was fired.<sup>19</sup>

On the eve of World War II, attorney McGill accompanied Gilbert in filing his suit to equalize teacher’s pay in the Sunshine State. Eventually, the school district fired Gilbert after he lost the case and the Florida Supreme Court refused to overturn the lower court’s ruling, based in part on the recent U.S. federal court’s ruling in *Alston v. School Board of City of Norfolk, Virginia*. That ruling had the effect of shifting the equalization fight to local courts, forcing county-by-county struggles, many of which became centered on the large, urban counties. Gilbert appealed the state court’s decision to the U.S. Supreme Court. While his appeal was pending in November 1941, Mary White Blocker, a sixty-nine year old school teacher in the heavily populated County of Duval, sued the public school system over its unequal pay scales for African American teachers in Jacksonville. Almost simultaneously, George H. Stark and the Teachers’ Association of the less-populated Marion County in Central Florida, with Thurgood Marshall of the NAACP as one of the plaintiff’s attorneys, filed a suit over racial pay disparity against the Board of Public Instruction and Superintendent Broward Lovell as defendants. Although these legal actions did not in themselves destroy the wall of pay inequity for teachers in Florida, they did create a small fissure in that wall that would eventually crumble of its own inequitable weight.<sup>20</sup>

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<sup>19</sup> Lishi, no last name given, to Thurgood Marshall, January 18, 1945, August Meier, ed., *Papers of the NAACP: Legal Department and Central Office Records, 1913-1950, Series B: Legal Department and Central Office Records, 1940-1950* (Frederick, MD: University publications of America, 1986, microfilm version, no pagination), Part 3: The Campaign for Educational Equality, 1913-1950, Reel I, Film 5886; see Jones, “The African-American Experience in Twentieth-Century Florida,” 384; Jones and McCarthy, *African Americans in Florida*, 95-96, 107; Scott, *The Education of Black People in Florida*, 65-66; “Florida Principal Sues for Equal Salary: First of Its Kind in Deep South,” *Pittsburgh Courier*, June 11, 1938; “Florida Teachers to Continue Salary Fight: Leaders Plan New Approach to Get Equal Salaries,” *Pittsburgh Courier*, October 19, 1940; “Florida Principal Files Petition for Equal Pay,” *Baltimore Afro-American*, June 11, 1938.

<sup>20</sup> *Alston v. School Board of City of Norfolk, Virginia* (112 F2d 992), 1940, cert. Denied (311 U.S. 693), 1940; Scott, *The Education of Black People in Florida*, 65-66, 73; Ben Green, *Before His Time: The Untold Story of Harry T. Moore, America’s First Civil Rights Martyr* (Gainesville: University of Florida Press, 2005), 40-41; *George H. Starke, and the Marion County Teachers’ Association, a Voluntary Unincorporated Association vs. Board of Public Instruction for the County of Marion, State of Florida, a body Corporate, and Broward Lovell, Superintendent of Public Instruction for Marion County, Florida, in the District Court of the United States*, No. 42 Ocala—Civil, vs. District Court, Jacksonville Division, July 22, 1942,

Because Jacksonville was Florida's largest city at the time, the NAACP focused its resources on Blocker's lawsuit. Several events occurred just as the case was to be argued before the Court. The school district hastily retired Blocker in an attempt to undermine the case. However, the 285 African American teachers in Jacksonville voted to pay Blocker's salary, a benefit they provided until her death twenty-three years later. The school district's plan failed, and McGill argued the case with the assistance of a special NAACP counsel, Thurgood Marshall, who would later gain national fame for becoming the first African American seated on the U.S. Supreme Court. The NAACP combined the Duval County case with "guinea pigs of democracy" cases from Marion, Tampa, Miami, Palm Beach, and Escambia Counties. Presiding Judge Louis W. Strom, whom Marshall found exceptional inasmuch as he "went with it [the law]" unlike many Southern jurists, chose the Duval County suit as the representative case for the combined arguments.<sup>21</sup>

Marshall and McGill structured a compelling argument in favor of the African American teachers' position. Their brief noted that the state's local school systems were violating the law with a race-based dual pay scale, which paid white teachers sometimes double the base salary of black teachers. Also, white teachers received one-third more money for years of college completed and white principals earned a much larger stipend than black principals. As the news of the case spread, the *Baltimore Afro-American* newspaper included Florida in its condemnation of regressive states unwilling to part with their Old South customs. To the dismay of old-line leaders in the Sunshine State, educational inequalities, so long entrenched in the state's and the region's infrastructure, were now playing out in unflattering ways on a national stage.<sup>22</sup>

Teacher equalization suits posed not only a national embarrassment for Florida, but represented a possible economic hardship for the state as well. The NAACP had already waged a five-year struggle to correct these inequities in other states that produced more than \$25 million in salary adjustments for African American educators. The U.S. Office of Education estimated the cost of equalizing educational facilities in the South at more than \$35 million. In Maryland and Virginia alone, the NAACP helped force state officials to spend \$629,000 equalizing teacher's pay. Equalizing teacher's pay in Florida would cost taxpayers roughly \$1,588,104 annually. This

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National Archives and Records Administration, Southeast Region, 17; "NAACP Fights for School Equalities in Eight States," *Baltimore Afro-American*, March 14, 1942.

<sup>21</sup> Juan Williams, *Thurgood Marshall: An American Revolutionary* (New York: Random House Press, 2000), 22; Scott, *The Education of Black People in Florida*, 72-74, 80; quoted in Mark V. Tushnet, ed., *Thurgood Marshall: His Speeches, Writings, Arguments, Opinions, and Reminiscences* (Chicago: Lawrence Hill, 2001), 457.

<sup>22</sup> "Teachers of 8 States Fighting for Decent Pay," *Baltimore Afro-American*, December 6, 1941; "Why Fight to Equalize Pay Must Go On," *Baltimore Afro-American*, December 13, 1941; see Scott, *The Education of Black People*, 64-80.

sobering financial projection did not settle well with lawmakers in a state priding itself on low taxes (and low services).<sup>23</sup>

After it became obvious that it was going to lose the fight, the Duval County Board of Public Instruction became the first district offering what it deemed a nonracial salary plan. The equity plan called for a salary rate based on countywide teacher examinations and level of training. Teachers “satisfied” with their pay could have their salaries frozen or take the exam and receive an adjustment based upon the results. Marshall argued that the plan unfairly advantaged white teachers, who could have their salaries frozen at the higher rate while African American teachers would have their salaries determined by an exam, which may or may not be administered fairly. After some initial balking, NAACP lawyers reluctantly accepted the Board’s plan. Though not a total victory, this equalization suit put the state on notice that discrimination was going to be challenged; the salary dispute symbolized the first volley in an upcoming battle to purge racial discrimination from all areas of education practices and policies in the Sunshine State. Indeed, within short order, African American plaintiffs filed more pay-equalization suits in as varied locales as Pensacola, Tampa, West Palm Beach, and Miami. The NAACP won the suit in Pensacola (Escambia County) for equalized monthly pay in what the *Pittsburg Courier* labeled “a first victory in the Deep South . . . in a series of suits for the payment of equal salaries to teachers in public schools.” Thus, the agency of African Americans in the Sunshine State created one of the first critical stress point in the wall of educational inequalities that would widen to unparalleled proportions following the earthshaking decision in *Brown*.<sup>24</sup>

However, these victories came with a price and were ultimately dependent on courts enforcing the settlements. State officials, for their part, often found ways to circumvent the agreements by using merit ratings based on discriminatory guidelines and implementation. Moreover, teacher equalization suits generally benefited teachers in large urban settings and often did not affect teachers in smaller, rural counties where judges were less inclined to support such measures. As the reported in the *Pittsburg Courier* in 1945, even the federal government bore responsibility for “such a system that grants so complete a sovereignty to a county, especially [given] the deplorable school condition for Negroes. . . .”<sup>25</sup> By the early 1950s, however, in the nation and in the South, and in Florida as well, the priorities and activism of the black community had

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<sup>23</sup> “35,000,000 Needed to Equalize Teachers’ Pay,” *Baltimore Afro-American*, December 27, 1941.

<sup>24</sup> “Florida Teachers Offered ‘Compromise’ Plan: Board Proposes Pay Scale Based on Examination,” *Pittsburgh Courier*, June 20, 1942; Scott, *The Education of Black People in Florida*, 78-79; “Fla. Teachers Win; Judge Rules Pay Parity By 1943,” *Pittsburgh Courier*, April 11, 1942; see “Florida White Teachers Oppose Equalization,” *Pittsburgh Courier*, January 24, 1942; “Florida White Teachers Fight Equal Pay Suit: Appeal Victory Won By Negroes,” *Pittsburgh Courier*, April 18, 1942; see “Teacher Pay Parity Suits Hit 11 States,” *Baltimore Afro-American*, October 30, 1943.

<sup>25</sup> “Future of Florida Negroes Looks Promising Although Economic, Educational Outlook Uncertain,” *Pittsburgh Courier*, February 11, 1945.

reached new heights of energy and activity—the educational inequality of the past was no longer to be perpetuated under any guises or circumstances.

Casual observers may overlook the connection between World War II, the reinvigorated African American civil rights movement, and Florida's habit of ignoring or deferring racial equalization measures. However, the record reflects numerous ways that the war set the stage for racial permutations. The massive effort expended to end the racist mayhem of Nazi Germany and Imperial Japan reawakened within black leaders the need to attack racial prejudice and discrimination in America. The war made America a superpower, challenged its hollow commitment to equality, and initiated the nearly forty five-year struggle between the Soviet Union and the United States over ideological domination of the Third World. As a result of the new "Cold War," the Soviet Union effectively used propaganda to excoriate America's racial bigotry. These criticisms focused negative light on the United States and embarrassed its leaders in their efforts to win the hearts and minds of people living in Third World countries. As a special investigative committee on civil rights reported to President Truman, "we cannot escape the fact that our civil rights record has been an issue in world politics," and that international critics "have stressed . . . our shortcomings [they] have tried to prove our democracy an empty fraud."<sup>26</sup>

Accordingly, during and following the conflict, the federal government slowly came to support new civil rights measures (and leaders) as Washington, including the federal judiciary, sought to deflect criticism from behind the Iron Curtain. Historian John Hope Franklin's interpretation of the era is that, "The courts . . . took cognizance of racial questions and rather frequently ruled in favor of equality. The executive branch, sensitive to both domestic and foreign pressures, exerted considerable influence in eradicating the gap between creed and practice in American democracy." The shift in federal opinion encouraged African Americans in the Sunshine State to dramatically accelerate ongoing litigation to permanently end racial inequality there.<sup>27</sup>

As the national expectations changed, so did the expectations of the black community on a number of fronts, particularly regarding education for black youth and inferior teaching conditions. What had been a nascent civil rights movement in the courts and the states in the 1930s and 1940s would grow to national proportions by the mid-1950s. School desegregation was at the forefront of that burgeoning movement. Despite Tallahassee's stubborn refusal to comply with newly mandated school integration measures and court orders in the 1950s and 1960s—what scholars have recently termed Florida's "Down South" stonewalling of the inevitable—the Sunshine State was at a crossroads regarding its almost century-old unequal

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<sup>26</sup> *To Secure these Rights: The Report of the President's Committee on Civil Rights* (New York: Simon and Schuster, 1947), 147.

<sup>27</sup> John Hope Franklin and Alfred Moss, *From Slavery to Freedom: A History of African Americans* (New York: McGraw-Hill, 1994), 461; see Kermit L. Hall and Eric W. Rise, *From Local Courts to National Tribunals: The Federal District Courts of Florida* (Brooklyn: Carlson, 1991), 141-42.

educational practices and policies. Even so, the white leaders of the state continued to delay the inevitable.<sup>28</sup>

Florida's extremist past did not bode well for a "moderate" response to the myriad challenges arising from the landmark U.S. Supreme Court's 1954 *Brown* decision, finding segregated schools "inherently unequal" and subsequently ordering desegregation "with all deliberate speed." Even in the face of such a dramatic and forceful directive as *Brown*, Florida, like other entities of the Deep South, clung tenaciously to its long-standing practices of white supremacy and racial segregation. Historians have theorized that the "Yankee" in-migration and economic strides in this emerging Sunbelt State, as well as a lack of political and geographical homogeneity, had worked to mitigate the Sunshine State's racial fault lines; recent studies have challenged this assumption. Despite the unstoppable tide of *Brown*, Florida's leaders, like their compatriots in other Deep South states, simply chose to ignore or derail the inevitable. Nevertheless, reform would come to the recalcitrant state, starting with new equality demands at the schoolhouse doors.<sup>29</sup>

The Court's ruling in *Brown* forced the question of educational race mixing of young children into new levels of political discourse and actions. Throughout the South, state leaders immediately condemned the ruling and instituted policies to repudiate it. Florida helped lay the groundwork for that regional defiance. Acting Governor Charley E. Johns, following the breaking news on *Brown*, arose as one of the first Deep South leaders to suggest extraordinary legislative sessions on school segregation. Johns attended regional conferences on segregation, arguing in concert with other reactionary officials that the vast majority of Southern blacks and whites in the South favored separation. Johns subsequently submitted a proposal to the Southern Governors Conference that would have amended the U. S. Constitution to require in perpetuity "separate but equal public schools for the races."<sup>30</sup>

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<sup>28</sup> See "In Florida Negroes Attend Inferior Schools," *Pittsburgh Courier*, December 5, 1953; Irvin D.S. Winsboro, "Image, Illusion, and Reality: Florida and The Modern Civil Rights Movement in Historical Perspective," in Irvin D.S. Winsboro, ed., *Old South, New South, or Down South?: Florida and the Modern Civil Rights Movement* (Morgantown: West Virginia University Press, 2009), 1-21.

<sup>29</sup> *Brown v. Board of Education of Topeka, Kansas*, 347 U.S. 483 (1954); see Winsboro, "Image, Illusion, and Reality: Florida and the Modern Civil Rights Movement in Historical Perspective," 1-22; Marvin Dunn, "The Illusion of Moderation: A Recounting and Reassessing of Florida's Racial Past," in Winsboro ed., *Old South, New South or Down South?: Florida and the Modern Civil Rights Movement*, 22-46; Paul Ortiz, "Old South, New South, or Down South?: Florida and the Modern Civil Rights Movement: Towards a New Civil Rights History in Florida," in *ibid.*, 220-44; Caroline Emmons, "A State Divided: Implementation of the *Brown* Decision in Florida, 1954-1970," in Brian J. Daugherty and Charles C. Bolton, eds., *With All Deliberate Speed: Implementing Brown v. Board of Education* (Fayetteville: University of Arkansas Press, 2008), 139-54.

<sup>30</sup> "Johns Rules Out Legislative Session Now on Segregation; U.S. Capitol Readies Charge," *Tampa Morning News*, May 19, 1954; "Johns Considers Special Session of Legislature," Fort

For their part, Florida's blacks (now 22.3 per cent of the state's population) quickly organized after *Brown* and instituted direct-action marches and similar measures, placing them at the forefront of the earliest actions against Dixie's massive resistance. Indeed, the *Brown* decision raised the collective consciousness of blacks throughout the South, especially invigorating black parents to challenge the entire edifice of segregation and unequal education. Their agency in the Sunshine State met with the typical white virulence observed across the South. As a result, in the short run, no Florida school districts undertook efforts to integrate African Americans—students, teachers, and administrators—into white, majority schools.<sup>31</sup>

One researcher has characterized this Florida-style stonewalling as essentially a case study of Dr. Martin Luther King's admonition, "'Wait' has almost always meant 'Never'." Florida Supreme Court Chief Justice William Glenn Terrell declared from the bench that, "segregation . . . has always been the unvarying law of the animal kingdom," and that, "we are now advised that God's plan was in error and must be reversed." The report of a special advisory committee to the legislature and governor recommended, reminiscent of an earlier states' rights movement, a frontal attack on the powers of the Court itself for "abrogating the powers of the States to control their system of education [to] destroy the system of dual sovereignty . . . as the fundamental basis of our Union." Although he styled himself a moderate and uttered statements on segregation less inflammatory than those of Governor Johns, his successor, LeRoy Collins, nevertheless embraced a deferral framework based on Florida's bifurcated racial experience. Using the code words of the white South much like his often presumed "moderate" counterpart in North Carolina, Governor Luther Hodges, Collins stated to the legislature in the spring of 1955, "Segregation in our public schools is a part of Florida's custom and law. I will use all the lawful power of the Governor's office to preserve this custom and law." Three years later, the governor was quoted as saying, "We propose to choose what part [of the Constitution] we will accept and what part we will reject. We're moderates." To which the ever-vigilant black press retorted, "Governor Collins proudly calls himself a 'moderate.' If this is moderation, the word has certainly taken on a new and ominous meaning. . . ."<sup>32</sup>

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Myers *News-Press*, May 18, 1954; "Johns Suggests Governors Act on Segregation," Fort Myers *News-Press*, November 12, 1954; "Dixie Governors' Meet Split on Segregation: Tallmadge, Johns Lead Defiance of High Court," *Pittsburgh Courier*, November 20, 1954; see David R. Colburn, "Florida's Governors Confront the *Brown* Decision: A Case Study of the Constitutional Politics of School Desegregation, 1954-1970," in *An Uncertain Tradition: Constitutionalism and the History of the South*, Kermit L. Hall and James W. Ely Jr. eds. (Athens: University of Georgia Press, 1989), 328-29.

<sup>31</sup> W. D. Workman, Jr., "The Deep South: Segregation Holds Firm," in Don Shoemaker, ed., *With All Deliberate Speed: Segregation-Desegregation in Southern Schools* (Westport, CT: Negro University Press, 1957), 92; Joseph A. Tomberlin, "The Negro and Florida's System of Education: The Aftermath of The Brown Case," (Ph.D. diss: Florida State University, 1967), 17-198; Joseph A. Tomberlin, "Florida and the School Desegregation Issue, 1954-1959: A Summary View," *Journal of Negro Education* 43 (1974): 457-67.

<sup>32</sup> Lise M. Steinhauer, "'Wait' Has Almost Always Meant 'Never'," in Winsboro, ed., *Old South, New South or Down South?*, 155-75; "Terrell Says Mix Mandate Reverses God," *Orlando*

In latter life, Collins recounted Tallahassee's reaction to *Brown*, "the legislature passed many bills patterned after the most radical segregationist actions taken in other Southern states." In his monumental study of *Brown* and its aftermath, *Simple Justice*, Richard Kluger has stated that Florida's attorney general submitted the "most extensive and spirited brief" to the High Court in an attempt to "slow the desegregation process" of *Brown*. Florida's U.S. Senator George Smathers criticized *Brown vs. Board* as a "clear abuse of judicial power."<sup>33</sup>

Although frequently recalled as a "moderate" like Collins on the desegregation issue, Florida Superintendent of Public Instruction Thomas D. Bailey also assumed a defiant position on *Brown*: "We have a lot of people down here who hate to be pushed around, whether the state or federal government is doing the pushing." Bailey soon suggested that counties allocate disproportionate budgetary funds on new schools designed to be "equal" yet segregated. The purpose, Bailey would later state, was to equalize educational facilities, thereby eliminating the need to desegregate the state's public school systems. In a subsequent report ordered by Governor Collins, his advisory commission suggested the extreme position that the "Legislature could propose an amendment to our State Constitution which would permit the abolition of the system of free public schools" in Florida.<sup>34</sup> Collectively, these types of state-level stonewalling measures and statements set a pattern for reactionary officials at the county and local levels across Florida.

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*Sentinel*, October 20, 1955; "A Report of the Special Committee, Appointed by the Governor and Cabinet of the State of Florida to Recommend Legislative Action Relating to Public School Education and Other Internal Affairs of Such State Deemed Expedient After Consideration of Recent Decisions of the Supreme Court of the United States (Tallahassee, July 16, 1956), 5; quoted in *Florida Across the Threshold: The Administration of Governor LeRoy Collins, January 4, 1955-January 3, 1961* (Tallahassee, 1961), 54; see LeRoy Collins, "How It Looks from the South," *Look*, May 15, 1958, 95-97; "The Poison of Moderation," *Baltimore Afro-American*, June 7, 1958; on Governor Luther Hodges, see William H. Chafe, *Civilities and Civil Rights: Greensboro, North Carolina and the Black Struggle for Freedom* (New York: Oxford University Press, 1980), 49-61.

<sup>33</sup> LeRoy Collins, "Past Struggles, Present Changes, and the Future Promise for Civil Rights in Florida and the Nation," in Charles U. Smith ed., *The Civil Rights Movement in Florida and the United States: Historical and Contemporary Perspectives* (Tallahassee: Father and Sons Publishing, 1989), 16; quoted in Martin A. Dyckman, *Floridian of His Century: The Courage of Governor LeRoy Collins* (Gainesville: University Press of Florida, 2006), 89, see 106; Tom Wag, *Governor LeRoy Collins of Florida: Spokesman of the New South* (Tuscaloosa: University of Alabama Press, 1985), 14, 42; Kluger, *Simple Justice*, 724-25.

<sup>34</sup> "Bailey Sees No Push For Desegregation," *Fort Myers News-Press*, June 2, 1955; Florida Governor's Advisory Commission on Race Relations, *Report of the Advisory Commission on Race Relations to Governor LeRoy Collins, March 16, 1959* (Tallahassee: n.p., 1959), Smathers Library, University of Florida, Gainesville, Florida, 18.

Henceforth, both public and legal actions in Florida centered on circumventing *Brown* through stonewalling or token actions. The *Pittsburg Courier* summed up the situation this way, “Florida defiantly has aligned with other states in the South determined to return the status of the Negro to the inhuman days of Reconstruction following the bloody Civil War.” Even though this led to further law suits, over a decade later, Florida State Department of Education findings on the post-*Brown* years reported that the decision had “no [substantial] effect on Florida.” This did not change until local activists, frustrated and aggrieved by Florida’s deferral, began to file suits in federal rather than state courts to “push” for compliance with the Civil Rights Act of 1964. Still, the period leading up to the new federal measure of 1964 reflected more delay and deferral rather than what can be reasonably defined as moderate progress on school desegregation in the Sunshine State.<sup>35</sup>

In the lead up to these forced changes, Florida’s political leaders embraced a two-pronged strategy on public school integration. They publicly acknowledged that integration was inevitable but they privately opposed desegregation. On May 31, 1955, the Supreme Court rendered a second ruling on desegregation in *Brown II*. The ruling established neither timetables nor deadlines; it simply ordered desegregation as “soon as practicable.” Without a Court-mandated deadline for desegregation, the State of Florida found just cause to continue non-compliance. Indeed, Governor Collin’s signed into law Florida’s Pupil Assignment Law, “deemed expedient after consideration of recent decisions of the Supreme Court,” mandating that counties assign students to schools based on sociological and psychological factors, the very day the Court issued *Brown II*. The law did not mention race but allowed pupils to transfer between schools only if they were “qualified” and matched the moral, psychological, and socioeconomic background of the pupils in the school of admission. Many white legislators believed that this would stop most African American children from transferring to white schools. Conversely, the powerful rural and reactionary element of the legislature argued that more drastic measures were needed to prevent race mixing in Florida’s schools and elsewhere. Florida, like most Southern states, supported such pupil placement laws as a subterfuge to *Brown* and a method of ignoring the inevitable court orders and changes Washington would demand. Despite the appearance of a new school improvement movement in this “state on the move,” and intermittent talk about moderation and progressive education, Tallahassee lawmakers remained insistent on projecting the illusion of school reform while they practiced separate and unequal as the norm in their communities for decades to come.<sup>36</sup> The illusion of moderation had once again overshadowed Florida’s racial reality.

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<sup>35</sup> “State of Florida Schemes to Hamstring NAACP,” *Pittsburg Courier*, February 6, 1957; see Dan Cunningham, “School Desegregation in Florida, 1954-1970,” Florida Department of Education, November 18, 1970 (five-page report, typed), Smathers Libraries, University of Florida, 1,4.

<sup>36</sup> *Brown v. Board of Education*, 349 U.S. 294 (1955); see Donald G. Nieman, *Promises to Keep: African-Americans and the Constitutional Order, 1776 –to the Present* (New York: Oxford University Press, 1991), 155, 158-159; Kermit L. Hall and Eric W. Rise, *The Federal District Courts of Florida*, 134-39; Thomas A. Bailey, “Florida’s School Assignment Law” (Report, Tallahassee: State Department of Education, 1956), 14-18. In many state of the South, the Pupil Assignment Laws became commonly known as the Pupil Placement System.

As resistance to *Brown* swept throughout the South and the Sunshine State along with it, Collins, Bailey, and state Attorney General Ervin, ramped up their efforts to convince the media that Florida was pursuing a non-radical policy in the wake of *Brown*. Their plan was to delay desegregation as long as possible while convincing the courts that Florida was developing an action plan. Tallahassee's leaders made the regional stratagem of pupil assignment laws a cornerstone of their deferral tactics and attempts to placate federal officials.<sup>37</sup>

In 1957 the Pork Choppers, a group of ultraconservatives representing twenty-two rural North Florida counties, attempted to pass a strict segregation bill. The unsuccessful "Gang" took advantage of the furor over the possible qualification of a few African American children to attend white schools under the Florida pupil assignment measure. With the help of the Senate President and House Speaker, the ultraconservatives passed a defiant interposition resolution in unison with seven other Southern states based on the charge that Washington and Courts were usurping state powers. Governor Collins denounced the legislation. The "states' rights" legislature struck back by passing a "last resort bill," enabling a vote of 25 percent of the property holders in a district threatened with desegregation to abolish their public schools. Collins vetoed the legislation, referring to its supporters as agitators. The legislature failed to override his veto and the school crisis seemed averted for the moment. Nevertheless, Attorney General Richard Ervin observed that the Florida legislators, "did almost all [they] could to prevent integration. By pursuing such race-based measures and proposals, as W. D. Workman, Jr. found in his study on the topic, Florida had established its brotherhood with the seven other Southern states that had actually increased their resistance to desegregation since the decision in 1954."<sup>38</sup>

Concurrently, some Southerners organized violent demonstrations in new efforts to dissuade state officials from modifying existing school structures. As noted in the black press, there was a series of bombings throughout Dixie aimed at "bastions of integration." Between January and May of 1958, there were forty-five racially motivated bombings in the South. The last two were

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<sup>37</sup> "State Relieved," Fort Myers *News-Press*, June 1, 1955; "Desegregation Postponed Ervin Says" *Miami Herald*, June 3, 1955; see Charles U. Smith and Charles Grigg, "School Desegregation in Florida," in *The Civil Rights Movement in Florida and the United States*, 178-222; Tomberlin, "The Negro and Florida=s System of Education: The Aftermath of the *Brown* Case," 73-100; Darryl Paulson, "Unfinished Journey: After 50 Years of Striving, The Destination Is Still Unclear," *Forum* (Spring 2004), 7-9, 9-11; Colburn and Scher, *Florida's Gubernatorial Politics*, 225-26.

<sup>38</sup> W. D. Workman, Jr., "The Deep South: Segregation Holds Firm," in Don Shoemaker, ed., *With All Deliberate Speed: Segregation-Desegregation in Southern Schools* (Westport, CT: Negro University Press, 1957), 99-100, 109; "Ervin Says Legislature Did Almost All It Could to Prevent Integration," *St. Petersburg Times*, August 8, 1959; Colburn, Florida's Governors Confront the *Brown* Decision," 336; Colburn and Scher, *Florida's Gubernatorial Politics*, 175-78, 226.

in Jacksonville, Florida, where shadowy figures bombed the all-black James Weldon Johnson Middle School.<sup>39</sup> Despite its reputation for moderation, the Sunshine State pursued many of the very same strategies against integration that characterized the former Confederacy at large. In the midst of it all, some areas of Florida bowed to the inevitable and began the process of integrating their schools as local affairs. In 1959, the thoroughly segregated Dade County Public Schools initiated Florida's first desegregation plan. Local officials in Miami integrated their public school system ahead of anticipated Federal Court mandates requiring such and thereby hoped to circumvent federal interference in the local schools. Even though most of the white residents in the soon-to-be integrated neighborhood moved, the plan represented an historical leap for the Sunshine State. This action, however, by garnering both national and state attention, returned educational desegregation to the top of the Florida's agenda and simultaneously re-energized the anti-integrationist forces, especially the proponents of pupil assignment actions as a way to circumvent full compliance with *Brown*.<sup>40</sup> Even as the new decade dawned, the struggle over colorblind schools yet influenced the educational, political, and social climate of Florida.

Farris Bryant rose to power as Florida's new "staunch segregationist" governor in 1961. Unlike his predecessor, Bryant did not make education the capstone of his legislative agenda. Bryant's major constituents were industrialists who wanted him to reduce spending and decrease the state budget. To these constituents he once uttered, "I don't propose to collect taxes," adding as if to court segregationists, "and I don't propose to enforce civil rights."<sup>41</sup> As the governor uttered these words, only six of the state's 67 counties had move to integrate their schools. Thus, by the 1960s educational issues were increasingly sinking to low priority items in the state's agenda at precisely the time when the regional integration process was gaining momentum. State officials knew that they could not stop integration, but they hoped that they could delay it until the political tides turned in a more favorable direction. Focusing on the lack of progress in the decade, historian Raymond A. Mohl concluded, "With only a few exceptions, Florida's political leaders through the 1960s strongly supported segregation . . . ."<sup>42</sup>

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<sup>39</sup> "FBI Inquiry Asked: Case of Jersey Sees Terror Drive in Southern Bombings," *New York Times*, May 11, 1958.

<sup>40</sup> "Fla. Quietly Bows: Miami Mixes 1<sup>st</sup> School, Others May Follow Suit," *Baltimore Afro-American*, September 19, 1959; Winsboro, "Image, Illusion, and Reality," in Winsboro, ed., *Old South, New South, or Down South?*, 9;

<sup>41</sup> Quote in Colburn and Scher, *Florida's Gubernatorial Politics in the Twentieth Century*, 233; Colburn, "Florida's Governors Confront the *Brown* Decision," 340; White, *Florida's Crisis in Public Education*, 12-13.

<sup>42</sup> "Florida Schools Open Door to Negro Students," *Pittsburgh Courier*, September 1, 1962; Raymond A. Mohl, "The Patterns of Race Relations in Miami Since the 1920s," in David R. Colburn and Jane L. Landers eds., *The African American Heritage of Florida* (Gainesville: University Press of Florida, 1995), 347.

Public school integration was coming to Florida, but state officials enacted delay after delay in efforts to sidetrack or unravel the school integration ordered in *Brown*. By 1964, a decade after *Brown* and repeated NAACP suits in Florida, fewer than 2 per cent of the Sunshine State's school districts had instituted more than token desegregation measures, and only 1.53 per cent of Florida's African American children attended class with whites. In 1966, Governor Hayden Burns convened a Conference on Education; neither Burns's lengthy charge to the group nor its subsequent report to the governor even mention the state's deplorable record on desegregation and the myriad federal suits and federal actions now forcing Tallahassee and local districts into a new era of school realignment. For the governor and state education and political leaders, deconstructing the color line in public schools appeared to be a non-issue. It was clear that widespread desegregation of Florida's public schools would not occur unless some new factor emerged. That factor originated not in Florida but in Washington, D.C.<sup>43</sup>

Titles IV and VI of the Civil Rights Act of 1964 provided the federal government and Courts with the power of school desegregation enforcement and accountability that they had heretofore lacked. Moreover, governmental agencies, now seen as allies to the black community, had the power to withhold federal funds for school districts that practiced segregation or otherwise adopted mechanisms to despair academic achievements between or among social groups.<sup>44</sup> The Department of Justice (as opposed to often reluctant individuals) could now initiate suits under the Act and moreover could act as plaintiff to force school districts to comply with federal desegregation guidelines. Responding to the new federal mandate, which effectively defused gubernatorial and legislative pro-segregation policies, Tallahassee faced a new reality regarding its delay and stonewalling tactics.

Even in the face of Florida's governor and attorney general quietly advising officials on how to "dodge" the new law, the Act notably coalesced grass-roots opponents of segregation and spurred them on to a new phase of legal militancy. Capturing the spirit of the time, one seasoned senior black educator in Fort Myers recalled the stark transformative effect of the new measure, "The Civil Rights Act of 1964 changed it all." This latest phase of black activism stimulated by the Civil Rights Act of 1964, was eventually augmented by higher court case precedent, in particular the *Green* and *Alexander* decisions, in which the High Court not only struck down "freedom of choice" plans but also delineated the responsibility of local school boards to abolish dual attendance zones. The cases spawned legal challenges in Florida, manifested themselves in a spate of new NAACP and local protagonists' filings against segregated school districts in as geographically and demographically disperse regions of the state as Alachua County in the north,

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<sup>43</sup> United States Commission on Civil Rights Florida Advisory Committee, *Desegregation of Public School Districts in Florida: 18 Public School Districts Have Unitary Status, 16 Districts Remain Under Court Jurisdiction* (Washington, D.C.: U.S. Commission on Civil Rights, 2007), 2; Governor's Conference on Education, *Governor's Conference on Education Report* (Tallahassee: Governor's Conference on Education, 1966), 1-51.

<sup>44</sup> United States Civil Rights Act, 1964 Title VI, 42 USC " 2000d B 2000d-7, available at [www.usdoj.gov/crt/cor/coord/titlevistat](http://www.usdoj.gov/crt/cor/coord/titlevistat) (accessed February 15, 2012); see "Civil Rights During the Kennedy/Johnson Years," *Pittsburgh Courier*, February, 15, 1986;

Pinellas County on the west coast, Monroe County at the southern extreme (the Keys), to Brevard County on the east coast. As late as 1969, one such suit had led the U.S. Supreme Court to order Florida to stop delaying desegregation of its schools.<sup>45</sup>

Yet reactionary Florida was still not ready to accept the inevitable. In 1967 GOP Claude Kirk, Jr. entered the governor's office as a staunch segregationist, who felt little incentive to make the Civil Rights Act of 1964 and its evolving iterations priorities of his administration. Kirk, a Richard Nixon "law and order" Republican, also emulated Nixon in pursuing ultra-conservative fiscal and social policies, including actively working against the use of cross-neighborhood busing to achieve racial integration in Florida's yet color-coded schools. No only did Kirk openly defy court-ordered school desegregation, but he brazenly betrayed his Old South delay and stonewalling tactics by suspending the school board of Manatee County and appointing himself school superintendent in an effort to derail the impending desegregation of that school district. As if this gesture of local defiance were not enough for Kirk, he took his petition-waving protests against school desegregation to the steps of the U. S. Supreme Court in Washington, D.C. in an event that captured national headlines. In so doing, the governor possibly read well the mood of his electorate in the Sunshine State; in the presidential election year of 1968, Florida voters had registered 40.5 per cent of their vote for the racially insensitive Richard Nixon, 30.9 percent for the pro-civil rights Hubert Humphrey, and 28.5 per cent for the racial demagogue George Wallace. As the Sunshine State had entered the decade with dual and unequal schools, it so capped the decade, punctuated by the defiance and self-described "confrontation politics" of Governor Claude Kirk.<sup>46</sup>

In retrospect, the sweeping Civil Rights Act of 1964, by essentially codifying many of the school equalization goals and invalidating the South's roadblocks to desegregation, fueled another equality drive, and by so doing strengthened the resolve of anti-segregationists in the 1960s to finally tear down the wall of bigotry between dual and unequal schools. This occurred most notably when Old South Florida finally moved into a new era of political reality as the "old

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<sup>45</sup> "Florida Attorney Gen. Tells How to Dodge New Law," *Pittsburg Courier*, July 25, 1964; Daisy Sapp Benjamin, Lee County Black History Society Program Chair (former teacher, Lee County Public Schools), interview by author, March 9, 2005; *Green v. School Board of New Kent County, Virginia*, 391 U.S. 430 (1968); *Alexander v. Holmes County Board of Education*, 396 U.S. 1218 (1969); see Rowland Young, "Review of Recent Supreme Court Decisions," *American Bar Association Journal* 54 (1968), 912-13; A>Desegregation NowBBut How to Do It?,@ *U.S. News and World Report*, November 10, 1969, 45-46; "The Supreme Court: Integration Now," *Time*, November 7, 1969, 19-20; *Wright v. Alachua*, Case # 367, *Bradley v. Pinellas*, Case # 64-98-T, *Major v. Monroe County of Board of Public Instruction*, Case # 64-331-CF, *Weaver v. Brevard County Board of Instruction*, Case # 1172, "Civil Liberties Court Cases, 1945-Present," National Archives and Records Administration, Southeast Region, 16-18; see Tomberlin, "The Negro and Florida's System of Education: The Aftermath of Brown," 233-58; White, *Florida's Crisis in Public Education*, 90.

<sup>46</sup> "Former Florida Gov. Claude Kirk dies at age 85," *Tampa Bay Times*, September 29, 2011; "Ain't Nobody Gonna Touch King Claude," *Time*, April 20, 1970, 30.

school” of political leaders gave way to a “new school” of World War II and post-World War II Democratic state leaders like Governor Reubin Askew (1971-1979), who had begun their public careers in the era of *Brown* with the realization that Florida must shed its Dixie persona in order to grow as a national business and tourist mecca. Indeed, Askew, representing this new vision of progress and race relations, appointed the first blacks to the Florida Supreme Court and to the state cabinet since Reconstruction. These were unprecedented acts designed in part to move Florida out of segregation and exclusion into the political and economic realities of the waning 20<sup>th</sup> century. Askew’s successor, Governor Bob Graham (1979-1987) of south Florida and Governor Lawton Chiles (1990-1998) of central Florida continued this forward vision as the Sunshine State finally abandon its educational pattern of racial deferral and attenuation for the educational realities of the post-*Brown* decades.<sup>47</sup>

Nevertheless, school equalization in Florida still unfolded slowly. In the late 1960s, over 90 per cent of students attended segregated schools and about half of the state’s school districts faced litigation in the federal courts to repudiate actual of vestiges of public school segregation. As Florida entered the 1970s, 76 per cent of its counties conducted school affairs under federal court-ordered desegregation or Health, Education, and Welfare (HEW) plans of reasonable timetables, compliance, and associated goals for desegregation. Because most of the displaced or dismissed administrators and teachers in the slow integrating process were, in fact, blacks, the black press found the process to be less “integration” and more “outegration.” When busing of students to achieve court-mandated desegregation plans arose as a divisive educational and social issue in the period, Florida voters by a margin of roughly three-to-one approved an anti-busing resolution in a public referendum on the issue. In effect, the Sunshine State had deferred or stonewalled public school access, matriculation, and social restructuring precisely as long as the more violent and defiant states of the Deep South.<sup>48</sup>

As the need for compliance with the federal Civil Rights Act of 1964, and increased black demands and court cases, resulted in the final demise of historically segregated schools by the decade of the 1970s, the state yet faced a wave of unofficial segregation as “white flight” reinstituted the color factor in the state’s educational settings, especially in the urban areas. As white flight compounded the Sunshine State’s rendezvous with unitary school districts (i.e., districts devoid of inherently unequal schools) new and often bitterly divisive issues, such as

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<sup>47</sup> See White, *Florida’s Crisis in Public Education*, 90-109; Martin A. Dyckman, *Reubin O’D Askew and the Golden Age of Florida Politics* (Gainesville: University Press of Florida, 2011), 89-93, 203-08, 222; Jones, “The African-American Experience in Twentieth-Century Florida,” 378-79.

<sup>48</sup> U.S. Center for Educational Statistics, 1969; U.S. Bureau of the Census, “Census of Population: 1970, PC (1), table 24; *Desegregation of Public School Districts in Florida: 18 Public School Districts Have Unitary Status, 16 Districts Remain Under Court Jurisdiction*, 58; “Displacement of Black Teachers: ‘Integration’ Labeled ‘Outegration,’” *Pittsburgh Courier*, February 20, 1971; “Fla Rejects Busing, Favors Integration,” *Baltimore Afro-American*, March 25, 1972.

student assignment, controlled choice, magnet schools, district-wide busing, and the state's parsimonious funding of its public schools, arose as proposed or enacted measures to institute district-wide integration and diversity of schools. That district-wide diversity would result not only positive sociological goals but also in merging student populations' claim on scarce resources and lifetime opportunities. Despite the historical struggles for desegregation, recent testing data and subsequent scholarship on the subject suggest that Florida continues to sustain its historical black-white student equalization and achievement gap that characterized and divided the "inherently unequal" schools of this "moderate" Southern state since the antebellum years.<sup>49</sup> Although officially ended by the 1970s, the Sunshine State's long and troublesome history of school segregation continued to be an issue well into the new millennium, as, congruent with the South as whole, race divisions and black mobilization underscored the historical patterns, practices, and opportunities of the state's Old South and Down South educational experiences.

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<sup>49</sup> See, for example, Kathryn M. Borman, Tameca McNulty Eitle, Deanna Michael, David J. Eitle, Rejinald Lee, Larry Johnson, Deidrie Cobb-Roberts, Sherman Doin, and Babsboro Shircliffe, "Accountability in a Postsegregation Era: The Continuing Significance of Racial Segregation in Florida's Schools," *American Education Research Journal* 41, no. 3 (Fall 2004), 605-31; "Educational Funding in Florida Can't Be Easily Explained," *Herald-Tribune* (Sarasota), February 28, 2010.

*A Study on the Effect of Two-Tier Online Tests Integrated with Concept Cartoons on  
Aboriginal Students' Scientific Concepts in Taiwan*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

The study integrates concept cartoons with two-tier tests in hopes that those cartoon images presented in the aboriginal culture will not only help aboriginal students understand the meaning of the questions, but also gain interest during the test. Concept cartoons refer to cartoons are drawn by daily life scenarios with the scientific concept. Learners will produce different cognitive perspectives and be stimulated to think deeper. Two-tier tests include two to four multiple choices in the first tier test, and the reason options in the second tier test as references for the learners to select correct answers in the first tier test. This mechanism not only evaluates the correctness of students' concept, but also helps learners, whether they truly understand the background knowledge. Research results indicate the two-tier tests integrated with concept cartoons based on aboriginal culture significantly benefit students' scientific concepts.

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## 1. Introduction

The current mainstream of science education is pluralistic science education or science education for all. Science education focuses on helping students from different social and cultural backgrounds and with different worldviews to learn science, and learn to recognize the contribution and value of different cultures, ethnic groups and genders to science [2]. Although there is growing awareness of emphasis science education for aboriginal students from elementary to middle schools in Taiwan, it is still an issue draw our attention in current stage. The development of science courses in the elementary and middle schools in aboriginal tribes should be based on students' experiences in their daily life, so that they may understand the meaning of their traditional culture, values and perspectives in science from societies and geographic environments they live in. It should also help them understand how to view the culture and value science, to convert it into their perspective to the world, while learning scientific knowledge at the same time. This process should drive middle to elementary school students to ponder on their traditional culture and foster a sense of responsibility to revitalize traditional culture, and continuously inject new life into aboriginal culture [5].

The purpose of this study is to develop an online test module that incorporates aboriginal culture. It uses two-tier online test tools integrated with concept cartoons to display questions, offering elements closer to the daily lives of aboriginal students. This study then explores whether if the online test module that incorporates aboriginal culture benefits aboriginal students in understanding scientific concepts.

## 2. Literature Review

### 2.1 Two-tier test

Two-tier tests consist of multiple-choice questions and are divided into three types based on how answers are presented and how subjects may choose from the answers [3]:

1. Questions for both the first and second tiers are multiple choices with multiple answers; options of the second tier do not change along with the choice made in the first tier.
2. Questions for both the first and second tiers are multiple choices with a single answer; options of the second tier do not change along with the choice made in the first tier.
3. Questions for both the first and second tiers are multiple choices with a single answer; options of the second tier change along with the choice made in the first tier.

Each type of two-tier test has its advantages and disadvantages when it comes to answer analysis. Although the first type offers many options, it generates data that cannot be analyzed and often results in too many pairs of answers. Analysis of the second type is relatively simple compared with the first type where there are multiple answers for each question; it is also easier to determine whether if subjects randomly responded to questions. When the third type is developed into a computerized test, questions are more concise compared with the other two types.

### 2.2 Concept cartoons

Concept cartoons refers to cartoon drawing through daily life scenarios into scientific concepts that the learners produce cognitive conflict by different perspectives and stimulate them to think deeper. Concept cartoons are a teaching strategy of constructivism, and use cartoon figures in daily life scenarios to describe different perspectives of scientific concepts, creating visual stimulation and conflict of perspectives [1, 4]. The conflict of concepts and visual stimulation created by concept cartoons cause students to propose their own perspectives, and further search for supporting arguments.

### **3. Research Methods**

#### **3.1 Test bank**

Questions and concept cartoons designed by this study are as follows:

**3.1.1 Two boars of different sizes in Yilan County Nanao Township Nanao Village are fighting over territory. If only the magnitude of force is considered and not the direction, which of the following descriptions regarding force and acceleration during collision is true?**

##### **3.1.1.1 First tier questions**

1. The large boar sustains greater force and therefore has greater acceleration.
2. The small boar sustains greater force and therefore has greater acceleration.
3. Both boars sustain the same force and have the same acceleration.
4. Both boars sustain the same force, but the small boar has greater acceleration.

##### **3.1.1.2 Second tier questions**

###### **3.1.1.2.1 If the answer for the first tier was “A”**

1. The large boar has greater mass and greater force during collision. From the law of motion that action force equals reaction force we know that the larger boar sustains greater force and therefore has greater acceleration.
2. The large boar has greater mass and velocity. From the law of motion that action force equals reaction force we know that the larger boar sustains greater force and therefore has greater acceleration.

###### **3.1.1.2.2 If the answer for the first tier was “B”**

1. The large boar has greater mass, so the small boar sustains greater force and has greater acceleration.
2. The small boar was knocked back a greater distance, so it sustained greater force and had greater acceleration.

###### **3.1.1.2.3 If the answer for the first tier was “C”**

1. When the two boars collide, from the law of motion that action force equals reaction force we know that the two boars sustain the same force and have the same acceleration.
2. When the two boars collide, we know from the work and kinetic energy theorem that the two boars sustain the same force and have the same acceleration.

###### **3.1.1.2.4 If the answer for the first tier was “D”**

1. When the two boars collide, from the law of motion that action force equals reaction force we know that the two boars sustain the same force, but since the small boar has smaller mass, we know from  $F=ma$  that the small boar has greater acceleration.
2. When the two boars collide, from the law of motion that action force equals reaction force we know that the two boars sustain the same force, but since the small boar has smaller mass, thus the larger its velocity the greater its acceleration.



Figure 1 Explanation of System Screens

**3.1.2 A flying squirrel in Yilan County Nanao Township Nanao Village sets off a trap and is hanged by a tree, which of the following descriptions are correct?**

**3.1.2.1 First tier questions**

1. When the flying squirrel reaches the highest point, its velocity is zero.
2. When the flying squirrel reaches the highest point, its acceleration is zero.
3. No matter how long the rope hanging the flying squirrel is, its swing period is the same.
4. The larger the mass of the flying squirrel, the longer the swing period.

**3.1.2.2 Second tier questions**

**3.1.2.2.1 If the answer for the first tier was “A”**

1. Based on the law of energy conservation, kinetic energy is converted to potential energy, so when the flying squirrel reaches the highest point, its velocity is zero.
2. When the flying squirrel reaches the highest point, it is not affected by gravity, so its velocity is zero.

**3.1.2.2.2 If the answer for the first tier was “B”**

1. The flying squirrel is motionless when it reaches the highest point, so its acceleration is zero.
2. When the flying squirrel reaches the highest point, its velocity is zero and its acceleration is also zero.

### 3.1.2.2.3 If the answer for the first tier was “C”

1. The swing period is related to the flying squirrel's mass, but not related to the length of the rope.
2. The swing period is related to the flying squirrel's velocity, but not related to the length of the rope.

### 3.1.2.2.4 If the answer for the first tier was “D”

1. The larger the mass of the flying squirrel, the greater the acceleration because of gravity, so the longer the swing distance, the longer the period.
2. The larger the mass of the flying squirrel, the greater the acceleration because of gravity, so the longer the swing time, the longer the period.



Figure 2 Explanation of System Screens

## 3.2 Concept cartoon two-tier online test module

The design of the online system focuses on integrating concept cartoons with two-tier test, hoping that questions presented using concept cartoons based on aboriginal culture will not only help aboriginal students better understand questions, but also gain interest during the test. The two-tier test of this system asks multiple-choice questions for both tiers, the second tier's options do not change along with answers of the first tier. Flash software is used to make the concept cartoons for the question and each answer. Furthermore, each option in the second tier according to the meaning of the questions is in animation, and provides the function of repeatedly viewing by students.

## 4. Research Results

### 4.1 Research subject analysis

This study conducted the tests in two sophomore classes in Nanao High School, Yilan County; one class for the experimental group, one class for the control group. An analysis of research subjects is as shown in Table 1.

<i>Group</i>	<i>Number of Subjects</i>	<i>Gender</i>	<i>Identity</i>
<i>Experimental Group</i>	34	<i>Male:</i> 18 <i>Female:</i> 16	<i>Aboriginal:</i> 18 <i>Non-aboriginal:</i> 16
<i>Control Group</i>	13	<i>Male:</i> 6 <i>Female:</i> 7	<i>Aboriginal:</i> 12 <i>Non-aboriginal:</i> 1

Table 1 Research Subject Analysis

### 4.2 Mean of scores of the experimental group and control group

The experimental group (16.5 points) performed better than the control group (7.6 points), proving that two-tier tests integrated with concept cartoons can help aboriginal students understand the meaning of questions, and further understand the scientific knowledge to each question, as shown in Table 2.

<i>Group</i>	<i>Number of Subjects</i>	<i>Mean</i>
<i>Experimental Group</i>	34	16.5
<i>Control Group</i>	13	7.6

Table 2 Mean of Scores of the Experimental Group and Control Group

### 4.3 Mean of scores of the experimental group by gender

Female subjects (23 points) of the experimental group performed better than male subjects (11 points), indicating that two-tier tests integrated with concept cartoons benefit female students more than male students in helping them understand the meaning of questions, and further understand the scientific knowledge to each question, as shown in Table 3.

<i>Gender</i>	<i>Number of Subjects</i>	<i>Mean</i>
<i>Male</i>	18	11
<i>Female</i>	16	23

Table 3 Mean of Scores of the Experimental Group by Gender

#### 4.4 Mean of scores of the experimental group by identity

Aboriginal students (24 points) performed better than non-aboriginal students (9 points), proving that two-tier tests integrated with concept cartoons benefit aboriginal students more than non-aboriginal students in helping them understand the meaning of questions, and further understand the scientific knowledge to each question, as shown in Table 4. Cartoons of this study were designed based on aboriginal culture, and evidence shows that they were more beneficial to aboriginal students.

<i>Identity</i>	<i>Number of Subjects</i>	<i>Mean</i>
<i>Aboriginal</i>	18	24
<i>Non-aboriginal</i>	16	9

Table 4 Mean of Scores of the Experimental Group by Identity

#### 5. Conclusions

This study develops an online test module that incorporates aboriginal culture. It uses two-tier online test integrated concept cartoons to display questions, providing elements that are diverse and closer to the daily lives of aboriginal students. Research results indicate that this system greatly benefits aboriginal high school students, especially female students in understanding the meaning of questions, and further understanding the scientific knowledge of each question.

#### Acknowledgements

This research was supported by the National Science Council, Taiwan (ROC), NSC100-2514-S-028-001.

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*A Comparative Study of Cooperative and Collaborative Learning on Online Game-styled Learning Systems*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

This study attempts to apply two teamwork learning patterns, Cooperative Learning and Collaborative Learning, to the online game-styled computer-assisted learning system. Four units of fourth-grade elementary math are implemented into the games; that students are engaged in. In addition, the study explores whether these two online game mechanisms help students with math studies in a significant way. The study employs the quasi-experiment method to evaluate teaching achievements. Outcomes of the pre-test and post test T-test, as well as variable analysis revealed that the learning achievements of these two approaches are superior to conventional stereotypes. Studies in the correlation between genders and the two learning patterns found that boys are more suitable to participate in collaborative learning while girls act well in both teamwork-learning patterns.

**Keywords:** Cooperative Learning, Collaborative Learning, Online Game-Styled Learning System

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## 1. Introduction

Many have the impression that as long as a teacher divides students into several groups, panel discussions, and, later, the conclusion considered as team learning. This kind of grouping approach; however, can easily lead to nominal teamwork learning in which more capable students are given more responsibilities while less competent students are relegated to token roles [8]. As a result, more capable students will learn faster than less competent students, and as the vicious circle repeats itself high-achievers will be better and better and low-achievers will only be moving toward the opposite direction [5]. To rectify this problem, we plan to characterize learning methods based on different teamwork learning approaches, bring out effective responsibility sharing and exact cooperation to students, in order to achieve substantial learning objectives...

As described above, the purpose of this study are as following:

1. To engage in four studying aspects: volume, fraction, angle and length.
2. To explore, which learning mode either Cooperative Learning or Collaborative Learning is more helpful in assisting fourth-graders math studies.
3. To examine whether the cooperative environment of online math game enhances students' willingness and ability, in hopes that research outcomes as a reference for teachers in developing teaching methods.

## 2. Literature Review

### 2.1 Definition of Teamwork Learning

The idea of teamwork learning is not new. Since the ancient past there have been scholars advocating the concept of teamwork learning. "Those who study alone without friends tend to be narrow-minded and uninformed," said Confucius. "Where there are as few as three people, I can find someone to teach me something." The great philosopher was referring to the fact that the power of self is weak and that the strength and wisdom of every member of the group needs. Palincsar indicates "teamwork learning" is about assigning students to small groups in which they learn through cooperation [10]. Students work together to accomplish the objective. Through discuss, interact with each other, encourage separate criticisms, adjust the point of view, all the students of each group can learn the designated materials. Teamwork learning is the essential component of constructivism. It is a concept of teaching design that encourages students to continue to discuss with others and exchange opinions with others in the learning process in order to construct knowledge that is meaningful to the students [7].

### 2.2 Categories of Teamwork Learning

There have been numerous studies on teamwork learning, yet few have attempted to define the category of teamwork learning. In terms of two learning methods, cooperative learning and collaborative learning collectively refer to cooperative learning, but has differences of original meaning. The following is a brief explanation of the two types of teamwork learning. Cooperative Learning: Cooperative learning is often applied to group learning. Through group discussions students solve the problems [3]. In group learning of uneven task distribution, responsibility sharing is often relegated to mere formality possibly because of the fact that high-achievers for fear of being slowed down by the low-achievers choose to

attain the goal alone that is meant for group completion and thereby deprive teamwork learning of its meaning. Conversely, it is also possible that in order to evade heavy responsibility high-achievers will purposely hide their ability and shift the burden to others. To avoid this situation, we need to separate “team learning” from “cooperative learning”. “Cooperative learning” means every student of the team to assume the responsibility of accomplishing a part of the learning objective. Every part is equally important. It requires all to pool their efforts together in order to accomplish the mission of the team. That is genuine cooperative learning [1]. Johnson & Johnson believe cooperation is a relationship of reciprocal assistance that requires individual responsibilities. Every member of the group needs to learn and develop communication skills and makes decisions through communication and mutual trust [6].

**Collaborative Learning:** This is clearly a social process among group members who could adopt various strategies for resolving differences including asserting dominance, acquiescing, or some form of reciprocal sense making. An important aspect of collaborative learning is the move from assimilation to construction [9]. Collaborative learning in practice, therefore, is allowing a group of learners to explore learning problems through active interaction and remove these problems [4]. In this type of teamwork learning, there is no clear distinction between the role of a teacher and that of a student. The conventional teaching approach is not followed. No longer is a knowledge provider, the teacher there to give students guidance. No specific responsibility-sharing structure is prescribed. Through interactive discussions, all learners work together to establish consensus on learning objectives and solve common problems. The classroom is not the only place where collaborative learning takes place. The practice can be expanded to the entire society. Any place that allows learners to discuss and work with one another is appropriate for collaborative learning. In essence, collaborative learning researchers tend to employ the method of constructivism. So collaborative learning is in line with the approach of the “constructive teaching method” [2]. Whipple presents the following characteristics of collaborative learning: In the process of education, both the counsellor and the learner are active participants. There is no hierarchical difference between the counsellor and the learner. The group consensus needs to be established. Knowledge is constructed not directly transmitted. Knowledge is positioned as one of the five fundamental essences including the group [11].

### **3. Research Design and Method**

#### **3.1 Research Framework**

This study evaluates teaching achievement mainly through the quasi-experiment method. Before the experiment, both the experiment group and the control group received the pre-test on “the four math units of the Fall Semester of the Fourth Grade”. The four-week experimental teaching followed. After the experiment concluded, they received the posttest on “the four math units of the Fall Semester of the Fourth Grade”. The design of the experiment is shown in Table 1:

Teams	Pre-test	Handling of Experiment	Post- test
First Experiment Team	X	X1	X2
Second Experiment Team	Y	Y1	Y2
Control Team	Z	Z1	Z2

Table1. Brief Table of Experiment Design

X、Y、Z: both experiment team and control team take Pre-test.

X2、Y2、Z2: both experiment team and control team take Post-test.

X1: “Cooperative learning of online math games” is used by First Experiment Team to support math learning.

Y1: “Collaborative learning of online math games” is used by Second Experiment Team to support math learning.

Z1: Control Team uses traditional learning method

### 3.2 Cooperative Learning Interface

On the server-end screen there are three options including “those who have not form teams”, “teams that have been formed” and “teams that are calling” as shown in Figure 1. It is designed to enable the researcher to stay on top of student activities. On the user-end screen, the researcher designed a few control choices including the mechanism to call partners for team organization, the pull-down menu for selection of answers, the discussion mechanism for cooperative learning, and the teacher’s feedback when a wrong answer is given (see Fig.2). In this system, the questions are provided dynamically from the databank for the two students of each team to answer the two-step math questions with the one writing down the first step and the other writing the second step and the final answer.

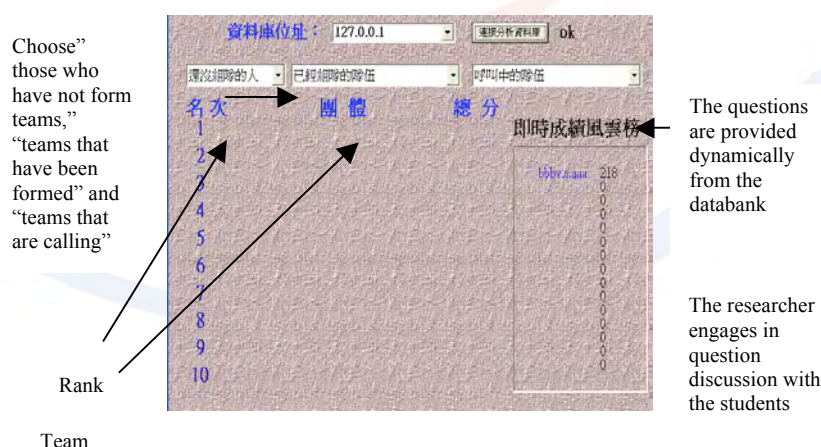


Fig1. Cooperative Learning Server-End Screen



Fig2. Cooperative Learning User-End Screen

### 3.3 Collaborative Learning Interface

On the server-end screen, the researcher can easily engage in question discussed with the students. The questions are provided dynamically from the databank, but the researcher in accordance with the students' status can present questions any time to give guidance. Staying fully aware of the students' activities, the researcher can intervene to provide assistance as shown in Figure 3. On the user-end game screen, the researcher designed a discussion screen similar to that of the server-end as shown in Figure 4. The main difference lies in the fact that the user-end interface has a common "vocabulary selection" button, which helps reduce typing difficulties and enhances students' confidence. Through the assistance of the number buttons, students are able to present the math expression in its entirety in the discussion zone for interaction with other learners and for completion of the question.

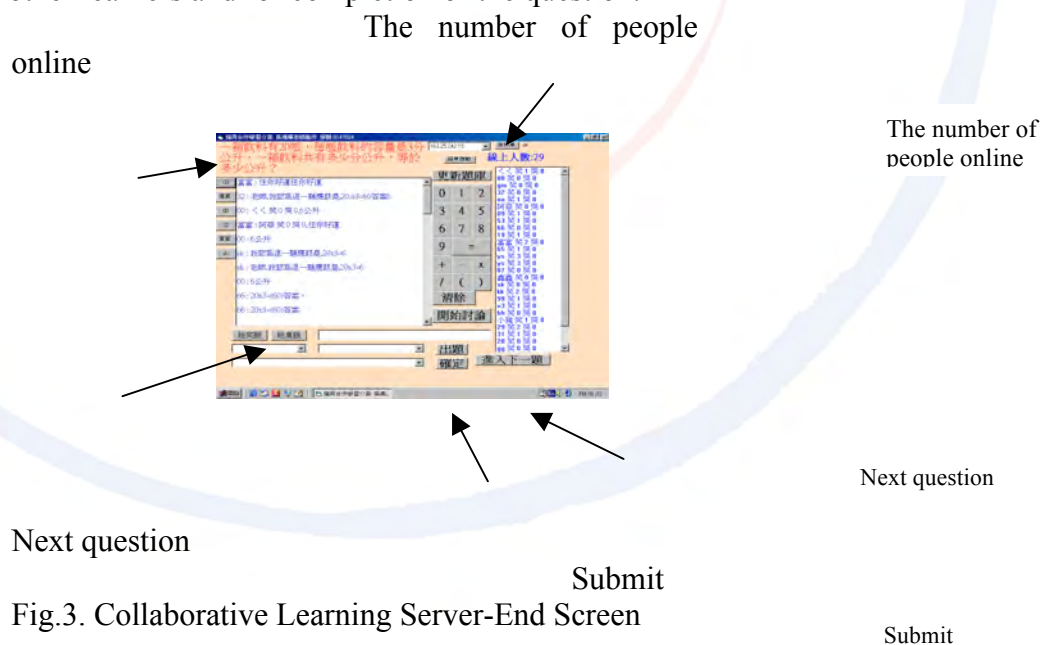


Fig.3. Collaborative Learning Server-End Screen



Fig.4. Collaborative Learning User-End Screen

Submit

## 4. Research Outcomes and Discussions

### 4.1 Analysis of the two types of teamwork CAL on math teaching achievements of the classes

According to Table 2, we have learned that the pre-test scores of the experiment group and the control group have not reached the significant level, so we can say there is no discrepancy between the two groups. According to the experiment framework, independent sample ANOVA is employed for the post test. Post test data analysis reveals the differences between the two experiment groups and the control group reach the significant level as shown in Table 3. Yet post-event analysis shows the difference between the two experiment groups has not reached the significant level as shown in Table 4. Experiment outcomes indicate the two CAL teamwork models are significantly superior to the traditional teaching approach.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	519.97	2	259.99	.67	.52
Within Group	33642.53	86	391.19		
Total	34162.50	88			

Table2. Pretest ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3159.64	2	1579.82	3.22	.05
Within Group	42138.80	86	489.99		
Total	45298.44	88			

Table3. Posttest ANOVA

(I) 1.Cooperative 2.Conventional 3.Collaborative		Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval for Difference	
(J) 1.Cooperative 2.Conventional 3.Collaborative					Lower Bound	Upper bound
1	2	10.59*	3.87	.01	2.91	18.28
	3	-3.60	3.89	.36	-11.33	4.13
2	1	-10.59*	3.87	.01	-18.28	-2.91
	3	-14.20*	3.83	.00	-21.81	-6.58
3	1	3.60	3.89	.36	-4.13	11.33
	2	14.20*	3.83	.00	6.58	21.81

Table4. Post-Event Comparison of Posttest ANOVA Pairwise Comparisons

Dependent Variable: Posttest:

Based on estimated argental means

\*. The mean difference is significant at the .05 levels.

a. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

#### 4.2 Covariance Analysis of Gender and Online Math Cooperation Models

The analysis indicates boys who participated in the collaborative model obviously outperform boys who went through the conventional teaching approach ( $p=0.05<0.05$ ). The mean score of the cooperative model is higher than that of the conventional teaching approach, but not by significant margin (Table 5). The result proves that through the collaborative model boys can make more significant progresses than their counterparts who go through the conventional teaching approach.

(I) 1.Cooperative 2.Conventional 3.Collaborative		Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval for Difference	
(J) 1.Cooperative 2.Conventional 3.Collaborative					Lower Bound	Upper bound
1	2	4.13	5.65	.47	-7.281	15.54
	3	-6.41	5.65	.25	-17.46	4.63
2	1	-4.13	5.65	.47	-15.54	7.28
	3	-10.54*	5.20	.05	-21.04	-3.97
3	1	6.41	5.45	.25	-4.63	17.46
	2	10.54*	5.20	.05	3.97	21.04

Table5. Posttest Analysis Paired Comparison of Boys of Different Teaching Models Pairwise Comparisons

Dependent Variable: Posttest

Based on estimated marginal means

\*. The mean difference is significant at the .05 level.

a. Adjustment for multiple Comparisons: Least Significant Difference (equivalent to no adjustments.)

Girls who participated in the cooperative model obviously outperform girls who went through the conventional teaching approach ( $p=0.004<0.05$ ); girls who participated in the collaborative model also obviously outperform girls who went through the conventional teaching approach ( $p=0.003<0.05$ ); yet the difference between the cooperative model and the collaborative model is not significant ( $p=0.333>0.05$ ) as shown in Table 6. It proves that the learning achievement of girls going through cooperative CAL or collaborative CAL is better than that of those going through the conventional teaching approach.

(I) 1.Cooperative 2.Conventional 3.Collaborative (J) 1.Cooperative 2.Conventional 3.Collaborative		Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval for Difference	
					Lower Bound	Upper bound
1	2	16.51*	5.48	.00	5.43	27.59
	3	-1.90	5.53	.73	-13.07	9.27
2	1	-16.51*	5.48	.00	-27.59	-5.43
	3	-18.41*	5.74	.00	-30.02	6.80
3	1	1.90	5.53	.73	-9.27	13.07
	2	18.41*	5.74	.00	6.80	30.02

Table6. Posttest Analysis Paired Comparison of Girls of Different Teaching Models Pairwise Comparisons

Dependent Variable: Posttest

Based on estimated marginal means

\*. The mean difference is significant at the .05 level.

a. Adjustment for multiple Comparisons: Least Significant Difference (equivalent to no adjustments.)

## 5. Conclusions

This study incorporates cooperative learning and collaborative CAL with elementary level math and allows two classes students participating in two types of cooperation. Following four weeks of game process, a data bank is employed to collect students' basic data in conjunction with analysis of students' pre-test, and post test scores and online survey questionnaires. In accordance with research objectives and the problems to be solved, this study analyzes "Learning Achievement of Different Classes", "Learning Achievement of Different Genders" as follows:

## 5.1 Learning Achievement of Different Classes

According to data analysis of this experiment we can prove that achievements of students who learn through cooperative CAL or collaborative CAL is significantly superior to that of the control group for which conventional teaching approach is employed. Yet the difference between the two has not reached the significant level. Thereby, we can say in the field of information-blended teaching, employment of cooperative CAL or collaborative CAL in math education is equally outstanding.

## 5.2 Correlation of Genders and Cooperative Patterns

Collaborative CAL is more suitable for boys. Data analysis indicates the collaborative CAL math games through online games; the boys outperform their counterparts that went through conventional teaching approaches. Their average score is also better than that of the cooperative learning pattern. Therefore, we can prove that boys are more suitable for collaborative CAL math games.

Both cooperative CAL and collaborative CAL are more suitable for girls: Data analysis indicates cooperative learning or collaborative learning through CAL online math games, the girls outperform their counterparts who went through conventional teaching approaches. Therefore, we can prove that girls are suitable for both cooperative learning and collaborative CAL math games.

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*The Development of Learning Process for the Hometown of Chachoengsao Province  
Phase 1, 2011, Thailand*

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The Asian Conference on Education 2012

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Abstracts

This research aims to 1) survey current situation and knowledge review of Chachoengsao Local Learning, 2) conduct teacher network for instruct and develop the Local Curriculum, 3) propose the ways to support Chachoengsao Local Learning. The research procedure was divided into 3 phases. The research samples were 330 schools in Chachoengsao area and 28 network schools. The data were analyzed by descriptive statistic and content analysis. Research results found that the enhancing factor of learning process for hometown could be built by school mechanism, teacher and school network, Local Administration Organization mechanism, and academic mechanism respectively ( $\bar{x}$  = 1.92, 1.45, 1.13, 0.61; SD = 0.78, 0.76, 0.79, 0.69), but lacks of systematic network process. Moreover, results of Local Learning instruction effects toward student mainly ( $\bar{x}$  = 1.94, SD = 0.62). The result from content analysis found that Chachoengsao knowledge modules were used in Local Learning and schools in Chachoengsao to develop Local Curriculum in 4 ways including 1) integrating into core subject units 2) constructing extra subject, 3) creating school activity, and 4) building school project.

Keywords: The Learning Development Process, Hometown, Chacheongsao Province, Local Learning Instruction

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## **Introduction**

National Economic and Social Development Plan No. 10 (2550-2554 BC) is vision was to develop a community peace (Green and Happiness Society) by the philosophy of adequate economics- along with the development of an integrated, holistic approach that is based on people-centered development seriously. To adopt the balancing, Equitable, and sustainable, the family strength is the important start of developing children and young people reflecting on the people-centered development.

The Thailand Research Fund (TRF) was established in response to the 1992 Research Endowment Act and although it is part of the government system, it lies outside the government administrative bureaucracy. This allows great efficiency in research support. Since its creation, TRF has remained focused on its main duty: supporting at both local and national levels the creation of a knowledge to help those tackling societal problems. TRF believes in the creation of a wisdom-driven society through the application of research-based knowledge. We believe that knowledge should be applied to develop the country's potential, to shape its future, and to create new local and national opportunities. TRF develops the knowledge construction processes, trains researchers, creates research systems, and building research networks to find appropriate solutions to the challenges in our society. We always aim to enhance the knowledge and wisdom in Thai society and to strengthen local communities, helping Thai society stands ahead of a changing world.

Many of the eastern province Chacheongsao is research projects have been supported by the Research Fund (TRF), coordinating with Ramajitti Institute has which develop researches in child and education, such as Eastern Child Watch, Innovative Family Education. Which is currently in phase 2, Development of children and the coexistence of people in a peaceful and compassionate society is in order to- enhance the learning development of the students and community, strengthen the local sense, and strengthen the local management networks which to create the (model development) associating with a suggested policy, also, linking research networks in the local-area, technology, information- together. Finally, it will enhance the skills of the people, and local communities in the management.

Data from the study showed that there is a few and interesting learning processes that in local levels, As in Chacheongsao, Learning Process for Hometown Development Phase 1, 2554" project is to promote the hometown sense of love and developments, and participation—This will lead to the development of systems and policies for children both in local and national following.

## **Research Question**

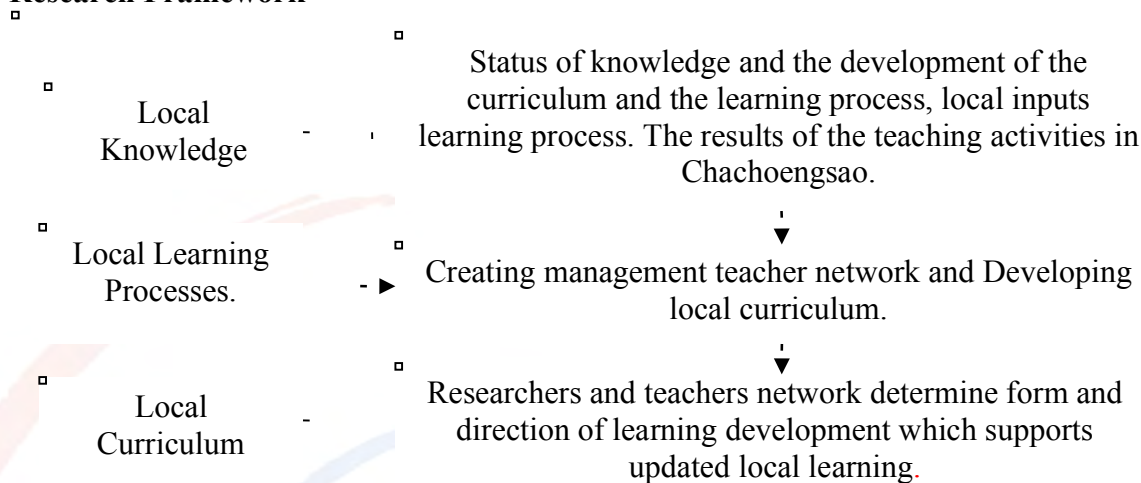
How to Development of Learning Process for Hometown of Chachoengsao Province.

## **Objectives**

This research aims to 1) Survey current situation and knowledge review of Chachoengsao Local Learning process , 2) Create teacher network for

instructing and developing the Local Curriculum, 3) Propose ways to support Chachoengsao Local Learning.

### Research Framework



### Methodology

#### Research Procedure

The research was divided into 3 phases: Phase 1: survey the area's data and Phase 2 : create research network and Phase 3 present the research framework. The sample used in this study were 330 primary and secondary schools in the province, 28 schools from teachers networks of management teacher of learning and development program. Using descriptive statistics and content analysis, the results showed that the supporting factors can occur mostly by the mechanism schools. The second is a network of schools and the teachers. Next is the mechanism of local organizations, and form department of mechanisms, respectively.

#### Data Collecting

Applied research and development (Research & Development) by merging the survey research and Needs Assessment. in the study population in the study areas : primary and secondary schools in the province, 330 schools which are 147 primary schools in first education area : 153 elementary school in second education area and 30 in secondary schools in the sixth education area province of the survey sample. The researchers selected a (purposive selected) sample-specific. The study population of 330 samples collected data by interviewing consisted of 1) the supervision and care of learning the local province 2) teachers, school administrators 3) government agencies and 4) student people in the province.

#### Research Instrument

Research instrument was a questionnaire "The Development of Learning Process for the Hometown of Chachoengsao Province" created by researchers and verified by experts. is divided into 3 parts including 1) the general context of the first two schools, exploring the situation and move on with the

development, Course curriculum of local schools with the three at the factors in the support process, 1) course curriculum of local schools 2) learning course of learning a local 3) the results of the learning program. Local learning and the Key Success Factors The Development of Learning Process for the Hometown of Chachoengsao Province.

### **Data collection Analysis**

The data were collected by at a questionnaire “The Development of Learning Process for the Hometown of Chachoengsao Province” The data was analyzed by the SPSS program. Then, researchers analyzed the general data by descriptive statistics, for instance, frequency, mean, standard deviation, and percentage.

### **Result**

#### **Levels of knowledge and learning about local movement.**

The results showed that the factors supporting the learning process to the native settlements can occur by the mechanism of most schools, the second is a network of schools and the teachers. Next is the mechanism of local organizations. Mechanisms of the Department, respectively ( $\bar{x} = 1.92, 1.45, 1.13, 0.61$ ;  $SD = 0.78, 0.76, 0.79, 0.69$ ) and found that the condition of the current lack of operating under the school network and teachers network in and out of school for learning local ( $\bar{x} = 1.06, SD = 0.78$ ) than that of performance on the learning of local results with participants mainly ( $\bar{x} = 1.94, SD = 0.62$ ) participated in the development of local learning. The local curriculum. The schools in the province. Local programs are developed into four frame : 1) integration of course, 2) units producing additional lessons 3) extra curricular activities, and 4) a school project, and also found the Chachoengsao produces lessons with its local knowledge. The survey found that, the course of the development of the province at least. The average performance was 1.28 ( $SD = 0.62$ ) and learning local implementation level increase slightly with the average performance was 1.43 ( $SD = 0.64$ ), the effects of the learning process. Local. Most operations. The average performance was 1.91 ( $SD = 0.61$ )

#### **The results of the network by the network of the second Test.**

Network meeting shows the four problems: 1) Policy: There is no definite frame work 2) Resource: there should be definite information 3) Preparation: tacks of cooperate schools and personals and there is no concrete knowledge set. 4) Collaboration: Lacks of collaboration from local admisitrators.

Under problems. Metioned, the research result in a moderate success in three areas: learners, learning processes, participation.

Local learning management currently enchanter both problems and successes. Therefore, in future plan, there are 2 levels of working process: policy level, and practical level.

### **Recommendations**

Research recommendations to 1) Executive Educational Administrator to develops education standards. 2) Administrators and teachers aware of the importance of local knowledge focusing on improvement of knowledge

management quality. 3) Schools provides supports for teachers to teach local knowledge.

### Acknowledgements

Project Development Grant (PDG) The research project has been supported. Variety of Supported projects by (TRF), Ramajitti Institute and Rajabhat Rajanagarindra University, Eastern Childwatch, Thailand.

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*The Study of Relation between Crisis Management and In-service Training*

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Abstracts

The aim of this research is to survey of relation between in-service training and crisis management. Hypothesis of this study is as follow: 1. There is relation between the short term in-service training and crisis management. 2. There is relation between long term in-service training and crisis management.

3. There is relation between kinds of in-service training and dimensions of crisis management cycle. Method of this research is Descriptive –Correlation. The instrument of this study is questionnaire and validity of the instrument was examined by 30 experts, and its reliability was calculated by Cronbach Alpha method proved 0.87. The population of this study includes 691 persons of managers and samples were chosen by the use of Morgan table and it comprised about 248 subjects. The gathered data were analyzed by using of descriptive statistics and inferential statistics including Pearson correlation test and Stepwise regression. Results showed that: 1. There is connection between short term in-service training and crisis management. 2. There is connection between long term in-service training and crisis management. 3. Short term in-service training has most correlation with first, second, fourth and fifth crisis management cycle.

**Key Words:** In-service training, crisis management, manager

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### **Introduction:**

A traditional view at the crisis management indicated that crisis management means putting out the fire. In other words, the crisis managers wait for things to go wrong and then try to limit the losses as a result of the crisis. However, recently, the perception in this area has changed. Based on the recent definition, there should be a collection of plans and practical programs for facing the probable future developments within the organizations and managers should ponder about the probable future happenings and attain the unpredictable events face to face (Soleimani, 2007). The new definition of crisis management means the process or procedure of prediction and prevention of the crises coming into existence, intervention in the crisis and improvement after the crisis has struck (Nasiri, 2007). In the definition of organizational crisis, There has to be a difference between the crisis and an unfortunate event. Brent has made a distinction between These two and he says crisis describes conditions in which the foots of the crisis could be problems or difficulties such as The inappropriate management activities and structure or a failure in conformity with a change. However, an unfortunate event means that an organization has faced sudden or unpredictable catastrophic changes in which it has little control.

In fact, Systematic approach, crisis is an event in which the order of the main system or portions of it have been disturbed and its stability has been compromised (Tajik,2000). The management and taming these crises require the training of managers.

Training is referred to any kind of activities or solutions that have been designed in advance for the purpose of creating learning for the learners and in this article, the relation between the on-the-job training and the marine crisis management will be analyzed (Seyf, 2007). William Mark He and Paul Tader state that their intentions are to teach the activity or a collection of activities that provide the necessary skill, knowledge and perception for the task.

Therefore, taking into account the necessity for teaching the crisis management, the purpose of this research is to analyze the relation between the short and long term training with the management crisis. For this reason, the following hypothesis have been taken into consideration

The hypothesis of the research:

- 1) There is a correlation between the short term in-service trainings and the crisis management.
- 2) There is a correlation between the long term in-service trainings and the crisis management.
- 3) There is a correlation between different kind, of (short and long term) in-service trainings and the different dimensions of crisis management.

### **What is a crisis?**

Crisis is an event that happens suddenly or gradually either naturally or unnaturally and it imposes some hardship on mankind. Crisis means falling apart, chaos, descriptive change (s), more than usual fragility, the threatening of human values, socio-political instability, military hostility etc.,(Gottschalk, J, 2004).Crisis means a situation in which the main disciplinary system of portions of it has been disrupted and its stability has been disturbed (Soleimani, 2007).

### **Crisis Management:**

Crisis Management is a collection of current systematic procedures that are interrelated which are defined for the identification of the analysis for facing and training crises by using management strategies and methods (Dorn Busch, 2011). Crisis management requires the integration of skills, training, abilities and specifications which allows a manager to design, respond and learn from the critical crisis (Brockner and James, 2010). Meanwhile, as the business environment changes and gets complicated increasingly, it is important for the manager to find skills that helps them in responding effectively to crises (Mitroff, 2001). Crisis Management is the anticipation in the crisis and its rehabilitation after the crisis has taken place.

### **The necessity of Crisis Management:**

Peter Darakar (1980) has considered the crisis period as a dangerous one and believes that the highest danger is ignoring the new ones and primarily he does not agree with what everybody believes. Of course, the chaos is a period full of possibilities and opportunities for those who have recognized the new facts and have taken advantage of it. During a crisis, the most prominent necessity is the existence of managers who face the realities and challenge the temptation of following what they know (Nasiri, 2007).

Crisis management is a process for facing a difficult condition for which all the planning, organization and group control activities including actions and reactions have been mobilized and have been at the disposal of managers who should take actions fast and without hesitation (Safavi, 2005). It is natural that the most important issue in running the organizations goes back to the management issue. One of the most important subjects in one's life is the occurrence of catastrophes, problems or mishaps that are referred to as crisis. These can cause disturbances in all the dimensions of the society. However, with having comprehensive training and organizing effective resources and leadership and, ultimately, an all-out control which sum up to be the successful management, it is possible to face the most destructive crises (James, 2008).

Crisis management without knowledge, awareness, and deep thinking of the organization's financiers about the crisis is impossible. Therefore, the existence of a common view and mentality about the crisis and the negative consequences is very important for an effective management and the organization of activities related to the crisis management. On the other hand, the views of different organizations' managers in a country affect the processes of helping and rescuing in accidents and incidents. That means that the more managers in a society are sensitive to crisis and its consequences, the more it is likely to witness improvement in the management of and the processes of help and rescue.

Anticipation of the necessity for wise co-ordination, a collection of efforts accompanied with the optimum use of the capacity of technical specialists whether financial or nonfinancial along with the planning process and utilizing a collection of programs and different operational activities in the past, during and after the crisis to the point that the result will be having the maximum efficiency and effectiveness of help and rescue is called Crisis Management (Geary, 2006).

### **Crisis in the Organization:**

A manager in an organization can have two kinds of approaches in regards to a crisis: one is the strategy for the prevention of Crisis management and the other is the reaction

to the crisis. Either of these approaches requires a certain kind of organizational and managerial reactions.

Type of organizational Crisis		Key Dimensions
Concentrate	Sudden	
Gradual, step by step	Fast	The speed of Expansion
Too often	Too little	The predictability of the prediction
Unclear	Concentrated	Being special
Uncertain	Clear	The recognition of crisis
Normal	Special	The moving spot
Increasing as the time passes	Time limitation	The possibility of occurrence
Several Type		The lack of Co-ordination with environment

Table 1-Types of organizational Crises

Woteen peri and James Hines have divided Crisis Management into five stages:

First stage: 1) recognition of the sign (s) 2) significance and measurement

Second stage: 1) prevention and preparation. 2) The organization's selling ideas and creativity.

Third stage: 1) sustaining damages 2) decision making, Connection and Taking risks.

Fourth stage: 1) recovery 2) organizations promotion and flexibility.

Fifth stage: 1) training 2) reflection.

The first stage requires the managers to recognize the first symptoms that declares the probability of the existence of a crisis. In the second stage, the managers are expected to prevent crises stage includes damage control and prevention of the damage to spill over other departments of the organization. The fourth stage includes recovery which means managers should help the organization to re-start the operations. The fifth stage encourages the crisis managers in the training division to analyze the lessons learned from the crisis (James and Woteen, 2008).

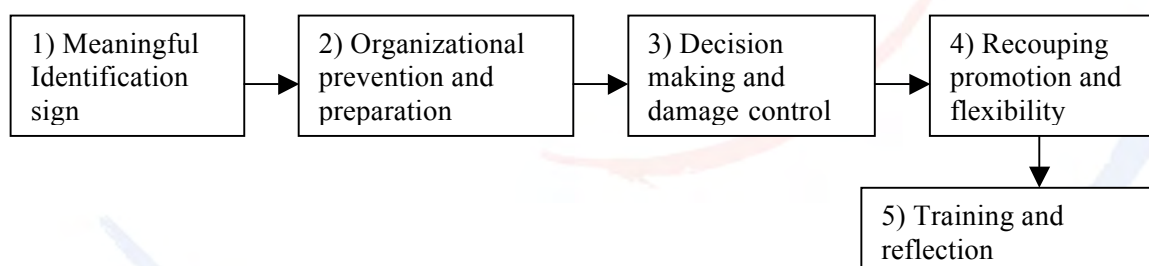


Table 2:The cycle of crisis management and managerial capabilities during the crisis (James and Woteen)

### In-service training:

On the job training is an experience based on learning and for the purpose of creating relatively permanent is an experience based on learning and for the purpose of creating relatively permanent changes in an individual so that he can improve himself in doing his duty (Toosi,2008).

Training the employees include a series of systematic operations with clear goals utilized for 3 purposes:

- 1) Increasing the employees awareness level
- 2) Increasing the employees' skills and their level of knowledge

3) Creation of desirable behavior compatible with the society's permanent values  
The employees' training includes increasing the employees' technical knowledge as such that they can do their duties fantastically and get ready for extra and more important responsibility (Fereydooni,2008).

#### **Short-term in-service Training:**

Short term in-service training is referred to trainings that last between a few weeks to a few months. The main philosophy of in-service Training is , in fact , based on planning these kinds of trainings because on the one hand these kinds of trainings are presented, precisely, in conformity with the job's duties and responsibilities and on the other hand, these types of trainings are essentially dependent on the employees' and the organization's definite needs(Adli,2008).

#### **Long-Term in-service Training:**

Long-Term in-service trainings are those types of trainings that time wise are expansive and secondly the result in receiving higher academic degrees. This type of organizational training are common in most Asian countries including Iran, Pakistan, Korea, Bangladesh, etc. For example, if there are some management courses at the, master's degree level and they employees receive an academic degree, we can, then call them long-term on the job training(Hejazi,2007).

The main goal of teaching or training the employees is education. Many organizations utilize many vast resources for the purpose of elevating the skills and abilities of their employees. The manager of one of the big companies believes deeply in education its employees. The employees of this company spend between two to four percent of their time at work in the classroom. Most of the trainings are done by the companies' managers and the goal is to teach the employees to find ways for finding resources for the company at the same time that they look for attaining rewards (Wang& Belardo,2005).

One of main goals in the training issues is to create the right attitude towards the organization's personnel and it is expected that after the end of the training course, the employees' attitude towards the organization will change in favor of a positive and effective co-operation with the organization and their mind will be shaped as such that they will support the organization's goals(Toosi,2008).

The following is Mr. Mir Kamali's version of the goals for training employees:

Item	Goal	Item	Goal
1	Improving performance	6	Achieving the right training and preparation for the creation of change in the organization
2	Revealing Information	7	Achieving technical and mental skills and learning about human relations
3	Job promotion	8	Orientation of the employees with the organization's goals
4	Solving problems	9	Effectiveness and Efficiency of the work force
5	Preparation for promotion	10	Co-ordination with scientific and Technological advances and changes

Table3-The Goals of Training Employees (Mir Kamali,2009)

### **Training and Crisis Management:**

Most managers are aware of the negative consequences in connection with an organizational crisis and insist on training as a method of appropriate reaction against crisis. Despite that many people ignore organizational crisis and this could be as a result of the lack of on-the-job formal training and experiences to enable managers how to manage crises. Managers who have succeeded to rescue their companies from certain crises such as marine crisis have demonstrated a group of complicated competencies that are as follows (Brockner and James, 2010).

1) crisis Identification 2) preparation and prevention 3) damage control 4)recoup 5) training.

In addition, crisis Management, finitely, requires managers to adopt a set of complicated competencies for an honest guidance of the company through the administration of different crisis Management strategies.

Training is a tool that helps crisis Management and identifies the strength or the ability of the Crisis Management, especially, in the operation of what has been done and the operational consequences, leadership and human resources when a crisis takes place (Wang and Belardo, 2005). Therefore, the argument is that the leaders and managers should be in charge of accepting responsibilities directly for the organization of an environment that conveys to the management an approach that is based on competency (James and Woteen, 2004). This includes the identification of vital tasks and activities that are needed during a critical situation, necessary skills and abilities for the successful completion of these activities and understanding the contents for conducting the Crisis Management strategies. The creation of such culture requires the multi-dimensional training that demonstrates both the competency of the management and the contents of the crisis. As a concentrated approach in the competency and the analysis of Crisis Management develops, it can lead to useful information for teaching the programs (Wang and Blardo, 2005).

Experiences attained as a result of crises coming into existence suggest that training and preparation are pre-request things for conducting successful operations and crisis control (Mitrof and Anagnos, 2001). Meanwhile, crisis can , by itself, be useful as an accelerator factor for a new thought for what is necessary for the organization and the crises, themselves, can be considered to be some kind of training programs (Brockner and James, 2010).

### **Method Of Research:**

Method of this research is Descriptive –Correlation. The population of the research included 691 managers who had, at least, 5 years management experiences (116 individuals from north and 575 from the southern parts of the country). In this research, sampling of a random method was utilized and the volume of the sample based on Morgan table was 248 individuals. 43 of them were from north (21 from Noshahr and 22 from Anzali). 205 people were from southern areas (130 from Bandar Abbas, 40 From Booshehr, 25 from Chahbahar and 10 from Khoramshahr). The tools of this research were questionnaires. Two questionnaires were prepared validity of the instrument was examined by 30 experts, and its reliability was calculated by Cronbach Alpha method proved 0.87. Ultimately, after assuring that the respondents had understood the questions and there was nothing wrong with the questionnaire, the final questionnaire was distributed.

Since the data in this research are at a distance level and the theories are based on parametric statistics, (Conformation of variances, the normality of the society and the distance among the variables) to attain the correlation among the variables, Pearson's correlative test was utilized. To determine the share of the variables in the related variables, Stepwise regression Was utilized. If Pearson's correlation is significant, to determine the share of the variables in the correlation variance, Regression can also be used.

### Findings:

First Theory: There is Correlation between the short-term in-service training and the crisis management.

	No	Mean	Correlation Rate	Significance
Short-term in-service training	248	26/16	0.47**	0.00
Crisis Management	248	156/31		

Table4- Correlation test between the two variables of Short-term in-service training and the crisis management

The correlation obtained from both variables of short-term in-service training and Crisis Management is equal to 47%. This correlation is significant and the first theory of the research with the accuracy of  $<0/01$  is confirmed.

Second theory: there is a correlation between the long-term in-service training and crisis management.

	Number	Mean	Correlation Rate	Significance Level
Long-Term in-service training	248	21.58	0.34**	0.00
Crisis Management	248	156.31		

Table 5- the correlation test between the two variables of long-Term in-service training and crisis management

The attained Correlation rate from both variables of long-term in-service training and crisis management is equal to 34% this correlation is significant and the second theory with the accuracy rate of  $<0.01$  is confirmed.

Third theory: there is a correlation between the two types of (short-Term and Long-Term) in-service training and the dimensions of the Crisis Management.

Crisis cycle Variables	First Cycle	Second Cycle	Third Cycle	Fourth Cycle	Fifth Cycle
Short-term in-service training	0.40**	0.36**	0.4/**	0.38**	0.39**
Long-Term in-service training	0.28**	0.28**	0.26**	0.25**	0.30**

Table 6-Correlation matrix of the types of in-service training and the dimensions of crisis management

As it is shown in chart 6, all the dimensions of the crisis management are in correlation with the levels of in-service training and the rate of attained correlation indicates that all of them at the significant level of  $\alpha = 0.01$  are acceptable. The strongest correlation is related to short-term in-service training and the third dimension of Crisis Management cycle ( $r=0.41$ ) and the least correlation is related to the long-term in-service training and the fourth cycle ( $r=0.25$ ).

### **Discussion and conclusion:**

The goal of this research, taking into account, the importance of the Crisis Management, is the recognition of organizational dangers and crises and the studying of (the short and long-term in-service trainings) and the Crisis Management. The results are as follows:

- 1) the analysis of the data indicates that at the accuracy level of 99%, there is a correlation between short-term in-service training and the Crisis Management.
- 2) The analysis of the data indicates that at the accuracy level of 99% , there is a correlation between the long- term in-service training and the Crisis Management.
- 3) The analysis of the data indicates that at the accuracy level of 99%, there is a correlation between the types of long and shortin-service training and the dimensions of Crisis Management.

Based on the first theory, taking into account the fact that short-term in-service training has the highest correlation with the Crisis Management and its cycles, it is recommended that short-term in-service training will be taken more seriously and the staff will be encouraged to participate in these trainings while the appropriate facilities are provided in this field.

In the new era, crisis has gone beyond its natural course and taken new social and organizational shapes such as strike, rebellion, sabotage, etc. In this direction, the important issue of the changing views is in correlation with the crisis. What is important in the changing views is not to be indifferent. In the new perception: the crisis can be tamed and controlled so that the least amount of damage will be inflicted to the social and organizational investments. Thus, crisis can be seen as a potential opportunity that is instrumental in experience-based learning: this is a process in which knowledge is created through the transfer of experience. In this process, paying attention to the experiences of others in the field of crisis and describing the results of the experiences in thoughts and actions can lead to the spread of knowledge in the field of crisis management.

One of main methods in dealing with crisis management is, having experienced and trained personnel in the organizations and considering the results of this research, we can say that training plays the main role in the management of natural and man-made crises in the organizations. The managers' dependence on-the control and crisis management having come into existence and the experiences of theirs and their personnel are the foundation of Crisis Management and when an organization's personnel enjoy different appropriate trainings, they will serve it with a lit more self-confidence. Since crisis puts in danger all kinds of investments such as people's physical and organizational investment and these damages inflicted on the organization

are irreversible, training is considered to be an investment and its accurate implementation results in the safeguard and the preservation of the organization. Thus, crisis are inevitable. Therefore, it is necessary for the wrong mentality in the field of crises to be stopped. For this purpose, prediction, recognition of factors, recognition of solutions and its training are interwoven and they should be presented at different levels of the organization in different training programs.

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The logo for the International Association of Business and Finance (iafor) is centered on the page. It features the word "iafor" in a light blue, lowercase, serif font. The text is enclosed within a circular frame composed of two concentric, hand-drawn style arcs. The outer arc is a light red color, and the inner arc is a light blue color, matching the text. The overall design is minimalist and professional.

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*Case Study: Students Perceptions of the Educational Environment of Basic Medical Science Program in Saudi Arabia*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

**Background:** The Basic Medical Science (BMS) program in the Faculty of Medicine at King Abdulaziz University, Saudi Arabia, has been recently established in 2009. It prepares the students for a "research assistant" profession. Students objected to the curriculum and timetable which are major determinants of our educational environment. In assessing perceptions of the environment, either qualitative (e.g. interviews, group discussions, observational techniques) or quantitative methods (e.g. The Dundee Ready Educational Environment Measure "DREEM") can be employed.

**Aim:** To identify the strengths, weaknesses and delivery methods of the current curriculum for urgent remediation and reestablishment of the curriculum.

**Methods:** Twelve female BMS students in total (from 2<sup>nd</sup> and 3<sup>rd</sup> year) participated in semi-structured interviews, focused-group discussions and DREEM during the academic year 2011- 2012.

**Results:** The total DREEM scores were 108/200 for the 2<sup>nd</sup> year and 96/200 for 3<sup>rd</sup> year BMS students. Academic self- perception was the lowest score (11/32) among the five domains for 3<sup>rd</sup> year compared to 17/32 for 2<sup>nd</sup> year. Perception of atmosphere deteriorated from 26/48 in 2<sup>nd</sup> year to 22/48 in 3<sup>rd</sup> year. Qualitative feedback was used for curriculum reconstruction not for statistical analysis of any findings. Short and long-term strategic plans were made to change the curriculum and timetable, by customizing the content to focus on its utility in their profession.

**Conclusion:** This is the first data on the perceptions of BMS students of the educational environment in our institution, which confirmed the existing limitations of our current curriculum and the importance of the outcome-based curriculum.

**Key words**

Educational environment, curriculum, Basic Medical Science, research assistant, Saudi Arabia, DREEM

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## **Introduction:**

The Basic Medical Science (BMS) major is the most recently established program since its introduction in 2009 to the Faculty of Medicine at King Abdulaziz University (KAU)-Jeddah, Saudi Arabia. It is a four years Bachelor degree, preparing the students for a “research assistant” profession. The educational program is based on an integrated curriculum, organized in blocks of teaching; core courses, problem based learning and student directed learning. The first three years focus on basic sciences and medical studies whereas the last year is for a research project. This curriculum was constructed mainly for medical students program. As a result, the curriculum did not meet the objectives and skills needed for their profession. In fact, there was no defined statement of the intended aims and objectives, outcomes, training structure and assessment system.

The major approach in teaching and learning is teacher centered. Although students take a part in tutorials, practical and PBL sessions, they still assume their teachers to provide information constantly. This was one of the reasons to introduce innovative and hands on approaches in their program. However, the aims of these approaches remain hard to accomplish as they were a remedial action to the complaints and signs of third year students' dissatisfaction with the educational environment. They had indicated through interviews that they perceived themselves to be "laboratory animal mice", when asked about the reform of the timetable and curriculum. In their opinion, both were defective in many aspects. The students' messages from the interviews and focused group discussions were taken seriously. Our great concern was that negative perception of third year students through interviews was resonated by second year students. This was a clear indication as studies show that educational environment affects student behaviors, achievements and satisfaction (Genn, 2001; Demirören *et al.* 2008).

Said *et al.* (2009) described educational environment as an interactive forces in the teaching and learning activities that influence learning outcomes which is strongly linked to the curriculum. Dent and Harden (2009) supported that by defining the learning outcomes as one of the 20 elements of an educational environment listed in (Table 1). Not having clear curriculum outcomes led us to consider the outcome based model. Steps therefore had been taken urgently. This was achieved by defining the qualities of the successful graduate, then find out how students attained those outcomes, and finally create learning opportunities for them. Not only that, we also took into consideration the "Hidden Curriculum" and started to involve them in social and academic activities which allowed them to build up their character and improve their progress.

**Table 1.** Elements of an Educational Environment

Teachers skills	Assessment methods
Classroom	Accommodation
Size of class	Food
Learning materials	Personal safety
Teaching methods	Transport availability
Timetable	Library
Social Life	Leisure facilities
A sense of belonging	Clinical experience
Student support	Access to computers
Clear learning outcomes	Study skills

We decided to undertake this case study which is a part of large longitudinal project for identifying and improving the quality of educational environment in our institution. The highly reliable diagnostic tool (DREEM) was used to measure how students actually perceive the educational environment in relation to our teaching goals. The evaluation has been an essential element in building a feedback from students to administration to teachers and from teachers to administration to teachers. As a result of that, good practices can be implemented, and identified weaknesses with unintentional negative consequences can be corrected instantly or in the next possible opportunity.

Therefore, our aim is to verify the perceptions of BMS undergraduates' of their educational environment and to diagnose the problems and find solutions for the short and long term. Hence, the study findings will be used as a foundation for the curriculum committee to make urgent reconstruction to the current curriculum. This will enhance the students life quality on campus in areas such as social atmosphere. It will also provide guidelines for teachers to improve their teaching skills.

### **Methods:**

#### **The program and the students**

Four 2<sup>nd</sup> year and eight 3<sup>rd</sup> year students participated in the study after voluntarily providing their consent. Demographic profiles for age, route of entry to the program, language preference and academic record were analysed.

Students enrolled on this program were from two categories based on their route of entry. The first group were "transferees" to BMS program. They were originally 3<sup>rd</sup> year medical students who did not succeed and had obtained all the chances to pass to next year. The second group consisted of students who chose BMS as a major and enrolled in the normal route. In our study, all 2<sup>nd</sup> year students were from the normal route of entry while 3<sup>rd</sup> year students from both routes of entry.

### Qualitative evaluation

A mixed-method approach was used to collect data. The method of qualitative evaluation (semi- structured interviews and focused group discussions) was taken from Denz-Penhey and Murdoch (2009). Those were conducted weekly from the beginning of the academic year 2011-2012. The evaluation was exploring issues related to curriculum and its delivery, assessment, methods of learning and teaching and the timetable. The interviews were planned to be less formal to give students and teachers unofficial feedback for their problems to be solved. Qualitative records were analyzed before conducting DREEM. Feedback was used for curriculum reconstruction, not for statistical analysis of any findings.

### Quantitative evaluation

The 50-item DREEM questionnaire (Roff *et al.*, 1997) was administrated in English by the end of the academic year 2011- 2012 with modifications in some items (shown in italic) to avoid confusion and to fit with our students' profession. We chose to use DREEM questionnaire as it has universal validity and high consistency with cultural non-specificity in different settings. Each item of the questionnaire is scored on a five-point Likert scale. Strongly agree=4, agree=3, unsure=2, disagree=1 and strongly disagree=0. Seven items are negative with reverse scoring. The higher score gives more positive reading. DREEM measures the students' perceptions in five domains, as follows:

	Items	max. score
(1) Learning	12	48
(2) Teachers	11	44
(3) Academic self-perception	8	32
(4) Atmosphere	12	48
(5) Social self-perception	7	28

The user can then describe the scores of the total score environment and of the five domains separately (Shenaz and Sreedharan, 2011).

After an explanation of the study purpose and objectives, students voluntarily completed the questionnaire anonymously. Aims of the research and the confidentiality of the results were explained on the front page.

### Statistical analysis

The domains scores were interpreted by the guide proposed by Roff *et al.* (1997). Statistical analysis of the data were expressed as a Mean for scores of categorized domains and of each item separately.

## **Results:**

### **Demographics**

There were 12 female participants in total from 2<sup>nd</sup> and 3<sup>rd</sup> year. The range of their ages on admission was 18 to 21 years. The participants' educational background was defined as:

- High school graduates whose route of entry was the normal route (all six students of 2<sup>nd</sup> year and five students of the 3<sup>rd</sup> year)
- Transferees from college of medicine (three students of 3<sup>rd</sup> year).

### **Interviews and focused group discussions results**

Students used to complaint during interviews and group discussions and then directly to the vice dean about the curriculum, mainly the clinical part. Timetable was another issue that they exclaimed about, especially that they were attending lectures with the corresponding medical students (2<sup>nd</sup> year with 2<sup>nd</sup> year medical students and 3<sup>rd</sup> year with 3<sup>rd</sup> year medical students). This made them feel inferior and not significant. Both years students have even questioned whether all this large volume of basic science information allow them to be well prepared for their profession as a research assistant, which they were not clear enough about from the start. They were also more specific in requesting helpful change within the curriculum, content overload, use of active learning and assessment instruments which tested generally factual and short term recall.

### **Overall DREEM scores**

Response rates for DREEM scale were for 2<sup>nd</sup> year: 4/6 (66.6 %) and for 3<sup>rd</sup> year: 8/8 (100%). Despite small numbers of participants, the DREEM picked up specific concerns. Table 2 represents the overall mean scores of BMS respondents with a higher score of 108/ 200 for 2<sup>nd</sup> year than 96/200 for 3<sup>rd</sup> year. The mean scores of the three domains (learning, teaching and social self-perception) for both years are about the same. However, the total mean score of the academic self-perception was the lowest (11/32) among the five domains for 3<sup>rd</sup> year compared to (17/32) for 2<sup>nd</sup> year. There was also a difference in perception of atmosphere decreased from the 2<sup>nd</sup> year (26/48) to (22/48) for the 3<sup>rd</sup> year. Interestingly, 3<sup>rd</sup> year identified "perception of learning" as the domain with highest mean score, whereas 2<sup>nd</sup> year gave highest scores to their "perceptions of learning", and "academic self-perceptions".

**Table 2.** DREEM Overall Scores for 2<sup>nd</sup> and 3<sup>rd</sup> Year

<b>DREEM</b>	<b>Perception of Learning</b>	<b>Perception of Teaching</b>	<b>Academic Self Perception</b>	<b>Perception of Atmosphere</b>	<b>Social Self Perception</b>	<b>Total Score</b>
<b>2<sup>nd</sup> Year</b>	24	26	17	26	15	108
<b>3<sup>rd</sup> Year</b>	25	24	11	22	14	96
<b>Maximum Possible Score</b>	48	44	32	48	28	200

### Item level mean analysis

This describes a scores range that determines the development level essential for each scale. Using these scores allow us to discover specific strengths and weaknesses in their educational environment. It will also provide a clear idea of the actual status between 2<sup>nd</sup> and 3<sup>rd</sup> year.

The mean scores analysis of the individual items, were as follows: mean scores 3 and above were considered as areas of strengths, mean scores between 2 and 3 were areas considered to be improved and 2 and below mean scores were areas of weaknesses.

Table 3 shows that 5 out of the 12 items of students' perceptions of learning were less than 2. Item 44 scored the highest (4) among all five domains, for 2<sup>nd</sup> year students which deteriorated to 2.5 for 3<sup>rd</sup> year students. However, there was a high value of 2.1 for 3<sup>rd</sup> year for item 47 compared to 0.8 for 2<sup>nd</sup> year.

**Table 3.** The mean item scores of 2<sup>nd</sup> and 3<sup>rd</sup> Students Perceptions of Learning

Item	Perception of Learning	2 <sup>nd</sup> year Mean Score	3 <sup>rd</sup> year Mean Score
1	I am encouraged to participate in class	1.5	<b>2.9</b>
7	The teaching is often stimulating	2.3	2.1
13	The teaching is student- centered	1.5	1.9
16	The teaching is sufficiently concerned to develop my competence	2	2.4
20	The teaching is well focused	2.3	1.6
22	The teaching is sufficiently concerned to develop my confidence	1.8	2.1
24	The teaching time is put to good use	2	1.9
25	The teaching over emphasizes factual learning	1	<b>1.5</b>
38	I am clear about learning objectives of the course	2.8	1.9
44	The teaching encourages me to be an active learner	<b>4</b>	2.5
47	Long term learning is emphasized over short term	<b>0.8</b>	2.1
48	The teaching is too teacher centered	2.3	2.1

\*Bold numbers showing the lowest and highest scores

\*Items in *italic* are with modifications

Both years showed positive perception of teaching as only 2 items in 2<sup>nd</sup> year and 1 item in 3<sup>rd</sup> year had a mean score of less than 2. Also, 2 items in 2<sup>nd</sup> year and 1 item in 3<sup>rd</sup> year had a mean score of 3 and the rest were above 2 in the areas that could be improved (Table 4). There was a similar score in both years for items 2, 9 and 18.

**Table 4.** The mean scores of 2<sup>nd</sup> and 3<sup>rd</sup> year Students Perceptions of Teaching

Item	Perception of Teaching	2 <sup>nd</sup> year Mean Score	3 <sup>rd</sup> year Mean Score
2	The teachers are knowledgeable	<b>3</b>	<b>3</b>
6	<i>Teachers implement a student centered approach to teaching</i>	2	<b>1.8</b>
8	<i>The teachers insult the students</i>	<b>3</b>	2.5
9	<i>The teachers are strict</i>	2.5	2.5
18	The teachers have good communication skills with students	2.3	2.3
29	The teachers are good at providing feedback to students	2.5	2.7

32	The teachers provide constructive criticism	2.8	2
37	The teachers give clear examples	2.3	2.1
39	<i>The teacher get angry in teaching sessions</i>	1.8	2.6
40	The teachers are well prepared for their teaching sessions	2.3	2
50	The students irritate the teachers	<b>1.5</b>	2.4

\*Bold numbers showing the lowest and highest scores

\*Items in *italic* are with modifications

When we looked in detail at Students Academic Perception and related items to students work in the past, we found that item 5 and 26 showed high difference in 3<sup>rd</sup> year. Besides, item 45 was the main determinant of the deterioration in this scale as it was the lowest score in both years. However, finding a relevant difference between 2<sup>nd</sup> and 3<sup>rd</sup> year in item 21 and 26 attracted our attention the most (Table 5). There seems to be a similar response and scores for both years to item 27. Although the score of item 10 was the highest for both years, 2<sup>nd</sup> year response seem to be more confident. They also perceived themselves as more prepared for their profession than 3<sup>rd</sup> year.

**Table 5.** The mean item scores of 2<sup>nd</sup> and 3<sup>rd</sup> Students Academic Self Perceptions

Item	Academic Self Perception	2 <sup>nd</sup> year Mean Score	3 <sup>rd</sup> year Mean Score
5	Learning strategies which worked for me before continue to work for me now	1.5	2.3
10	I am confident about passing this year	<b>3.3</b>	<b>2.6</b>
21	<i>I believe I am being well prepared for my profession</i>	2.3	0.6
26	Last year work has been a good preparation for this year's work	2.5	<b>0.4</b>
27	I am able to memorise all I need	1	1.3
31	I have learned a lot about empathy in my profession	2.8	2.1
41	My problem solving skills are being well developed here	2.8	1.6
45	<i>Much of what I have to learn seems relevant to the profession as a research assistant</i>	<b>0.5</b>	<b>0.4</b>

\*Bold numbers showing the lowest and highest scores

\*Items in *italic* are with modifications

This domain was of our main concern as it signifies the actual educational environment (Table 6). 2<sup>nd</sup> year students were more positive than 3<sup>rd</sup> year students with only 4 items out of 12 scoring less than 2. They seem to be more motivated and enjoying the program (the highest score= 3.3) compared to 3<sup>rd</sup> year (1.8) which makes sense from their response to item 42 with a score of 1.1. However, 2<sup>nd</sup> year students found it challenging to ask the questions they need. Both years seem to be positive regarding the atmosphere during teaching sessions, seminars and tutorials but they have negative experience with the timetable, 3<sup>rd</sup> year students were more concerned about that (the lowest score= 0.4).

**Table 6.** The mean item scores of 2<sup>nd</sup> and 3<sup>rd</sup> year Students Perceptions of Atmosphere

Item	Perception of Atmosphere	2 <sup>nd</sup> year Mean Score	3 <sup>rd</sup> year Mean Score
11	The atmosphere is relaxed during teaching	<b>1.5</b>	2
12	<i>The program is well timetabled</i>	<b>1.5</b>	<b>0.4</b>
17	<i>Cheating is a problem in these courses</i>	1.8	1.8
23	<i>The environment is relaxed during lectures</i>	2	1.8
30	There are opportunities for me to develop interpersonal skills	2.8	2
33	<i>I feel comfortable in teaching sessions socially</i>	3	<b>2.8</b>
34	The atmosphere is relaxed during seminars/ tutorials	2.3	2.5
35	I find the experience disappointing	2.5	1.5
36	I am able to concentrate well	2	2.2
42	<i>The enjoyment outweighs the stress of studying the courses</i>	2.2	1.1
43	The enjoyment motivates me as a learner	<b>3.3</b>	1.8
49	I feel able to ask the questions I want	<b>1.5</b>	2.2

\*Bold numbers showing the lowest and highest scores

\*Items in *italic* are with modifications

Only two items in this domain scored more than 3, item 15 (3.3) in 2<sup>nd</sup> year students and item 19 (3.1) in 3<sup>rd</sup> year students. However, this was not much supported by item 28 for 3<sup>rd</sup> year students as the score was less than 2. The mean score of 0.7 for item 3 was the lowest in this domain for 3<sup>rd</sup> year students as an indication of the pressure they experienced in comparison to 2<sup>nd</sup> year students with a score of 2.5.

**Table 7.** The mean item scores of 2<sup>nd</sup> and 3<sup>rd</sup> year Students Social Self-Perception

Item	Social Self Perception	2 <sup>nd</sup> year Mean Score	3 <sup>rd</sup> year Mean Score
3	There is a good support system for students who get stressed	2.5	<b>0.7</b>
4	<i>I am too tired to enjoy the program</i>	1.8	1.3
14	<i>I am rarely bored in this program</i>	2.3	2
15	<i>I have good friends in this specialty</i>	<b>3.3</b>	2.9
19	My social life is good	2	<b>3.1</b>
28	I seldom feel lonely	2.3	1.5
46	<i>My learning experience is pleasant</i>	1.3	2.5

\*Bold numbers showing the lowest and highest scores

\*Items in *italic* are with modifications

### **Discussion:**

Our 2<sup>nd</sup> and 3<sup>rd</sup> year BMS students were enthusiastic to attend interviews, group discussions and to complete DREEM, as they exploited this as the best chance to deliver their point of view. This in turn allowed us to see them closely throughout the academic year 2011-2012 giving their comments full attention.

DREEM was used in 'diagnosing' the educational environment. The overall mean score for DREEM for both years was lower than those reported in Roff *et al.* (2001) and Bassaw *et al.* (2003). Al-Hazimi *et al.* (2004) reported similar overall mean score (102/200) to ours for medical students at King Abdulaziz University.

In our study, there was no such difference between 2<sup>nd</sup> and 3<sup>rd</sup> year perceptions, apart from the atmosphere and academic self-perception with the lowest overall scoring domain (17/32 for 2<sup>nd</sup> and 11/32 for 3<sup>rd</sup> year). The 3<sup>rd</sup> year mean score of 0.4 for item 26 and item 45 were the lowest in the academic self- perception domain (Table 5). This confirmed the shortcomings of the current curriculum and supported the interviews and focused group discussions feedback. It indicated that the information delivered to them was not relevant to their profession. Based on this, it was our duty to take urgent action and build short and long-term strategies to enhance the educational environment. For the short term plan, we called for urgent meetings with the head of departments and coordinators of modules to make some changes in the curriculum and timetable and to customize the content. A reduction of the curriculum concerning medicine has been made focusing on its utility in their profession rather than only the acquisition of knowledge. We detached them from medical students and allocated a separate classroom for them. We organized significant extra curriculum activities such as BMS awareness day and Vaccine Day at KAU to assist them know more about their profession, develop their

confidence and skills, prepare them for the next level, motivate them and create a more relaxed atmosphere for learning.

The long term plan priority was restructuring the curriculum. By 2013/2014, the new benchmark curriculum will be applied. An outcome based curriculum was a strategy that could develop student centered learning. As there was no integration between courses, students faced difficulty in utilizing offered learning resources efficiently. Timetable based guide was devised to emphasize the student's day to day timetable, relating the outcomes to learning prospect.

As 3<sup>rd</sup> year students have perceived the educational environment as teacher centered, supported self-directed learning was needed. We managed to achieve this by several useful strategies. One of the most successful ones was peer to peer learning, where every student chose a topic in the virology course, prepared the materials in less than a week and presented it to her classmates. The rest of the students were then given a space to interact and ask questions and to evaluate the lecture and presenter at the end. One of the BMS students was the first to successfully peer teach medical students a lecture. Besides, some students were disciplined and took the responsibility to do some training during the academic year in research centers at KAU. Other strategy was achieved by guiding them of how to use their time in summer. We introduced them to summer training to raise their knowledge about research and hands on labwork. To our surprise they all wanted to do it voluntarily. Applying these strategies resulted in team-building spirit, better social and communication skills, high self-esteem, greater achievement and productivity.

The low mean scores of 2<sup>nd</sup> year students also agreed with the messages from the group meetings indicating they started to confirm similar negative perceptions. However, they specified that some of the subjects were adequately presented and were student centered.

Zawawi and Elzubier (2012) reported that "regardless of curriculum experienced, educational environments that do not provide student social and psychological support mechanisms are unfavorably evaluated". These findings reinforced our students' complaint of not having the support needed especially that the majority of 3<sup>rd</sup> year students were stressed and exhausted to enjoy the program (Table 7). This is unfortunately common to medical and other healthcare students based on the quantity and quality of the required information during their study years (Till, 2004). Staff limited awareness with essentials of the students learning experience was a challenge. Our remedial action for that was counseling sessions related to health issues and life management skills. 2<sup>nd</sup> year students on the other hand were less stressful as they might not have been in many stressful experiences of educational environment such as linking theoretical knowledge into practice.

Turning students' results into a strategic plan was therefore a challenge as our study was the first on this specialty in our university and no previous data available to compare with. Roff *et al.* (2001) showed significant differences between both Nigerian and Nepalese students from both gender who were significantly dissatisfied with their educational

environments. This comparison was not available in our study as the only 3<sup>rd</sup> year male student was not attending the classes.

We believe that students have the influence and the rights to be members of deciding boards. This can help as a base for longitudinal evaluation of students' perceptions for the considered improvements. Thus, the results of this work were applied in guidance, planning and focusing on the available resources. It is essential to acquire regular assessment and feedback to manage change successfully. Small number of our students was the most important limitation of our study. Evaluating the learning environment perception by a questionnaire holds the possibility of excluding some components. This will drive us to study our educational environment in depth.

### **Conclusion:**

DREEM has been a functional diagnostic tool in recognizing the limitations of the curriculum. Students perceived the educational environment as teacher-centered. They were not satisfied with the timetable and showed more factual learning and ineffective social support. Consequently, the outcome based curriculum, time schedule, the social, academic and psychological support methods have been the main domains of curriculum development and learning environment. Further studies are considered necessary in BMS specialty at our university to analyse the educational environment and identify any gender differences. Comparative study over time would be useful and it should be conducted with other universities in the region.

### **Practice points**

- Quantitative evaluations support qualitative evaluation feedback.
- Remedial action should take place in areas of concern.
- DREEM is an effective diagnostic tool as it indicates clearly the weaknesses in each perception.
- DREEM can guide in strategic planning.

### **Acknowledgments**

The authors acknowledge students of Basic Medical Science for their courageous contribution in this study. We are also grateful for Dr. Fatin Alsayes, the vice dean of college of Medicine for her continuous support and effort throughout the last year and the year to come. Our thanks go to Dr. M. Hasanein and Dr. H. Noaman from the medical education department for their help and guidance.

### **Declaration of interest**

No conflicts of interests were reported by the authors who take full responsibility of the content and the writing of this article.

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*The Effect of Academic vs. Non-Academic Extra-Curricular Activities on Creative Writing: The Study of Iranian EFL Learners*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

Having focused on the role that extracurricular activities play in making foreign language learners more aware of the creative writing, the present study was designed to address the important issue of the effect of extracurricular activities on intermediate EFL learners' creative writing in Iran. A thorough review of the related literature revealed the effect of these activities on psychological aspects of students' learning in addition to their academic achievement (e.g. Marsh 1992; Darling, Caldwell & Smith 2005). Meanwhile the literature on the probable effect of such activities on the development of language skills, specifically writing, and the analysis of this issue in the EFL context as Iran have not been well recorded. To conduct the research, 80 intermediate female Iranian second language learners who enjoyed high degree of homogeneity took part in the study in four equal groups. The quasi-experimental method was chosen in order to investigate the effect of homework writing and strategy oriented training as the academic extracurricular activities, and non academic extracurricular activities of sport type on creative writing of EFL learners. The results revealed that dealing with homework writing as an academic extra-curricular activity in addition to application of writing strategies highly affected creative writing of EFL learners; whilst participation in sports as an academic extra-curricular activity did not have a plausible effect on creative writing. The pedagogical implications of the findings can be used by material developers as well as ESL/EFL teachers to familiarize EFL learners with creative writing strategies, critical thinking processes, and self-esteem development in order to think and write more creatively.

**Key words:** Extra-curricular activities, Academic Extra-curricular Activities, Non-academic Extra-curricular Activities, Creative Writing

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## Introduction

ELT literature has recorded a number of known and unknown factors which may contribute to the success or failure of the learner in developing a second language. As far as the main concern of educationalists and parents is over learner's academic achievement, most of the teachers emphasize academic activities as a significant factor in learners' success (Broh 2002).

Within the domain of education, extra-curricular activities, which focus on academic areas, include the school newspapers, quiz team, science club, homework writing, and debate team or journalism club. These activities selectively can be helpful in improving students' knowledge in the second language (Navehebrahim & Ghani 2011). They help the learner to broaden his view towards learning a language other than his mother tongue. Responsibility taking, cooperation, and leadership skills developed in educational circumstances in which learners do the researches for debates and academic competitions could be somehow employed by the ELT practitioners in both ESL and EFL situations to help the learners develop a better linguistic command in the second/ foreign language they are dealing with.

On the other hand, non- academic extra-curricular activities can be categorized into various art or science clubs such as drama , photography, chess, and technology clubs. In addition, participation in sports, playing musical instruments, and parental involvement are among these activities.

In this regard, some scholars have divided extracurricular activities into formal and informal activities. Formal activities refer to structured programming like joining school sports groups or learning to play musical instruments. Informal activities include less structured activities such as watching TV. Literature on leisure studies has suggested that formal and informal activity settings have different influences on motivation and feelings of competence (Guest & Schneider 2003); While, Marsh & Kleitman (2002) believed that informal activities result in lower academic grades, poorer work habits, and poorer feelings of competence; while formal activities have inverse impact.

In a comprehensive study, Cooper, Valentine, Nye, and Lindsay (1999) also examined the relation between after-school activities and academic achievement as measured by standardized tests and teacher-assigned grades among students in grades 6 through 12. Using a questionnaire, adolescents reported approximately how much time they spent on homework, working at a job, extracurricular activities, structured groups outside of school, and watching television. Findings revealed that more time in extracurricular activities and less time in jobs and watching television were associated with higher test scores and grades. In addition, more time on homework was associated with better grades.

Focusing on sports participation, Jordan (2000) found that involvement in team and individual sports was positively related to GPA, general self-concept, and academic self-confidence. Eccles, Barber, Stone, and Hunt (2003) also found that participation in team sports, performing arts, and student government/school spirit clubs was positively related to grade point average and self-report of school enjoyment. In another recent study Fredricks and Eccles (2003) found that more time spent in school clubs was positively associated with school belonging and grade point average. While adolescents' after-school choices vary widely, current out-of-school time research often focuses narrowly on structured programs like Boys' and Girls' Clubs and organized sports. Structured sports programs receive attention because research has shown that participants benefit in a variety of ways, ranging from improved academic achievement to higher self-esteem (Feldman & Matjasko 2005).

Many researchers have investigated the effect of extracurricular activities on GPA of students; however, none of them have narrowed down this effect to one of linguistic skills like writing. Furthermore, there have been many researches examining the effect of many extracurricular activities (Brand 1987; Carrell 1984; Gerber 1996), but they did not make a comparison between the effect of two academic activities (homework writing and applying creative writing strategies) and non-academic one (participation in sports) on developing creative writing of the learners in an EFL context.

Having considered methods of conducting writing classes, we found that most of the teachers focus on mechanics and structure of writing while they do not develop learners' creativity in writing. Therefore, the present study aimed at determining whether the extra-curricular activities could promote EFL learners' creative writing and whether the type of the extracurricular activity (home work type or sports type) affects the concept referred to or not.

## **Methods**

### ***Participants***

The participants of the study were 80 fourth-grade female students of Iranmehr private primary school in Tehran, Iran. All these students studied general English as one of their main school subjects and they were in the forth level of English proficiency based on "Backpack Book series" published by Pearson Education which is equivalent to intermediate level for young English language learners. In this regard, they were familiar with sentence and paragraph structure and were capable of writing one paragraph composition. These participants were selected out of 120 ones who had taken part in the pre-test (which was a copy of YLE standard test) for the purpose of homogenizing the sample of the study. As a matter of fact these 80 participants had received the scores which were 1SD above and below the Mean. The subjects were divided into 4 groups of 20s as three experimental groups and one control group.

## ***Instrumentation***

The instrument used for the purpose of sample homogeneity was YLE(Young Learners English published by University of Cambridge, ESOL Examination) which is a reliable and consistent measure of how well children are doing in the skills of listening, speaking and reading and writing. The reading and writing test was used as a pre and post test to examine any changes in learners' performance after receiving the treatment.

The writings of the learners were scored employing the inter-rater method. This revealed how well they were familiar with the concept of creative writing before the treatment began. Reliability and validity of the test were taken into consideration as well.

To ensure that the participants went through sports and homework programs, and got familiar with what they actually did to improve their abilities; the learners all had been trained to present diaries and portfolios, while the parents had been briefed to write weekly reports to the teacher confirming, rejecting, or minimizing their daughter's reports. Actually the learners jot down their diaries and presented how well they had done the assigned exercises and homework. The parents also checked their daughters' writings and reports. Such activities are common in the primary schools especially in the famous and high-rank schools like Iranmehr School. Meanwhile the parents had been trained to deal with the activities more profoundly.

For the purpose of data analysis, both qualitative and quantitative data analyses instruments were employed and the main instrument employed was SPSS version 18 to calculate the ANOVA for comparing the mean scores of the four groups on the pretest and post-test of writing. Besides, the performance of the learners on both pre-test and post test of writing in each group was separately compared through running t-tests. Moreover, descriptive statistics of post-test of writing also was taken into consideration. At last, the learners' portfolios were also taken into consideration to see if they had been in line with the instructions given, the home work program, and the sport-activities they were supposed to take part in and read about.

## ***Procedure***

All 120 fourth grade students of Iranmehr language school took the pre-test (which was a copy of YLE standard test) in this study. 80 students whose scores had fallen 1SD above and below the mean were selected as the prime homogeneous participants of the study. The researchers conducted the treatment through the second semester of the educational year that took 4 months (each week 2 sessions and each session 90 minutes, altogether equal to 48 hours of instruction / treatment). All four groups of the learners were taking similar instruction for their ordinary writing courses; meanwhile each experimental group also took its own specific program:

- A. In the **Experimental Group 1**, the learners received extra-curricular activities of academic type in which they were supposed to work with watching films, reading story books, doing extra drills and exercises related to writing such as re-writing, summarizing, and writing daily diaries in English and the like.
- B. In the **Experimental Group 2**, the learners were supposed to deal with extra-curricular activities of non-academic type such as taking part in sport clubs, doing exercises, and reading and writing about sports they liked.
- C. The third group of the learners (**Experimental Group 3**), received instructions in terms of creative writing and were trained to be familiar with the most frequent strategies in developing creative writing. They were supposed to be familiar with critical thinking procedures, presenting novel ideas, focusing on the content organization, and the like.
- D. The fourth group received no extracurricular instruction and therefore was taken as the **control group**.

All the learners also were instructed to complete their portfolios in which they reported their diaries as well as their home work and their parents' reports. The parents also were briefed to cooperate with the teacher and since they all were educated ones had agreed to cooperate.

Following the instruction and treatment, all the participants took a test of writing. The learners' papers were scored by two raters considering the rubric for assessing creative writing including '*ideas & content, organization, voice, word choice, sentence fluency, and mechanics of writing*' (See the Appendix).

The learners' portfolios were also checked and analyzed throughout the experiment to ensure the validity and reliability of the research.

## ***Design***

The present study enjoyed a quasi-experimental design in which both qualitative and quantitative measures of data analysis were accounted for: There were four variables in this study: participation in athletics (non-academic extracurricular activity), homework writing (academic extracurricular activity), and strategy training (academic curricular-based activity) as **independent variables** and creative writing as the **dependant variable**. The researcher employed the quasi-experimental design in order to evaluate the effect of these extra-curricular activities on learners' creative writing. In sum the four groups went through the following procedures:

1. Group one received extracurricular activities in English writing in terms of home work as well as ordinary writing program of the course (Academic).
2. Group two received extracurricular activities in sports and physical education as well as ordinary writing program of the course (Non academic).

3. Group three received training in creative writing strategies as well as ordinary writing program of the course (Academic).
4. Group four received no extracurricular of any type (They only received ordinary course of writing).

## Results

### *Pre-test*

A one-way ANOVA was run to compare the mean scores of the four groups on the pretest of writing. As displayed in Table 1 the F-observed value of 2.12 ( $P = .103 > .05$ ) denotes that there were not any significant differences between the mean scores of the Homework Writing, Sports Taking, Strategy Learning and the Control groups on the pretest of writing. This represented that the four groups were homogeneous with regard to creative writing at the beginning of the study.

**Table 1: One-Way ANOVA Pretest of Creative Writing by Groups**

	Sum of Squares	D.F.	Mean Square	F	Sig.
<b>Between Groups</b>	<b>267.634</b>	<b>3</b>	<b>89.211</b>	<b>2.129</b>	<b>.103</b>
<b>Within Groups</b>	<b>3183.988</b>	<b>76</b>	<b>41.895</b>		
<b>Total</b>	<b>3451.622</b>	<b>79</b>			

Table 2 displays the descriptive statistics for the four groups on the pretest of creative writing test. The mean scores for the Homework Writing, Sports Taking, Strategy Learning and the Control groups on the creative writing test are 55.05, 53.87, 57.40 and 52.40 respectively.

**Table 2: Descriptive Statistics Pretest Creative Writing by Groups**

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	Min	Max
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					Lower Bound	Upper Bound		
<b>Homework</b>	20	55.05	6.90	1.54	51.81	58.28	45.00	72.00
<b>Sport</b>	20	53.87	5.49	1.22	51.30	56.44	45.00	65.00
<b>Strategy Takers</b>	20	57.40	6.63	1.48	54.29	60.50	44.00	69.00
<b>Control</b>	20	52.40	6.75	1.51	49.23	55.56	45.00	70.50
<b>Total</b>	80	54.68	6.60	.73	53.21	56.15	44.00	72.00

### *Post-test*

A one-way ANOVA was run to compare the mean scores of the four groups on the post-test of creative writing. As displayed in Table 3 the F-observed value of 10.98 ( $P = .000 < .05$ ) denotes significant differences between the mean scores of the Homework Writing, Sports Taking, Strategy Learning and the Control groups on the creative writing test.

**Table 3 : One-Way ANOVA Creative Writing by Groups (post-test)**

	Sum of Squares	D.F.	Mean Square	F	Sig.
<b>Between Groups</b>	3421.234	3	1140.411	10.989	.000
<b>Within Groups</b>	7886.738	76	103.773		
<b>Total</b>	11307.972	79			

Table 4 displays the descriptive statistics for the four groups on the creative writing test. The mean scores for the Homework Writing, Sports Taking, Strategy Learning and the Control groups on the creative writing post-test are 63.90, 60.35, 74.13 and 56.55 respectively. Graph 1 also displays the four groups' mean scores.

**Table 4: Descriptive Statistics Creative Writing by Groups (post-test)**

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min	Max
					Lower Bound	Upper Bound		
Homework	20	63.90	12.92	2.89	57.85	69.95	51.00	97.50
Sport	20	60.35	6.55	1.46	57.29	63.41	51.00	77.50
Strategy Takers	20	74.13	12.12	2.71	68.45	79.80	59.00	92.50
Control	20	56.55	7.64	1.71	52.97	60.13	41.50	76.50
Total	80	63.73	11.96	1.34	61.07	66.39	41.50	97.50

Although the F-value of 10.98 indicates significant differences between the mean scores of the four groups, the planned (a-priori) contrasts should be run in order to probe each research question. Based on the results displayed in Table 5 it can be concluded that:

**A:** There was a significant difference between the Homework Taking and Control groups on the creative writing test ( $t = 2.28$ ,  $P = .025 < .05$ ). The Homework Takers with a mean score of 63.9 outperformed the Control group on the creative test. Thus **the first null-hypothesis** as “homework writing as an academic extra-curricular activity does not affect creative writing of EFL learners” **was rejected**.

**B:** There was not any significant difference between the Sports Taking and Control groups on the creative writing test ( $t = 1.18$ ,  $P = .242 > .05$ ). Thus **the second null-hypothesis** as

“participation in sports as an academic extra-curricular activity does not affect creative writing of EFL learners” **was supported**.

**Table 5: Planned Contrasts**

Contrast	Value of Contrast	Std. Error	t	D.F.	Sig. (2-tailed)
Homework vs. Control	7.35	3.22	2.28	76	.025
Sports vs. Control	3.80	3.22	1.18	76	.242
Strategy Takers vs. Control	17.57	3.22	5.45	76	.000

**C:** There was a significant difference between the Strategy Taking and Control groups on the creative writing test ( $t = 5.45$ ,  $P = .000 < .05$ ). The Strategy Takers with a mean score of 74.13 outperformed the Control group on the creative test. Thus **the third null-hypothesis** as strategy taking as an academic extra-curricular activity does not affect creative writing of EFL learners **was rejected**.

### **Inter-Rater Reliability**

The inter-rater reliability for the two raters who rated the students writing papers is .94 ( $P = .000 < .05$ ). Based on these results it can be concluded that there is a significant agreement between the two raters on rating students' writing papers.

**Table 6: Inter-rater Reliability**

		RATER 2
RATER 1	Pearson Correlation	.946**
	Sig. (2-tailed)	.000
	N	80
**. Correlation is significant at the 0.01 level (2-tailed).		

To investigate if the instruction given has had any effect on the learners' performances in the three experimental groups, paired- samples t-tests were run and the three hypotheses were checked against them.

*R.Q. 1 Does taking homework have any significant effect on the improvement of the creative writing ability of the Iranian EFL learners?*

A paired-samples t-test was run to compare the homework takers' mean scores on the pretest and posttest of creative writing to probe if taking homework had any significant effect on the improvement of their creative writing ability. The t-value of 5.03 ( $P = .000 < .05$ ) indicated that the taking homework had significant effect on the improvement of their creative writing ability. Thus the null-hypothesis **was rejected**.

**Table 7: Paired-Samples T-Test Pretest and Posttest of Homework Takers**

Paired Differences					T	df	Sig. (2-tailed)
Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
			Lower	Upper			
8.85000	7.86414	1.75848	5.16947	12.53053	5.033	19	.000

*R.Q 2 Does taking sports have any significant effect on the improvement of the creative writing ability of the Iranian EFL learners?*

A paired-samples t-test was run to compare the sports takers' mean scores on the pretest and posttest of creative writing to probe if taking sports had any significant effect on the improvement of their creative writing ability. The t-value of 13.63 ( $P = .000 < .05$ ) indicated that the taking sports has significant effect on the improvement of their creative writing ability. Thus the null-hypothesis **was rejected**.

**Table 8: Paired-Samples T-Test Pretest and Posttest of Sports Takers**

Paired Differences					t	df	Sig. (2-tailed)
Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
			Lower	Upper			
6.47500	2.12426	.47500	5.48081	7.46919	13.632	19	.000

*R.Q.3 Does taking strategies have any significant effect on the improvement of the creative writing ability of the Iranian EFL learners?*

A paired-sample t-test was run to compare the strategy takers' mean scores on the pretest and posttest of creative writing to probe if taking strategies had any significant effect on the improvement of their creative writing ability. The t-value of 5.20 ( $P = .000 < .05$ ) indicated that the taking strategies had significant effect on the improvement of their creative writing ability. Thus the null-hypothesis **was rejected**.

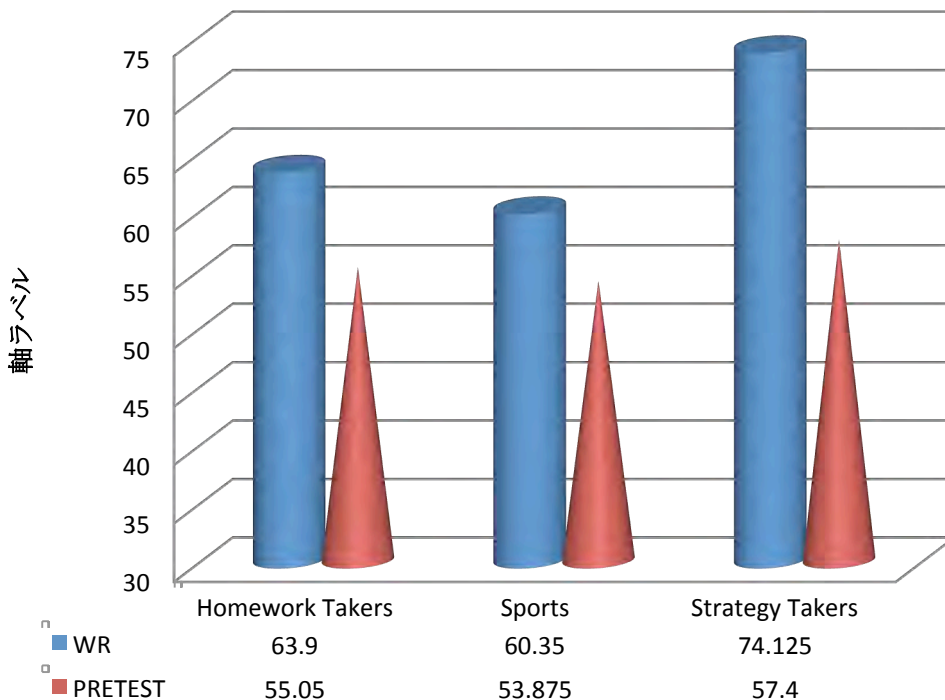
**Table 9: Paired-Samples T-Test Pretest and Posttest of Strategies Takers**

Paired Differences					T	df	Sig. (2-tailed)
Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
			Lower	Upper			
16.72500	14.36596	3.21233	10.00152	23.44848	5.207	19	.000

Graph 1 displays the mean scores of the Homework; Sports and Strategies takers' mean scores on the pretest and posttest of creative writing.

**Graph 1: Pretest and Posttest of Creative Writing by Groups**

□



It seems that all the variables under the study have proved significant as they all have helped the learners to develop their creative writing, though not in the advanced levels.

An interesting point revealed through statistics was that the comparison between the mean scores of the sport participants and that of the control group in the post-test of creative writing does not show that much significant difference while the comparison of means (t-test) of sport participants in both pre and post tests of writing presents a significant difference. Therefore we can conclude that sport based activities also have affected the development of creative writing among the learners; meanwhile this difference is not that high.

### ***Portfolios***

Regarding the portfolios of the learners, the researcher carried out a qualitative analysis of the data via employing both “**open coding**”, in which categorization of the information loaded on the data was accomplished each and every session of the classroom, and “**axial coding**”, in which the core concept of each group categorized in the “open coding” section was concentrated on. The last, third part of the analysis was seeking for continuous structuring, where the logical relationships between the core concepts (axial codes) were sought for through covering the portfolio of the learners.

Analyzing the participants' portfolios revealed that learners mostly were in line with the informed procedure of the research and parents also had taken enough care to help the students complete their homework almost orderly. Fortunately all of the parents of the students who had taken part in the study were educated individuals and therefore were highly helpful in that they took the research and their daughters' activities seriously and tried to be in close contact with the researcher. This energized the assurance towards the learners' process-based orientation of learning, especially about the sport-participants group.

## Discussion

The statistical analysis revealed that the **first null-hypothesis** as “dealing with homework writing as an academic extra-curricular activity does not affect creative writing of EFL learners.” **was rejected**. The results obtained via the ANOVA which was run to compare the means of the scores obtained by the learners in the control and the three experimental groups suggested that doing homework as an academic extra-curricular activity highly affected creative writing of EFL learners. Based on these results it can be concluded that there are significant differences between the mean scores of the homework group and the control group post-test of creative writing. The finding of the first research question is in line with the ideas asserted in the literature in the ESL situation (Beck 1999; Brown & Herrity 2001; Halpern1992) which provide support for using homework programs to build self-esteem of the learners and lead them towards creativity, while also finding that self-esteem can be a predictor of academic performance. The researchers cited above found that participation in an after-school academic oriented program such as watching a film, listening to a story, summarizing the talks and the like designed to build self-esteem in the learners had positive effects on the learners' standardized test scores in English writing and reading. The fact is that allotting extended school time to complete their homework did not have the same positive effects on self-esteem or achievement of the same learners.

The findings of the first research question of the present study, however, is not in line with the idea presented by some other scholars (Morrison, Storino, Robertson, Weissglass, Dondro 2000; Shin 2004) who are against the presentation of after-school academic activities such as homework extracurricular of writing. Such scholars believe that the non-academic after-school activities are more preferred in an attempt to increase the performance of the second language learners.

Concerning the second null hypothesis, the statistical analysis proved that there was not any significant difference between the Sports Taking and Control groups on the creative writing test ( $t= 1.18$ ,  $P = .242 > .05$ ). Thus **the second null-hypothesis** as “participation in sports as an academic extra-curricular activity does not affect creative writing of EFL learners” **was supported**.

This means that the after-school non-academic extracurricular activities of the learners who had taken sport club experiences and even had covered materials on sports in English were not revealed to be significantly meaningful in developing the learners creative writing. Meanwhile the t-test run to compare the mean differences between the pre-test and post-test of sport-group participants revealed that they have improved in their creative writing. This means that the sport takers also have developed some mechanisms of the creative writing; meanwhile these developments have not been that comparable to the achievements of the other two groups (homework takers & strategy-takers).

The findings of the second research question then partially reject the idea presented by some scholars (Eccles et al. 2003; Feldman & Matjasko 2005; Fredricks & Eccles 2006; Jordan 2000) in respect of extracurricular non-academic programs to develop the writing creativity in the second language learners. Morrison, et al (2000) have found that after-school academic tutoring or homework assistance may not result in an improvement in academic performance, but, rather, prevent a decline in performance that is evidenced by many at-risk youth. The extracurricular activities such as watching television programs were connected to cognitive development of students (Shin 2004). The amount and quality of television viewing and family involvement were not the only influences of helping at risk students. The effects of music and sports were highly influential in their relation to the prevention of this decline.

Though the ideas presented by these scholars cannot be neglected, it seems that within the scope of a Foreign Language context like that of Iran, the extracurricular of non-academic type is not that effective for the learners. It might partially have its origin in the local culture and the lack of enough exposure to the real world.

The result of the ANOVA and the descriptive statistics for the sport taker group and the control group on the creative writing also proved that the students in the sport taker group presented low performance as if they had not taken any valuable experience affecting their creativity in writing. This means that the learners have not been able to perform well, despite the fact that they have been trained how to deal with the task throughout the treatment. The reason probably lies in the learners' inattentiveness to learning while they are dealing with extracurricular activities even if these activities are in the second language they are developing. Another reason could be sought in the learners' ever experienced situation of learning and teaching which has not prepared them towards critical thinking, developing cognitive abilities, and writing creatively in their mother tongue, Persian.

Concerning **the third research question** the ANOVA run as well as the descriptive statistics revealed that there was a significant difference between the Strategy Taking and Control groups on the creative writing test. In fact the Strategy Takers outperformed the Control group on the

creative writing test. Thus **the third null-hypothesis** as “strategy taking as an academic extra-curricular activity does not affect creative writing of EFL learners” **was rejected**.

This means that helping the learners getting familiar with the creative writing strategies can be highly helpful. According to Hsiao and Oxford (2002), strategies can “pave the way toward greater proficiency, learner autonomy, and self-regulation” (p. 372). Therefore, it is necessary to employ creative writing strategies so that ESL/EFL learners can easily facilitate their writing. However, as Hsiao and Oxford (2002) noted, “exactly how many strategies are available to learners to assist them in L2 learning and how these strategies should be classified are open to debate” (p. 368). Victori (1995) also found that creative writing could be energized in case the learners’ awareness towards them is highlighted in advance. Of course these findings somehow support the concepts of noticing theory (Schmidt, 2001) and conscious raising theory (Ellis, 2003).

## Conclusion

Having aimed at contributing to world of ELT in Iran and focusing on the role extracurricular activities (whether academic or non academic) play in making foreign language learners more aware of the target language creative writing, the present study was designed to address the important issue of extracurricular academic versus non academic activities on intermediate EFL learners’ creative writing in Iran. A thorough review of the related literature revealed that introducing extracurricular activities of both academic and non academic types has proved well in the development of self-esteem, cognitive learning, and relief taking for the primary school students, and this in turn has affected their academic achievement in math, science, and technology. Meanwhile the literature on the effect of such activities on the development of language skills, specifically writing, and more specifically creative writing has recorded poor.

Having analyzed the data collected by examining all four groups, it was concluded:

1. Dealing with homework writing as an academic extra-curricular activity highly affects creative writing of EFL learners.
2. Participation in sports as an academic extra-curricular activity does not that much affect creative writing of EFL learners.
3. After-school non- academic extracurricular activities may not result in an improvement in academic performance, but, rather, prevent a decline in performance that is evidenced by many at-risk youth.
4. Strategy taking as an academic extra-curricular activity highly affects creative writing of EFL learners.

Considering the fact that Iranian students are dealing with English as a foreign language, the researcher might feel in ease to propose that extracurricular academic homework and applying creative writing strategies can be more effective than the conventional method of teaching writing to the learners. On the other hand, it seems that within the scope of a Foreign Language

context like that of Iran, the extracurricular of non-academic type is not that effective for the learners. It might partially have its origin in the local culture and the lack of enough exposure to the real world.

The logo for the International Association for the Advancement of Pedagogical Research (iafor) is centered in the background. It features the word "iafor" in a light blue, lowercase, serif font. The text is enclosed within a circular frame composed of two concentric, hand-drawn style arcs. The outer arc is a light red color, and the inner arc is a light blue color, matching the text.

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## Appendix

### Six Traits Writing Rubric

	<b>6 Exemplary</b>	<b>5 Strong</b>	<b>4 Proficient</b>	<b>3 Developing</b>	<b>2 Emerging</b>	<b>1 Beginning</b>
<b>Ideas &amp; Content</b> ✎ <i>main theme</i> ✎ <i>supporting details</i>	<ul style="list-style-type: none"> <li>Exceptionally clear, focused, engaging with relevant, strong supporting detail</li> </ul>	<ul style="list-style-type: none"> <li>Clear, focused, interesting ideas with appropriate detail</li> </ul>	<ul style="list-style-type: none"> <li>Evident main idea with some support which may be general or limited</li> </ul>	<ul style="list-style-type: none"> <li>Main idea may be cloudy because supporting detail is too general or even off-topic</li> </ul>	<ul style="list-style-type: none"> <li>Purpose and main idea may be unclear and cluttered by irrelevant detail</li> </ul>	<ul style="list-style-type: none"> <li>Lacks central idea; development is minimal or non-existent</li> </ul>
<b>Organization</b> ✎ <i>structure</i> ✎ <i>introduction</i> ✎ <i>conclusion</i>	<ul style="list-style-type: none"> <li>Effectively organized in logical and creative manner</li> <li>Creative and engaging intro and conclusion</li> </ul>	<ul style="list-style-type: none"> <li>Strong order and structure</li> <li>Inviting intro and satisfying closure</li> </ul>	<ul style="list-style-type: none"> <li>Organization is appropriate, but conventional</li> <li>Attempt at introduction and conclusion</li> </ul>	<ul style="list-style-type: none"> <li>Attempts at organization; may be a “list” of events</li> <li>Beginning and ending not developed</li> </ul>	<ul style="list-style-type: none"> <li>Lack of structure; disorganized and hard to follow</li> <li>Missing or weak intro and conclusion</li> </ul>	<ul style="list-style-type: none"> <li>Lack of coherence; confusing</li> <li>No identifiable introduction or conclusion</li> </ul>
<b>Voice</b> ✎ <i>personality</i> ✎ <i>sense of audience</i>	<ul style="list-style-type: none"> <li>Expressive, engaging, sincere</li> <li>Strong sense of audience</li> <li>Shows emotion: humour, honesty, suspense or life</li> </ul>	<ul style="list-style-type: none"> <li>Appropriate to audience and purpose</li> <li>Writer behind the words comes through</li> </ul>	<ul style="list-style-type: none"> <li>Evident commitment to topic</li> <li>Inconsistent or dull personality</li> </ul>	<ul style="list-style-type: none"> <li>Voice may be inappropriate or non-existent</li> <li>Writing may seem mechanical</li> </ul>	<ul style="list-style-type: none"> <li>Writing tends to be flat or stiff</li> <li>Little or no hint of writer behind words</li> </ul>	<ul style="list-style-type: none"> <li>Writing is lifeless</li> <li>No hint of the writer</li> </ul>
<b>Word Choice</b> ✎ <i>precision</i> ✎ <i>effectiveness</i> ✎ <i>imagery</i>	<ul style="list-style-type: none"> <li>Precise, carefully chosen</li> <li>Strong, fresh, vivid images</li> </ul>	<ul style="list-style-type: none"> <li>Descriptive, broad range of words</li> <li>Word choice energizes writing</li> </ul>	<ul style="list-style-type: none"> <li>Language is functional and appropriate</li> <li>Descriptions may be overdone at times</li> </ul>	<ul style="list-style-type: none"> <li>Words may be correct but mundane</li> <li>No attempt at deliberate choice</li> </ul>	<ul style="list-style-type: none"> <li>Monotonous, often repetitious, sometimes inappropriate</li> </ul>	<ul style="list-style-type: none"> <li>Limited range of words</li> <li>Some vocabulary misused</li> </ul>
<b>Sentence Fluency</b> ✎ <i>rhythm, flow</i> ✎ <i>variety</i>	<ul style="list-style-type: none"> <li>High degree of craftsmanship</li> <li>Effective variation in sentence patterns</li> </ul>	<ul style="list-style-type: none"> <li>Easy flow and rhythm</li> <li>Good variety in length and structure</li> </ul>	<ul style="list-style-type: none"> <li>Generally in control</li> <li>Lack variety in length and structure</li> </ul>	<ul style="list-style-type: none"> <li>Some awkward constructions</li> <li>Many similar patterns and beginnings</li> </ul>	<ul style="list-style-type: none"> <li>Often choppy</li> <li>Monotonous sentence patterns</li> <li>Frequent run-on sentences</li> </ul>	<ul style="list-style-type: none"> <li>Difficult to follow or read aloud</li> <li>Disjointed, confusing, rambling</li> </ul>
<b>Conventions</b> ✎ <i>age appropriate, spelling, caps, punctuation, grammar</i>	<ul style="list-style-type: none"> <li>Exceptionally strong control of standard conventions of writing</li> </ul>	<ul style="list-style-type: none"> <li>Strong control of conventions; errors are few and minor</li> </ul>	<ul style="list-style-type: none"> <li>Control of most writing conventions; occasional errors with high risks</li> </ul>	<ul style="list-style-type: none"> <li>Limited control of conventions; frequent errors do not interfere with understanding</li> </ul>	<ul style="list-style-type: none"> <li>Frequent significant errors may impede readability</li> </ul>	<ul style="list-style-type: none"> <li>Numerous errors distract the reader and make the text difficult to read</li> </ul>

*Adapted for Regina Public Schools from Vicki Spandel, Creating Writers*

*The Use of Unqualified Science Teachers in Developing Countries: A Barrier to  
Achieving Sustainable Global Education*

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0603

The University of Waikato, New Zealand

The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

Developing countries are under huge pressure from the international community to implement conventions such as the United Nations Millennium Development Goals, with high priority given to achieving goals such as quality education for all students by 2015. Not surprisingly the response to this pressure has been an increase in student enrolment in schools, but in some developing countries, particularly in South Africa and Sub-Saharan Africa, this response has been accompanied by the employment of unqualified teachers to reduce the student-teacher ratio. This study investigated the professional knowledge of unqualified science teachers' working in Tanzanian secondary schools, especially their pedagogical content knowledge (PCK). Within a case study approach, this interpretive investigation used qualitative data gathering methods such as semi-structured interviews, classroom observations and analysis of teachers' artefacts and the generated data were analysed thematically. The results showed that licensed science teachers have underdeveloped PCK components and do not understand the learner-centred teaching methods. Unqualified science teachers in their classroom practices typically displayed passive teaching styles that promote rote learning and memorization of facts. These findings imply that students taught by unqualified science teachers tend to develop lower level cognitive skills and knowledge compared to students that are educated by qualified teachers. Arguably, the use of unqualified teachers is a barrier to achievement of sustainable global education that is not being acknowledged and addressed by the international community. The study recommends there is a need to enhance unqualified licensed science teachers PCK.

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## Introduction

Education is recognized worldwide as a basic human right with the goal of education for every child among the top priorities for achievement on the agenda of the international community. For example, Article 28 of United Nations Convention on the Rights of the Child United Nations Educational Scientific and Cultural Organization (2007) states that “the right to education on the basis of equality of opportunity ... needs to be realized through provision of compulsory and free primary education, and available and accessible secondary education” (p. 118). Numerous developing countries like Tanzania have ratified such international conventions on education for all including the *Jomtien World Declaration on Education for All* in 1990, followed 10 years later by the *Dakar Framework of Action for Education for All* and the *United Nations Millennium Development Goals* (MDGs) in 2000. All these conventions require developing countries to achieve universal primary education by 2015 that includes at least 75% of their young population having access to quality secondary education (2007, United Nations Educational Scientific and Cultural Organization, 1990). However, for developing countries achieving the dream of quality education for their citizens is particularly difficult because of barriers such as inadequate budgets for financing education, large class sizes and most challenging of all is inadequate supplies of qualified teachers (Levin et al., 2004). Teachers are key players in achieving quality education particularly in bringing about reforms as Article 69 of the Dakar Framework of Action recognises:

Teachers are essential players in promoting quality education, whether in schools or in more flexible community based programmes; they are advocates for, and catalysts of, change. No education reform is likely to succeed without the active participation and ownership of teachers. (United Nations Educational Scientific and Cultural Organization, 2000)

The Education for All (EFA) and Millennium Development Goals (MDGs) campaigns have successfully improved pupils' enrolment in elementary education in developing countries, but they have also created demand for secondary education opportunities for students graduating from elementary schools. Increased students rolls in the secondary sector have presented an unexpected challenge for many developing countries because they have in turn created another unforeseen problem, that of teacher shortages. As a result, numerous developing countries are forced to recruit unqualified teachers to curb the teacher shortage in schools because their pre-service teacher education institutions do not have the capacity to train adequate teachers to staff all schools (Education International, 2009).

According to Millward (2006) and Saroj (2009), Sub-Saharan Africa needs almost four million new teachers by 2015 to fill the available positions in schools for the growing education sector with the six Sub-Saharan countries of Ghana, Kenya, Uganda, Malawi, Senegal and Zambia needing approximately 400,000 of those new teachers to meet the demands of their growing school rolls (Audrey-marie and DeStefano, 2008). Likewise, Asia Pacific countries also face the shortage of qualified teachers in rural areas particularly in science, mathematics, English and Information and Communication Technology subjects. For example, Thailand had shortage of 121,545 teachers for secondary schools; Lao PDR about 5,595 teachers they have basic

schooling than their students, Malaysia has 829 contract and uncertified teachers and India has more than 670,000 untrained teachers to mention a few (Gannicott, 2009, Global Campaign for Education, 2012). Tanzania like many other developing countries in Africa is not immune to the teacher shortage crisis in secondary schools. Lujara, Kissaka, Trojer, and Mvungi (2006) reported that urban Tanzanian secondary schools have a 60% shortage of qualified science and mathematics teachers, while rural secondary schools are 80% short of qualified science and mathematics teachers.

To address the shortfall in teachers, governments in different countries have responded by adopting both long-term and short-term strategies. The literature (Santiago, 2002, Education International, 2011, Even and Leslau, 2010) reports that commonly used strategies to address teachers shortages include:

- alternative routes of entry into the teaching profession or licensing of under-qualified/unqualified candidates;
- improving working conditions to attract qualified teachers who have retired from teaching;
- using a distance learning approach; and
- developing special loans and scholarships for those entering the teaching profession from other fields.

Of these options, the alternative route of entry or licensing unqualified/under-qualified candidates into the teaching profession appears to be the most popular short-term strategy in developing countries for increasing number of teachers. Alternative routes to teacher recruitment usually (but not always) refer to the recruitment of college/university graduates who are then licensed or certified to teach in schools without being trained in an accredited teacher education (long-term) programme (Heine, 2006, Legler, 2002). Tanzania has recently recruited secondary school teachers using this alternative route approach where such teachers are referred to as 'licensed teachers' (O-saki, 2008, Lynd, 2005). In some countries teachers recruited through these alternative routes receive a short induction course in teaching methods before they start teaching in the classroom. For instance, in Tanzania, licensed teachers are provided with four weeks of training to introduce them to the basics of classroom teaching without any actual classroom practice.

Shulman (1987) argued that the ability of teachers to effectively apply and use different teaching methods, learning theories and principles to transform students understanding and develop their skills, depends on their professional knowledge base which comprises their: content knowledge, general pedagogical knowledge, curriculum knowledge, pedagogical content knowledge (PCK), knowledge of learners and their characteristics, knowledge of educational context, knowledge of educational ends, purpose, values, their philosophical and historical grounds (Shulman, 1987). Of all these categories of professional knowledge Shulman (1987) considered PCK "of special interest because it identifies the distinctive bodies of knowledge of teaching" (p. 7), and "represents a blending of content and pedagogy into an understanding of how particular topics, problems, or issues are organised, represented and adapted to the diverse interests and abilities of learners, and presented for instruction" (p. 8). Since the Shulman publication, many other attributes of PCK have emerged and its components have been expanded upon (Loughran et al., 2006, Magnusson et al., 1999, Loewenberg et al., 2008). For example, Magnusson et al. (1999) extended Shulman ideas and proposed five components of PCK for science teaching. These are:

orientation towards science teaching; knowledge and beliefs about science curriculum; knowledge and beliefs about assessment in science; knowledge of students' understanding of science; knowledge and beliefs about instructional strategies for science teaching.

Since, pre-service teacher training, professional development, and teaching experience are considered key sources for building teachers' PCK (Etkina, 2010, Hume and Berry, 2010, Loughran et al., 2006, Hume, 2010, Grossman et al., 2005); it is likely that Tanzanian licensed science teachers recruited via non-traditional approaches that preclude pre-service teacher training, will have underdeveloped PCK. There is little interest and attention from the international community directed at this knowledge gap of unqualified teachers and the long-term impact of their classroom teaching on achievement of sustainable global education. This study sets out to investigate the professional learning needs of Tanzanian licensed teachers, with a focus on their PCK and their effectiveness in teaching students using learner-centred teaching methods. The study is guided by two main research questions.

- i. What are the professional learning needs, including those related to PCK, of licensed science teachers in Tanzania?
- ii. How effective are Tanzanian science licensed teachers in teaching science using learner-centred instruction?

### **The significance of the study**

As noted in the review of the relevant literature there has been very little research undertaken into the nature of the professional knowledge and practice of alternative route teachers' in Sub-Saharan Africa and South Asia. This study has the potential to make important contributions to the improvement of licenced teachers' performance by helping educational experts to understand the nature of their PCK and the impact their current teaching is having on student learning, current constraints on their PCK development and ways in which these constraints can be addressed to enhance their PCK.

### **Theoretical framework**

This study adopted social constructivism theory to explore licensed science teachers perceptions about their professional learning needs and their effectiveness in teaching students using learner-centred teaching methods. Social constructivists believe that human beings develop or construct meaning from their perceptions of different sources of information received through social interactions (Beattie and Dabbagh, 2003). This means that in social constructivism theory knowledge is socially constructed and is subject to individual interpretation. According to Karagiorgi and Symeou (2005) a core assumption of constructivism is "that individuals live in the world of their own personal and subjective experiences. It is the individual who imposes meaning on the world, rather than meaning being imposed on the individual" (p. 18). Adopting this constructivism position, this study has a view that the licensed science teachers are knowledgeable and able to provide their own views about their professional learning needs, in particular PCK, because their needs are felt personally and cannot be imposed from outside.

Constructivism as a school of thought “has its roots in the child-centred [student-centred], progressive ideologies of educationalists” (Duncombe and Armour, 2004). These constructivists held a view that in a learner-centred education knowledge is constructed by students and teacher(s) facilitate this construction of knowledge (Lea et al., 2003, O’Neill and McMahon, 2005). Student’s opportunities to learn during learner-centred instruction depends on the teacher engaging his/her learners actively by designing classroom activities that allows students’ construction of knowledge (Schunk, 2012). This paper uses social constructivism assumptions to explore licensed science teachers’ classroom practices in Tanzania to determine whether or not their classroom teaching practices engaged students in active construction of knowledge.

### Contexts of the case study schools

This study involved six teachers, two from Tlawi and Hewasi secondary schools, one from Nungu secondary school, and one from the Katani secondary school (all pseudonyms). These teachers brief background are shown in Table 1.

*Tlawi secondary school.* The school has 654 students of which 362 are girls and 291 boys. The school has 13 qualified teachers and five licensed Form Six teachers (four are science and mathematics teachers and one is an art subject teacher). The school has 15 classrooms and three unequipped science laboratory buildings.

*Katani secondary school.* This school has a total of 325 students, 11 classrooms and 12 teachers. The school had a deficit of six science and mathematics teachers and the school recruited two licensed science teachers to cover the shortage. This school does not have a working science laboratory.

*Nungu secondary school.* This school has 755 junior secondary schools students (ordinary level), 95 senior secondary school students (A-level), and 32 teachers. The school at the time of study had a deficit of two physics teachers and one chemistry teacher, and the school had recruited one licensed science teacher to fill the gap. The school has 18 classrooms but no science laboratory.

*Hewasi secondary school.* This school has total of 700 students of which 368 girls and 332 boys. The school has a total of 22 permanently employed teaching staff including five graduate teachers, 17 diploma teachers, and three licensed science and mathematics teachers.

**Table 1**  
**Licensed science teachers background qualification**

Name of school <sup>1</sup>	Name of teacher <sup>1</sup>	age	Teacher’s academic qualification	Teaching experience
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<sup>1</sup> All names are pseudonyms

Tlawi	Manim	23	<ul style="list-style-type: none"> <li>• Advance certificate of secondary education</li> <li>• 2<sup>nd</sup> year Open University of Tanzania student</li> <li>• Four weeks induction course</li> </ul>	5 years
	o			
	Pombe	25	<ul style="list-style-type: none"> <li>• Advance certificate of secondary education</li> <li>• 2<sup>nd</sup> year Open University of Tanzania student</li> <li>• Four weeks induction course</li> </ul>	5 years
Nungu	Tiita	26	<ul style="list-style-type: none"> <li>• Advance certificate of secondary education</li> <li>• 3<sup>rd</sup> year Open University of Tanzania student</li> <li>• Four weeks induction course</li> </ul>	4 years
Katani	Sungur	31	<ul style="list-style-type: none"> <li>• Advance certificate of secondary education</li> <li>• Absconded studies from University of Dar es Salaam</li> <li>• Not attended induction course</li> </ul>	3years
	a			
Hewasi	Safari	20	<ul style="list-style-type: none"> <li>• Advance certificate of secondary education</li> <li>• Not attended induction course</li> </ul>	1 years
	Qwary	19	<ul style="list-style-type: none"> <li>• Advance certificate of secondary education</li> <li>• Not attended induction course</li> </ul>	1 years

Source: field data

## Methodology

This interpretive study used a multiple case study approach and qualitative data-gathering methods. The participants for this study were selected through non-probability sampling using a 'purposive sampling' technique. The participants of this study were six licensed teachers and five education officials. Data were collected from multiple sources such as classroom observations, individual semi-structured interviews, a focus group discussion and documentary reviews. The data were analysed thematically using the five components of PCK as identified by (Magnusson et al., 1999) as a deductive analytical framework. Qualitative trustworthiness criteria were used ensure the credibility of the study.

## Results

The following sections identify the key findings about the nature of the licensed science teachers' PCK and its impact on their teaching practice

### Licensed science teachers' beliefs about teaching of science

The licensed science teachers felt that access to a laboratory plays a key role in the teaching of science subjects as it enables students to understand and learn them more effectively. However, while they advocated teaching science through experiments and practicals enhances students' understanding, typically they reported their schools lacked the necessary resources for such teaching.

Yeah, as you know biology and chemistry are science subjects that require a teacher to teach them using practicals, but at this school I am teaching my subjects theoretically because there is no science laboratory for conducting science practicals.... in order for students to understand the topics, it requires the science teacher to do some experiments... (Qwary, interview 1)

Another teacher commented about inadequate laboratory supplies in the school:

... in the school biology laboratory we don't have important chemicals for doing practicals, and as you know biology teaching requires both the use of theory and practicals to aid students' understanding ... science teaching requires students to use their senses such as touching, smelling, tasting, observing and hearing. (Pombe, interview 2)

Tiita illustrates how large classes, the lack of resources and pedagogical skills to improvise and develop teaching materials led him to choose a lecture style delivery.

... I frequently use the lecture method in my classes because it is easier to use when teaching large classes. ...another challenge is how to prepare teaching and learning materials, because this was not taught in the induction course ... and teaching materials are not available in the school. (Tiita, interview 6)

Similarly Manimo describes the detrimental influence large classes had on his pedagogy.

The number of students in the class is bigger than the stipulated student-teacher ratio, particularly in my school. For example, we have four streams of Form 1 students, 1A, 1B, 1C and 1D, with each stream having over 50 students. Therefore, in terms of methodology, rather than using participatory [learner-centred] teaching methods I prefer to use the lecture method to teach students in the classroom because it is easier. (Manimo, interview 4)

### **Inadequate understanding of science content knowledge**

The licensed science teachers acknowledged that they had inadequate knowledge for understanding and teaching some science topics. For example, Qwary confirmed that "licensed teachers need training in how to teach their subjects, in particular the content. Here I mean that training should focus on the specific subjects we teach in school, such as biology, physics and chemistry" (interview 1). Similar views were also expressed by Tiita.

It is difficult for me to describe specific training needs, but I think that revising how to teach the subjects and conduct science practicals are more important training needs at the

moment.... we are not trained in how to prepare practical lessons in the induction course and there is no help here at the school...I do not have the skills for conducting science practicals. (Tiita, interview 6)

Tiita's views suggest that the licensed science teachers have inadequate science curriculum knowledge and PCK, in particular about how to prepare and teach science practicals. When the education officials were asked their impressions of licensed science teachers' professional knowledge around the teaching of practical work, they expressed similar views.

Licensed teachers do not have the skills for preparing practical lessons, which I think is one of their training needs... they lack practical teaching skills because most of them studied an 'alternative to practicals'<sup>2</sup> in ordinary secondary levels. Also, in Form 6 they did practicals as students simply to pass the final national examination. (Headmaster, Tlawi secondary interview 8)

The District Education Officers also identified the lack of content knowledge as an issue and recognized a need to enhance licensed science teachers' subject content knowledge.

Licensed science teachers should get a dose [of training] in mathematics or physics first, and extra training in teaching methodology ... Because if the teacher does not understand the content of physics or mathematics, even though he [she] knows how to teach mathematics or physics, he [she] will be teaching something that merely resembles mathematics or physics. (District Education Officer I, interview 9)

An added issue was the inclusion of some topics in the science syllabus that were new to the licensed science teachers and which they felt that they were not knowledgeable enough to teach. For example, Safari comments "of course, some of the topics recently introduced in the biology syllabus are difficult to teach. For example, I have a problem teaching the topic called 'balance of nature', because I didn't learn it in high school (Safari, interview 3). A similar concern was reported by Sungura.

Some topics are difficult to teach, for example, those you were not taught or didn't understand when you are in ordinary level secondary school or high school, and so, when you come across these topics, instead of teaching them you skip them, for example, the topic of the lymphatic system in biology. (Sungura, interview 5)

These teachers' views suggest that licensed teachers depend largely on their limited science knowledge gained from their own junior secondary and high school schooling to teach science in their schools. It appears the views expressed by a range of participants indicate that the licensed science teachers in the study have an inadequate understanding of the science education curriculum and how to teach the subject content matter effectively, that is, weak PCK.

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<sup>2</sup> 'Alternative to practicals' is an alternative mode of teaching science practicals, whereby students memorize the science experiments theoretically and then do the examination on the basis of the experiments memorized in schools with an inadequate supply of laboratory equipment and consumables for carrying out real or wet practicals.

## **Perceived licensed science teachers' 'pedagogical knowledge' training needs**

During the interviews, the licensed science teachers raised a number of issues relating to their pedagogical knowledge learning needs, in particular, challenges concerning classroom management, understanding students with different learning needs and lesson preparation skills. Their comments focus on their need for training in teaching methodology [pedagogy] as Manimo explained:

Licensed teachers need training in teaching methodology [pedagogy] and how to help students to learn. Of course, when I was employed I was very young and so students have little trust in many of us because we are nearly the same age as them. You know at that time, I had few skills for managing students in the classroom. (Manimo, interview 4)

In a similar vein, Tiita reported that parents and the community at large see licensed teachers more in a caretaking role rather than teaching, describing the “licensed science teacher as a student employed to teach their fellow students, to keep students doing something rather than them remaining idle in the classroom” (Interview 6). While Pombe confessed that “I think licensed science teachers need to learn the different modern teaching techniques recommended in the new science syllabus, for example, the recently introduced participatory teaching methods”...(Pombe, interview 2). Another teacher claimed that:

To some extent the induction course covered some concepts such as methods of teaching but not all methodology concepts or techniques of teaching were covered due to the short time allocated to the induction course... professional development should focus on teaching and learning methodologies... how to recognizing talented and untalented students in the classroom and how to develop students' talents. (Manimo, interview 4)

In their classroom practice the licensed science teachers expressed uncertainty around the planning of instructional artefacts, particularly about filling in some sections of work schemes and lesson plans. Here Tiita described his difficulties with the terminology used in these documents during the focus group discussion.

Sorry sir, what is assessment? Because this is confused with evaluation, what is the difference between assessment and evaluation...in our new lesson plan template they have introduced sections for teacher evaluation and reflection, and in the scheme of work template there is also an assessment section. Can you explain each concept before we carry on to our discussion...I get confused over the use of these terms in the lesson plan. (Tiita, focus group discussion)

Another participant then commented that “in the new lesson plan template there are sections for remarks, reflection, consolidation, reinforcement, teacher evaluation and student evaluation as well as assessment, which is very confusing, because consolidation and reinforcement look similar to me” (Pombe, focus group discussion).

When samples of students' tests and examination prepared by the licensed science teachers from the case study schools were analysed using Blooms taxonomy of knowledge categories the findings showed that most of the test and examination items were testing the lower levels of Bloom's categories of knowledge (Table 2).



**Table 2**  
**Test items testing different levels of student knowledge by percentages**

Names of teachers	subjects	Number of test items	Categories of knowledge levels tested by items number and percentages					
			Knowledge	comprehension	application	Analysis	synthesis	Evaluation
Pombe	Biology <sup>3</sup>	33	84.85%	12.12%	3.03%	- <sup>4</sup>	-	-
	Biology <sup>5</sup>	40	80%	2.5%	7.5%	10%	-	-
Sungura	Biology <sup>6</sup>	30	76%	-	24%	-	-	-
	Physics <sup>7</sup>	21	76%	-	24%	-	-	-
Safari	Chemistry <sup>8</sup>	67	56.71%	11.94%	23.88%	7.46%	-	-
	Physics <sup>9</sup>	48	87.5%	-	12.5%	-	-	-
Qwary	Chemist <sup>10</sup>	55	76.36%	9.09%	10.91%	3.63%	-	-
	Biology <sup>11</sup>	18	44.44%	11.11%	16.67%	27.77%	-	-
	Biology <sup>12</sup>	59	86%	-	12%	2 %)	-	-
Manim	Physics <sup>13</sup>	22	86.36%	-	13.63%)	-	-	-
Tiita	Data was not available							

Source: Tests and examination past papers prepared by licensed science teachers

These findings could infer that licensed science teachers avoid testing higher level categories of knowledge because they do not have the knowledge and skills necessary for assessing students' higher order learning. This interpretation appears to be supported by the headmaster from the Tlawi secondary school who commented:

If you evaluate the types of test or examination questions prepared by licensed [science] teachers, you will immediately recognize that these questions have not been prepared by a qualified teacher. They are not following the principles of test construction like the use of table of specification. Licensed teachers usually copy questions from textbooks and

<sup>3</sup> Biology Form 3 terminal examination

<sup>4</sup> Dash means the items were missing in the test

<sup>5</sup> Biology Form 3 annual examination

<sup>6</sup> Biology Form 1 test

<sup>7</sup> Physics Form 3 annual examination

<sup>8</sup> Chemistry Form 4 mock examination

<sup>9</sup> Physics Form 2 pre-mock examination

<sup>10</sup> Chemistry Form 2 Pre-mock examination

<sup>11</sup> Biology Form 3 mid-term test

<sup>12</sup> Biology Form 1 terminal examination

<sup>13</sup> Physics Form 1 physics annual examination

previous past papers without using the table of specification. (Headmaster, Tlawi secondary interview 8)

Arguably from these findings, it could be claimed that students taught by licensed science teachers will be unlikely to achieve their academic potential, as licensed science teachers are not knowledgeable enough to engage students in higher-order learning.

### **Effectiveness of licensed science teachers in using learner-centred teaching methods**

The findings from interviews indicated that licensed science teachers had only partial understanding of the purposes of learner-centred teaching and learner-centred assessment strategies and what they might involve. For example, when asked about learner-centred teaching methods they referred to ‘participatory teaching methods’, that is, methods used to keep students busy during the lesson and to allow students to conduct classroom discussions.

Of course I don’t remember the exact examples of learner-centred teaching strategies, but what I can say is that learner-centred teaching methods are those that use participatory approaches, such as students being allowed to conduct group discussion during the lesson in the classroom. (Sungura, interview 5)

Sungura did think that a learner-centred teaching method is where students participate in group discussion but he was not able to define or give explicit examples of learner-centred teaching methods. Manimo considered that learner-centered instruction was an opportunity for students to take responsibility for their own learning.

I think that learner-centred teaching methods mean that the teacher is not the source of knowledge but simply guides students’ learning. Students are the source of knowledge they can learn on their own... This means that during the teaching process you just pose an idea concerning the subject matter and give student time to discuss because they know something and are not tabula rasa<sup>14</sup>. (Manimo, interview 4)

Nonetheless, observation of Manimo and Pombe in the classroom revealed that their instructional practices contain less elements of learner-centred instruction than their views suggest. Their classroom lessons were dominated by teacher-centred approaches where typically they used the traditional ‘chalk-and-talk’ style of teaching with students silently copying what was written on the blackboard.

This study was interested to find out whether licensed science teachers classroom practices are entwined with formative assessment methods as suggested in the science curriculum. When asked the licensed science teachers responded by describing their use of assessment techniques

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<sup>14</sup> the epistemological theory that individuals are born without built-in mental content and that their knowledge comes from experience and perception

such as quizzes, tests and oral questions and answers during classroom instruction. For example, Tiita made the comment “I ask my students oral questions during the teaching process to evaluate their understanding” (Tiita, interview 6) while Safari asserted that “in fact I usually use tests, quizzes, questions and answers... Therefore, after asking the questions I observe whether the students participate in answering them, and if they do then I know they have understood the lesson” (Safari, interview 3). However, despite the licensed science teachers’ claims that they used oral questioning to evaluate students’ understanding, classroom observations revealed that teachers rarely asked questions and in some lessons no questions were asked at all (Table 3).

**Table 3**

**Number of questions asked by teachers and students in each lesson observed**

		Teachers names and lessons observed												
		Manimo	Tiita		Sungur a		Pombe		safari		Qwary			
Subjects observed		Mathematics	physics	physics	Chemistry	physics	Biology	Biology	Biology	Chemistry	Biology	Biology	Biology	Chemistry
Number of questions asked by the teacher	of	2	4	6	2	0	3	4	0	4	1	1	0	3
Number of question asked by students	of	0	0	0	0	1	0	0	0	1	0	1	1	0

Source: Lesson observation notes

The findings here suggest that while licensed science teachers think they understand learner-centred assessment strategies they actually do not practice formative assessment in their teaching. In reality the teachers’ classroom practices are dominated by teacher-centred instruction and assessment, with little use of oral assessment techniques to evaluate student understanding of lessons. In all the lessons observed the teachers did not appear to evaluate students’ learning.

### Discussion and conclusions

This study sought to investigate unqualified licensed science teachers professional learning needs in particular PCK and how effective they were in using learner-centred teaching methods in their classroom teaching. The assessment of the licensed science teachers’ PCK needs was conducted with the intent to understand “how teachers take content and transform their understandings of it into instruction that their students can comprehend”(Nuangchalem, 2012). The findings of this study have shown that unqualified licensed science teachers have underdeveloped PCK components (orientation toward science teaching, knowledge of curriculum, knowledge of

science assessment, knowledge of students' understanding of science, and knowledge of instructional strategies) which need to be enhanced in order to improve the status of student learning in science and mathematics. Their PCK wants were broad but deeper understanding of subject content knowledge and training in pedagogical knowledge featured highly. When examining the licensed science teachers' understanding of science curriculum, this study found that nearly all the licensed teachers were lacking specific subject content knowledge understanding. This inadequate understanding has negative implication for students' learning as teachers' ability to transform subject content knowledge into student learning outcomes because it also impacts on their ability to design interactive instructional strategies. As a consequence of their resultant underdeveloped knowledge of science instructional strategies, the licensed science teachers' classroom teaching practises were dominated by 'chalk and talk' teaching styles and students were passive learners. The underdeveloped PCK of licensed science teachers was reflected in the nature of test and examinations items which were found to predominantly test lower level of Bloom's knowledge categories. In their classroom teaching they made little use of students' background experiences adopting a teacher supremacy approach to their teaching. Goodnough and Hung (2008) claimed that PCK components are interrelated and when one component is underdeveloped its effects are reflected across other components.

Classroom observations and interviews revealed that the unlicensed teachers do not understand and use learner-centred teaching methods. Their classroom practises were dominated by teacher directed learning while students' role in the classroom learning was to copy notes written on the blackboard. The most likely reason for this supremacy of teacher-centred teaching methods amongst licensed science teachers lies in the methods which were used to teach them when they are students in junior and high schools and they are imitating it as model of practice. Also, learner-centred methods are innovative to Tanzanian teachers and these practices are still not well understood and used in schools. These findings suggest that given the lack of pre-service teacher education and background experience about the use of learner-centred teaching methods, licensed teachers mimic the teaching styles of their 'masters teachers' – a term used by Stamatel (2003) to identify the previous teachers of novice or untrained teachers whose classroom practices they imitated because they considered them as masters teachers. However, Young et al. (2005) commented that novice teachers usually imitate teaching methods "without completely understanding the principles behind such teaching" (p.186).

In conclusion, this study finds that the PCK of teachers recruited through alternative route approaches, like Tanzanian licensed science and mathematics teachers needs to be enhanced. The impact of underdeveloped PCK components were reflected in all aspects of licensed science teaching and their classroom teaching is not helping their students to acquire higher cognitive skills. Also, their classroom teaching practises were limited by teacher-centred approaches which promote rote learning and memorization of facts. The implications for the wellbeing of Tanzanian society are serious because citizens with underdeveloped cognitive skills are not likely to compete on equal terms in global education and economic development because of the disparity of their skills. Arguably, the global community should consider and address the needs of unqualified teachers teaching in developing countries in order to bring equal opportunities for all global citizens.

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*How do the middle class families pursue upward generational mobility by accessing transnational higher education?*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

This article examines the strategies of second generation Chinese new middle class that are unable to obtain admission in China's premier universities. It finds that their parents transfer their own *guanxi* (connection) by sending their children to private universities or study abroad to secure the intergenerational reproduction of their class status and mobility. The Chinese new middle class families look upon joint-partnership private universities as stepping stones for overseas study. It analyzes how the middle class parents can make use of their cultural and social capitals at hand to enhance the cultural capital of their children. In addition, this article examines how extant Western class theories cannot provide an adequate account for the generational stratification of Chinese new middle class families. The intergenerational mobility of the middle class families goes beyond the Western class theories, including Weberian, Neo-Weberian, and Bourdieuan theories. The article delves into this peculiar measure by exploring why the Maoist social institutions of *danwei* and *hukou* still matter in post-reform China in determining middle class parents-children's life chance. The emergence of the Chinese new middle class seem strongly tied to that of cadres; the actual beneficiaries of the economic reforms. Progenies of cadres i.e. co-founding families, are the greater beneficiaries of economic reform. [200 words]

**Keywords:** The Chinese New Middle Class, Educational Reform, Transnational Higher Education, Generational Stratification

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Education has become a form of consumption. And like any other consumption item, educational consumption often is based on one's economic capability and intelligence. Excellent educational resources . . . are scarce and should be priced at a higher level. It is natural that not everyone can afford excellent educational resources. It is like shopping for clothing. A well-off man can go to a brand-name store to buy a 10,000-yuan suit, while a poor person can buy a 100-yuan suit from a vendor (Wang Xuming, 2006).

Affluent second generation descendants of the Chinese middle class comprise the majority of students in most of China's private universities. The increasingly globalized nature of the media, familiarity with the English language, and opportunities for higher education in Anglophone countries have lured many middle class children from Guangdong province to private universities in China. The quotation above fully depicts the perceived social role of education in today's China<sup>1</sup>. The expansion of transnational higher education in China, which evolves from "cooperation between foreign education institutions and Chinese education institutions in China cater for the needs of Chinese citizens" (State Council of China, 2003), is not only just one characteristic of the transitional Chinese community's mode of existence, but also a part of a community composed of ambitious, well-educated middle class families who are anxious to cement their social status in post-reform China (Fong, 2004; Fang 2012).

The primary research aim is to examine why the old Maoist social institutions of *danwei* do and *hukou* still play a pivotal role in determining one's life chance in today's China, even though the country has experienced substantial social change as a result of the pro-market economic reform. I then propose a theory of social stratification in socialist countries to account for how social stratification emerges and is sustained in the Chinese socialist system. Also, I examine how an application of the existing Western class theories, especially the Marxist, Weberian, Neo-Weberian, and Bourdieuan ones account for the rise and consolidation of the Chinese new middle class in post reform China as prelude to ascertaining why in the area of higher education, the old Maoist social institutions of *danwei*<sup>2</sup> and *hukou*<sup>3</sup>

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<sup>1</sup> For example, in the UK, an overseas pupil needs to pay an average of £16,000 (\$25,000) a year for boarding-school education – about ten times the average annual income of an urban Chinese household in 2003. Meanwhile, about 7,000 students from China study in Australia at secondary level each year, accounting for half of the students studied study abroad on student visas in 2003. The number of the student to study abroad is growing by 10% a year (The Economist, 2003).

<sup>2</sup> The *danwei* (单位 'work unit') system refers to the place of employment, especially in the context of state enterprises during the pre-reform period. The *danwei* was the first step and principal channel for implementing party policy in the Chinese socialist infrastructure. The work unit once held considerable sway on the life of an individual: workers were bound to their work units for life. The work unit was almost wholly self-contained and provided an individual with a full complement of goods and services for living, such as housing, healthcare and education. The same system monitored the behaviour of each individual for compliance with implemented party policy.

<sup>3</sup> The *hukou* (户口; household registration) system separates the entire Chinese population into two (and only two) categories: agricultural registrants domiciled in rural areas and non-agricultural (i.e. urban) registrants in cities. Introduced in the 1950s, it became quickly entrenched by the early 1960s. The *hukou* is a nationwide system of household registration set up under the 1958 Regulations on *Hukou* Registration were issued by the National People's Congress (NPC) in a bid to safeguard progress towards collectivisation in rural areas and control food shortages in urban areas. It was designed chiefly to control internal population movement. It created a legal domicile for every person and bound each person permanently to that domicile.

still matter in determining middle class children's life chance to study in private university in today's China. The continuing dominance of state-owned entities in Chinese post-reform society allows middle-class parents to utilise the social and political capital at their disposal to enhance the cultural capital of their children in order to preserve their hard-earned social status. I argue that many children of affluent, new middle class children in China, cannot win places in China's prestigious, tier one universities because of the highly competitive national university entrance examination (*gaokao*). Their families prefer them to study in private universities. On the surface, it is natural. Many parents of Hong Kong students pursue the similar options when their children cannot be admitted to government-funded institutions.

As discussed in detail below, what differs, however, is that there are no "memo students" in Hong Kong. Most of the middle class parents I interviewed have connections with their previous *danwei* and they belong to "co-founding families". The memos and connections students mostly come from the influential departments in the district, such as the Industrial and Commercial Department, the Tax Bureau, Planning Department and the Discipline Inspection Department in Guangdong. These middle class parents-children are comparably easy to get the co-founding fees when compared with working class families. Co-founding fees (Wu Xiaoxin 2008:600) are the money provided to preferred schools by work units to ensure the middle class parents-children from the work units can attend their co-founding schools, which are, in most cases, the best local primary, secondary, and even private universities if they failed to get a place in tier one universities. At least, most of the cadre's children belong to co-founding family/student. This coincides with the emergence of private universities since the 1990s which has been encouraged and supported by the central government in its attempt to shift the financial burden of expanding higher education from the state. The emerging Chinese new middle class also facilitates the rise of private universities in China. Particular focus will be on how middle-class parents make use of the advantages provided by the long-standing social institutions of *danwei*, *hukou*, and *guanxi* to find places for their children in private universities or to send their children abroad for pursuing higher degrees. Born when China was under economic reforms, the second generation of the Chinese new middle class has a "post-communist personality" that is individualistic, materialistic, and moneymaking in attitude (Faure 2008: 476), defying traditional cultural values such as frugality, modesty, and self-restraint (Wang 2002; Faure 2008: 475-76).

### **The rise of the private universities and the definition of the Chinese new middle class**

Until the early 21<sup>st</sup> century, most Chinese students studied at state-run universities or colleges and relied on government scholarships for studying abroad. According to the Chinese Ministry of Education, in 2007, there were approximately 4,300,000 students in private post-secondary institutions, 1,600,000 in private universities, 1,800,000 in second-tier colleges of public universities, and 870,000 students in other kinds of institutions (Chinese Ministry of Education 2007). Foreign educational institutions then began to show great interest in investing in higher education in China. Around 200 British institutions offer various study programs in China, with some 11,000 students pursuing British academic degrees under such programs. American academic institutions, including Duke University, New York University, Columbia University, and many others colleges, are also active in collaborating with Chinese educational institutions. It is estimated that well over 1,000 foreign academic institutions have expressed keen interests in establishing private universities in China (Fazackerley 2007).

This development have been in sync with the emergence of a new middle-class, one of the drastic social changes in China over the past 30 years or so, especially in Guangdong which enjoys an average annual economic growth rate of approximately ten per cent.

The Chinese new middle class<sup>4</sup> is defined by a number of criteria: the first standard is a minimum per-capita income of RMB9, 000 per month; second, post-secondary education (technical or non-technical) or above; third, managerial-level or managerial-type job position; fourth, urban belonging (urban *hukou*), fifth, possession of a house or a car either by mortgage or outright purchase; and sixth, disposable income of RMB300, 000 or above (Author 2013). Most middle-class families today can afford educating their children in private international universities in China, the USA, or the UK. In fact, private universities have become a tool for achieving intergenerational upward mobility, and this paper examines how the new middle class fully utilize their economic privileges and the growth of private universities in China to preserve upward social mobility. To secure their middle-class status in post-reform China, both the older and younger generations of the middle class feel compelled to upgrade themselves in the face of increasing competition fuelled by both economic reform and globalization. The national higher education entrance examination (*gaokao*) is very competitive in China. According to a report published by Commonwealth of Australia (2009), there were 10.5 million candidates in 2008, of which only 57% (5.99 million) were eligible for admission to China's universities. Only the top 10% of the candidates were admitted to tier one universities. This explains why middle-class parents whose children are not in the top percentile of grades will try various means to get their children into transnational higher education institutions. However, one has to understand in the first place from a sociological perspective why parents attach much value to education.

### **The growing role of education in class distinction: a theoretical overview**

Sociologists have discussed the role of education in analysing the emergence of new social class. A theoretical framework incorporating a spatial-temporal dimension to the extant debates on class analysis, consumption patterns and institutional changes in post-socialist China will be presented. Up to now, most research on class structure and formation is based on Western European concepts originated about 100 years ago. This is because Europeans were the first to write about class, in a way coherently and sensibly enough to allow further research. For this reason, the classical Marxist point of view is traditionally a good starting point for analyzing class in the academic world. Whenever class is discussed in China, naturally Marxist theories on class are referred to in the first place. This paper, however, argues that Marxist theories cannot be applied for the purposes of understanding the emergence of the Chinese new middle class because Marxists ignore the intermediate middle class and Marx's theory is a theory of polarisation. The Chinese case also introduces problems—it is a “wrong” transition from state socialism to market socialism (capitalism). The Chinese transition complicates the Marxist analysis by including a trajectory not recognised by Marx. If market capitalism tends to be a class society, it is not a class society in the Marxist sense. Neo-Marxist (e.g. Erik Wright's) class analysis is not applicable to the Chinese context in the sense that in the western debate, there is an attempt to understand modern capitalism in class terms. This begins with Marx and moves in a Weberian direction. This move entails first locating intermediate classes within Marx's polarized classes as fractions (Poulantzas 1973 &1976; Wright 1985a &b).

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<sup>4</sup> This is based on my doctorate study of the emergence of the Chinese new middle class. See Author (2013).

According to Max Weber, skills and educational credentials are two of the basic elements of class formation. The Weberian approach argues that education is important because it indicates membership of a status group that controls access to higher-paying jobs. Education is a key factor in upward social mobility. Weber developed a typology of class, status, and party as the three bases of social stratification. He considered them exerting important influences in people's lives, as opposed to the Marxist emphasis on property classes alone. That means the Weberian approach looks at educational credentials as differential sets of life chances for members. Weberian and Neo-Weberian approaches, in contrast, are more relevant to the study of the emergence of the Chinese new middle class in post reform China. China is now moving towards a form of market capitalism, the Weberian notion of party is more relevant to understanding transitional issues than status (Weber 1951).

On the one hand, social status has to do with individual or group lifestyle, education, training and socialization as well as inherited or occupational prestige. On the other hand, class distinctions are linked in various ways with status distinctions. Property is not necessarily recognized as a status qualification, although in the long run it is and with extraordinary regularity (Weber 1946: 186-187; Liechty 2003: 14). The Weberian analysis provides useful insight into how consumption and status could be related to the dynamics of middle-class cultural practices. (Liechty 2003: 11) The rationale is that socio-cultural processes in Weber's intermediate strata (i.e. middle class) revolve around a wide range of cultural formations, lifestyles, party, and status claims. Furthermore, social status and hierarchy are based more on marketable skills, lifestyle, party (cadres) and consumption. (Storey 1999; Pinches 1999)

In addition, the concepts of work and market situation proposed by Neo-Weberian, John Goldthorpe (1980; 1982) is particularly relevant in this study for highlighting the importance of the cultural capital or education credential. His class framework is primarily divided into those who exercise "delegated authority or specialised knowledge and expertise" and those who do not. The authority factor is the most likely one that gives rise to differences in working conditions and market capacity, even if status and party tend to be residual terms. According to Goldthorpe, market situation refers to an occupation and its income source and level, associated conditions of employment, the degree of economic security, and the chances of economic advancement. Market situation also refers to categories of occupations whose members are well connected in the field, and have connections in the job market. Work situation refers to where an occupation is located in the systems of authority and control within the production process. (Goldthorpe 1980: 40) Occupations typically have common market and work situations within the boundary of the same class. This means the middle class are the members of the same jobs and they have a very good information flow at the same field.

Bourdieu's theory is another way to serve as a cultural task like consumption patterns, lifestyles, and identity of class formation, which is a different way of picking up the status theme from Weber and Neo-Weberian discussion in China. A paradox is whether "class analysis" can be applied to China when it is in negating Marxist principles. Pierre Bourdieu (1977; 1989) provided another conceptual framework for class analysis whereby classes can be distinguished from one another in terms of different educational levels, family inheritance, and internally coherent sets of tastes. His concept of class *habitus* indicates that cultural capital is the pivotal determinant of values, instincts and lifestyles. Cultural capital comes in various institutionalized forms. But it is most readily evidenced by education and skills.

Bourdieu & Wacquant (1992) emphasises the leading function of education as one that predisposes an individual or group to engage in certain cultural practices. The inference is that education brings out differential cultural patterns. A dominant economic class able to gain access to superior culture (e.g. good taste) legitimizes its position of superordination relative to other classes. Education enables the class to progressively capture the means of cultural reproduction as a way of increasing its chance for social reproduction (Bourdieu 1977; 1989). The class *habitus* theory suggests that as an example, one can predict a low likelihood of friendships between professionals and manual workers because they differ sharply from each other in cultural capital. The more culturally similar the people are, the more likely they will become close associates. (Silver 1990; Zang 2006) Real life bears this out: professionals are mostly university graduates trained in critical thinking and they develop a tendency to exchange views only with their equivalents.

Cultural capital can take three forms. They are embodied, objectified, and institutionalized. (Bourdieu 1986) The embodied and institutionalized forms of cultural capital can be applied to depict the middle class's goal to maintain their status over generations. The embodied form of cultural capital refers to the individuals who possess basic intellectual skills that allow them to learn other advanced skills. This kind of cultural capital is directly associated with time, effort, and parental involvement and nurture. Middle class parents invest in their children so that they can learn other talents, skills, and partake in extra-curricular activities. Institutionalized cultural capital refers to educational qualifications or credentials, creating a "certificate of cultural competence which confers on its holder a conventional, constant, legally guaranteed value with respect to power". (Bourdieu 1986: 248)

Middle class families tend to have comparable cultural capital, tastes, *habitus*, distinction, and class (Bourdieu 1986). The taste that a person shows in goods is an indicator of his or her social class in a commodity-oriented (i.e. consumption) culture (Featherstone 1991: 88). That makes consumption culture a 'field' to create, preserve, and replicate social differentiation and social disparities (Bourdieu 1977; 1989; Bourdieu & Wacquant 1992). If, as already mentioned, a dominant class uses education to preserve its culture as well as class position, then one can say that education shapes taste as well as consumption behaviour with respect to social differentiation and class boundaries. That in turn shapes the characteristics of the consumption culture. This is the way Bourdieu interprets class in cultural terms (lifestyle and consumption patterns), which is similar to Featherstone's (1991) understanding except that the latter focuses on consumption rather than production of work.

### **Education, class formation and social stratification in today's China**

There is a growing body of literature that lends support to the claim that Chinese middle class are in a privileged position by virtue of their access to education. Both Stephen Ball (2003) and Diane Reay (2001) point out that there is an increasing importance of parental involvement in neo-liberal, marketized education systems through their role in nurturing their children's studies and careers. Ball (2003) and Reay (1998, 2001) have theorised how middle-class "choice" configures the school environment in the United Kingdom. Beverley Skegg's (1997) study of young, white, working class women in British Midlands, and Simon Charlesworth's (2000) study of young people in Rotherham show that these groups feel disempowered by the workings of the educational system. Education is a commodity that is commercialized. There is stratification and polarization between the middle class and the

lower class. Education is a major contributing factor to upward generational mobility for the middle class. (Crabb 2010)

In post-reform China, class is generally referred to structures of material inequality or groups ranked in a hierarchical order (Guo, 2012: 725). Rhetorically, class in post-reform China is an increasingly redundant issue (Holton & Turner, 1989) largely because the Chinese government and the official media show great reluctance to mention the notion of class for fear of provoking ideological debates about the nature of the Chinese socialist system and correspondingly political instability. The Chinese Communist Party (CCP) has already abandoned class struggle and “continuous revolution” politically and ideologically in order to embrace economic development through marketization since 1978. (Guo 2012) Rather, China prefers the discussions of social stratification or hierarchy. This is why whenever a class analysis of the Chinese new middle class is conducted, class was primarily a signifier of the CCP’s desirable and undesirable beliefs, values, and behaviour. That means class does exist in post-reform China, but the CCP tried to deny the existence of class. Before the economic reform, the CCP only recognized cadres and working class which included peasants. There was no such concept of middle class. However, after economic reform, entrepreneurs and cadre-entrepreneurs have been emerging to form the core members of the changing Chinese society. The emergence of the Chinese new middle class is more political-ideological than sociological. Politically and ideologically speaking, China wants to facilitate middle class as a “politically and economically stabilizing force”, “a social stabilizer”, “promoters of advanced culture”, “a natural opponent to violence and dictatorship” and “represent moderation and rationality”. (Lu Xueyi, 2006: 54) But sociologically speaking, China never thinks the Chinese new middle class could be a good source to narrow down the economic inequality between the rich and the poor. While the CCP refuses to refer to Marxism and class struggles in favour of economic development and social harmony, the concept of class is still enshrined in the constitution, national flag, and national emblems. Cadres and state-owned enterprises and institutions, including the old Maoist social institutions of *danwei* and *hukou*, still play a pivotal role in allocating sought-after resources in the country and accordingly determine the life chances of the second generations studying at private universities if they fail to gain admission into tier one universities.

In China, most of the old generation enjoy all the institutional changes in reform China since the 1980s, especially for the cadre-entrepreneurship in the mid-1990s. They have accumulated lots of social capital or resources like good *danwei* (work units), urban *hukou*, and connections in helping their children to get a better education or even life chance. *Hukou* creates spatially distributed inequality. *Danwei* continues to be significant on class and class distinction in urban China. Both *hukou* and *danwei* create differences in work situations by forming *guanxi* (connections and networks) inside the boundary of the new middle class. The *guanxi* circles that ex-state workers have developed during their time with the *danwei/hukou* remain useable and important even after their switch to the business world.

Institutional changes in China since 1978 have allowed and promoted collaborations amongst the Chinese new middle class. Cadres are still important in forging collaboration with professionals and entrepreneurs. The rise of a new group of hybrid elites, known as “cadre-entrepreneurs” (Nee, 1989, 1991, 1996) is particularly peculiar in post-reform China. The new middle class and others often exploit policy loopholes to collaborate with cadres for pecuniary or other gains, thereby reinforcing any grey areas that exist in the system. The mad rush to economic performance causes due diligence in governance to fall by the wayside. The

resulting chaotic, badly developed systems of policymaking, legislation, and general administration result in institutional fuzziness and illegality. There comes a proliferation of swindling, counterfeiting, influence-peddling, and other malfeasances. It comes with a large grey area of interconnecting relationships built up by gift-giving, wining and dining, collective memories, traditional Chinese values, and the need for self-improvement. The loophole in the machinery of government and the relationship-oriented nature of Chinese society results in administrative grey areas and encourage *guanxi* networks to arise as a means for “getting things done.” This explains why the middle class parents can afford to send their children to the private universities since they accumulate enough economic capital (money) if they are in possession of a reputable *danwei* in urban China.

Most of the older Chinese new middle class have *hukou* and each of them is politically affiliated to one particular *danwei*. An urban *hukou* is very important for the middle class parents to help their children to study in private universities. Urban *hukou* holders get easier access to key (*zhongdian*) primary schools and secondary schools where there is always keen competition for places. With enrolment quotas, the key primary schools and secondary schools only accept urban *hukou* children, and more likely include English into their formal curriculum. Even though most of my samples, as discussed below, do not select private universities as their first choice they appropriate their urban *hukou* and the previous educational qualifications to study at private universities in South China that use English as the medium of instruction. The highly-competitive, State-run prestigious universities they did not qualify for use Putonghua.

Another mechanism of social stratification in post-reform China is derived from the fact that the same occupation (in class terms) is rewarded differently in different regions because of the continued operation of *hukou* and *danwei*. As noted above, *hukou* creates spatially distributed inequality. Initially conceived as an instrument of social control in the Mao era, *danwei* continues to be significant in class and class distinctions in urban China. Both *hukou* and *danwei* create differences in work situations and facilitate the forming of *guanxi* networks among those within the boundary of the new class. I focus on the children of the older generation of the middle class – the second generation – who fail to go through the intense competition of *gaokao* to win places at the prestigious tier one universities like Peking, Tsinghua or Fudan Universities in China. Discontented with second tier universities, their parents prefer to utilise their social and political capital at hand, derived from their connections with their old *danwei* and *hukou*, to send them first to domestic private universities and then universities abroad in order to preserve their middle class status. This cannot be properly explained by Western theories because there are no counterparts of *danwei*, and *hukou*, in the West. To fill in this literature vacuum, I attempt to argue that *hukou*, *danwei*, and *guanxi* play a very crucial role in the upward generational mobility for the Chinese middle class to secure one admission to private universities in post-reform China. Focusing on cultural “forms” (cultural resources and practices), my operationalizing approach is appropriate for the Chinese context. In traditional China, due to the absence of public education, educational opportunities were limited to children of high-status scholar-gentry families that had educational or cultural resources. As a cultural legacy, in today’s China, parents always go to great lengths to help their children make progress in key schools and, particularly, to ensure that they are well prepared for the state-run competitive entrance examinations. My approach of operationalizing cultural capital from Bourdieu reflects the reality that middle class parents provide more cultural resources to help their children succeed than their working class counterparts. (Wu Yuxiao 2008:204-205)

## **Watching, participating, observing, and interviewing: a study of South China**

While I was teaching in an English speaking joint-partnership private university in China, I obtained funding to investigate the perception of parents and children toward private education in China. My fieldwork for this study comprised of 15 in-depth interviews with parents and their children. Table 1 shows the details of the interviewees. Most of the in-depth interviews were conducted in this private university before summer 2011. They signed the consent form to grant my permission to collect all data for this paper. I had many formal and non-formal opportunities to talk with the Chinese new middle class parents and children. The old generation of Chinese new middle class in this study were born between 1949 and 1969. They are professionals, entrepreneurs or cadres. The young generation of the Chinese new middle class are the children of the older generation. In this research sample, most of them were born in the 1990s. The reason for this grouping is because most of the old generation experienced the tumultuous Cultural Revolution, rendering them ample life differences from the younger generation who did not experience the same revolutionary movement. The students could not secure places in upper crust universities and were currently studying in private universities in China or universities in Macau, and some even were studying in the USA when the interviews were done in 2011. The major research targets are the middle class parents who are upper-middle class professionals, cadres or entrepreneurs, and have economic capital to arrange their kids for studying at private universities. The study also comprised informal chats with informants, and home visits of 15 middle class families in Guangdong. Combining formal and informal methods helped interviewees feel more at ease and encouraged them to reveal more openly and deeply about their self-identities, life philosophies, insecurities, imaginations, and outlooks on various issues. The qualitative interview, as a method that yields “rich sources of data on people’s experiences, opinions, aspirations, and feelings” through its flexible and sensitive dynamic. May (1993: 91) has proven to be a solid feature to study the nuances of the education and middle class parent and children in today’s China. The identity of the respondents is protected by the use of pseudonyms. As a fluent Cantonese and Putonghua (Mandarin) speaker, there were no language barriers.

It is obvious that the middle class parent and children respondents in my samples are very conscious about the need to select only prestigious educational institutions. They possess what Bowen calls “the appropriate economic, social, and cultural capital to ‘decode’ school systems and organization.” (Bowen 1995: 25) However, the working class is comparable to the middle class in its desire to escape the “iron cage of zoning.” (Lauder & Hughes 1999: 18) This explains why the middle class families spend huge investment in their children’s education. Yang (2010) concludes that the opportunity to attend higher educational institutions depends highly on parental education. In rural China, 85% of rural students are admitted to colleges whereas in urban China only 83% of students are admitted to colleges after the national higher education entrance examination in 2003 (Yang 2004). However, most of the grassroots children cannot afford to study in private universities and drop out. It also found that top colleges cater to elite students and favour children of home cities, often requiring rural students to outperform urban counterparts on a national test. (Yang 2010)

**Table 1: Interview profile of the middle class parents and children**

Parents	Details for middle class parents	Name of Children & status in 2011	Children's age
Fong	F, 48, entrepreneur, Master	Annie Studying in the USA	19
Xin	F, 50, professional, Master	Mary Studying in the USA	20
Li,	M, 50, entrepreneur, Bachelor	Dennis Studying in the USA	19
Fan	M, 46, professional, PhD holder	Lillian Studying in the USA	21
Yan	F, 44, cadre, Master	Raymond Studying in the USA	19
Kit	F, 46, cadre, MBA	Grace	20
Leung	M, 48, cadre, MBA	Ivy	21
Kiu	M, 48, entrepreneur, Bachelor, ex-cadre	Melody	18
Ying	F, 46, Professional, Bachelor, ex-cadre	Gigi	19
Zhou	F, 48, professional, post-secondary	Lily	19
Chu	M, 50, entrepreneur, post-secondary	Kary	19
Lin	M, 50, entrepreneur, post-secondary	Amy	18
Yang	F, 46, entrepreneur, post-secondary	Philip	19
Wang	F, 44, cadre, post-secondary	Jane	20
Jiang	M, 49, entrepreneur, Bachelor, ex-cadre	Jan	19

### **How did middle class parents transfer their networks to their children?**

Most of my middle class parents have connections with their previous *danwei* and belong to “co-founding” families. ” As soon as their students did not enter one of the top national universities, they wanted their children to study in private universities. There are English-speaking native professors at private universities, which create a very good language and learning environment in China. Indeed, students do not need to glorify the CCP or receive political indoctrination in private universities. When I was a teacher at my previous university, I was asked many questions about future graduate study, either by my students or their parents. “Can you give me more hints as to how I can help my daughter to study in the USA or the UK? It is not a matter of money, but it is a matter of chance!” (Fong, 48, entrepreneur, Annie’s mother) ‘I don’t care how much I spend on my son’s education, I just want him to

study at a well-known university and get a relatively stable job either in the USA or China. I analyze how the middle class parents and children utilize their economic, social and political capital (cadre according to Weber) to gain more cultural capital (education) to maintain their middle class status in post-reform China. The Chinese middle class parents have economic capital to invest in their children for them to learn talents like playing the piano, drawing, English, football, swimming, skiing, and many other talents.

*Danwei*, *hukou*, and *guanxi* are closely intertwined with each other. The Chinese new middle class uses *danwei* resources to help their children maintain intergenerational mobility. Since the 1990s, many cadres have “jumped into the sea [of commerce]” have close connections with their previous affiliated workplace (*danwei*), which was officially dismantled in rural China but it continues to operate in urban areas. Because historically welfare benefits and resources were distributed through *danwei*, it now affects work situation and influences welfare, and accordingly impacts on class relations. *Danwei* is significant in class distinction because of its role in forming *guanxi* networks inside the boundary of the Chinese new middle class. Therefore, *danwei* is a major institutional factor that directly contributes to the emergence of the Chinese new middle class, who possess urban *hukou* status and have connections with urban *danwei*. Both in turn opened up vistas to accumulate economic assets following the market reforms, which in turn allows for the development of certain lifestyles that could be shared with others who have gone through roughly the same pathways. They are generally seen as the lucky ones when compared with the “lost generation” of *xiagang gongren* (laid-off/redundant workers) when many Chinese state enterprises were closed down around the mid-1990s because of economic streamlining. They did not suffer from the so-called destratification of social status. (Parish 1984; Davis 1992:1062-1085; Bian 2002: 105) The family status is also crucial for their children to study in key primary and secondary schools.

In addition, most entrepreneurs and professionals in the older generation were previously cadres. Thus, cadres are frequently also entrepreneurs, at least part-time, and professionals also engage in entrepreneurial activity. Equally, given continued state ownership, some positions – for example, in health – that in Western contexts would be identified as professional also overlap with cadre roles and provide opportunities for various kinds of private activities. In this way, it is not simply an issue that entrepreneurs need to make contact with cadres, but that in some contexts, the entrepreneurs in question are also cadres. In this way, the different groups have no difficulty in understanding the world of the others and their expectations, because they occupy that world not just in terms of common background, but also in their everyday activities.

I found that most of the middle class families are well networked and they have ties with ex-colleagues (cadres) or acquaintances (social capital) in the private university. It will be easy for them to bring their children to it. Although most of private universities accept students on the grades attained in the national entrance examination in China, they still have quotas for self discretion, giving rise to “memo students” and “connections students. They are the students whose parents were cadres-turned-entrepreneurs or professionals in the 1990s. Their parents have *danwei* and urban *hukou*, and have close connections with their acquaintances who have the same background (*guanxi*) and political capital in Guangdong. Urban *hukou* is still important for the older generation to help their children to study in a key primary and secondary schools, and private universities. Fong (Annie’s mother) told me that her urban *hukou* has allowed Annie to study in key schools and a private university. The key schools

teach English in their formal curriculum. The private university has a mission of advancing the internationalization of Chinese quality education while at the same time taking the lead in implementing liberal arts education in China. (Woronov 2008) This private university offers a number of unique features. First, it is an internationalized school with unique educational approaches blending elements of Chinese and Western educational models. Second, it provides small-class teaching and numerous extracurricular activities. Third, English is the primary medium of instruction. Four, it emphasizes the importance of education, critical/creative thinking and the balance between study and extra-curriculum activities. Most Chinese new middle class parents who do not want their children to be exposed to political propaganda are also impressed by the flexibility offered by private universities.

Fong was taught by her colleagues to invest wisely so she has started to invest properties as well as shares. At the same time, her middle class acquaintances who are professionals, cadres or even entrepreneurs in China can help Fong if she needs some sorts of helps to educate or nurture Annie. She is aware that a degree from the publicly-run universities will not help Annie find a good career. Annie got a high GPA at my previous private university. Fong decided to let Annie study abroad. She did a lot of data collection, sought help from her ex-colleagues in the government, and consultancy agencies in Guangdong while Annie was studying in year one. Finally, Fong gave RMB100,000 to the agencies which guaranteed that Annie could be able to get a place in one of top 50 universities in the USA. If she failed to get an offer, the agent would refund the money. Finally, in September 2010, Annie was able to attend a prestigious university in the USA.

Similar with Annie, Raymond got an offer from New York University in the USA in 2010. His mother, Yan, had a back-up plan. Yan has very broad connections with professionals, cadres, and entrepreneurs. If Raymond cannot find a job in the USA, it is better for him to work in China earlier. Otherwise, once Yan retires, her *guanxi* will fail to provide any inroads. She revealed that some graduates from Fudan University (the best university in Shanghai) could not even find a job. She is anxious about her son's future. "*Guanxi* is considered significant in future job-seeking. Thus, even if they earned a PhD from a very good university in the USA or even China, it is hard for people to get a good job" without *guanxi*. Raymond echoes his mother's concerns and follows her plan. With her mother's back up plan, he is at ease. At least, he does not need to worry too much. The middle class children prefer working in the USA. But if they fail to get work in the USA, they still have connections to get a job in China.

The above conversation illustrates that the older generation of the Chinese middle class cultivate their social networks derived from *danwei* and *hukou* to help their children maintain their middle class status. The younger generation of the Chinese new middle classes show characteristics of a "post-communist personality". (Wang Xiaoying 2002; Faure 2008: 476) To prevent any possible demotion along the social strata, the Chinese new middle class resorts to extensive investment in social connections and ways of life, especially to their only child. Most of the middle class children are well-planned, flexible to change, individualistic, ambitious and aspiring in their career planning. Losing "face" is a concern deeply ingrained in Chinese culture. They try to find a good career in order not to ruin both their family and individualistic trait.

The parents of the young generation invest heavily in their children: a considerable amount of money is often reserved exclusively for their children's future. Meanwhile, some of the Chinese students already abroad may try to get some international work experience (as well as to cope with living expenses). With that kind of overseas work experience, the returnees become much better positioned to get hired back home and more likely to be in the pipeline for promotions, more so than local graduates. From my case study, some middle-class parents even invest money on their daughters to marry rich husbands in the future. As a typical example, they bought first class air tickets so that their daughters have greater chance to meet rich and highly educated men. All this supports the view that the younger generation, who have been educated overseas, are bound to have better life chances than the same younger generation who are locally educated. That, in turn, fuels the need for people to receive an overseas education, heightening the need to succeed in the education system at home and abroad.

## Conclusion

This article examines how the older generation of China's middle class makes use of their cultural and social capital to help their children secure places at transnational higher education institutions to maintain their upward generational mobility and secure the reproduction of their class status. With the expansion of an emerging Chinese new middle class, there is a huge demand for university places in South China. The transnational higher education provides an English-learning environment, critical thinking, and quality education. That attracts many middle class parents to have their children study there. By operationalizing Weberian, Neo-Weberian and Bourdieuan concept of socioeconomic status, sociocultural, and cultural capital respectively, this paper argues that China's middle class parents and their children have absolute positional advantages to receive better education. To counterbalance a credential inflation, they nurture their children to study at transnational universities, and then use these universities as a stepping stone to send their children abroad if they fail to well secure a place in some tier one universities. The private universities, however, are regarded as conspicuous consumption choices rather than an environment for fostering creativity and critical thinking. According to my ethnographic data, education becomes a kind of materialism, consumption, commercialization, class segregation, and distinction. Quality education, at least, should be quantitatively measured in the market, but not by marks and scores. With the expansion of the Chinese new middle class, private education becomes the ascription of class. Thus, to maintain the middle class privileges and status, it is still a process intertwined with cultural capital (education), social capital (*guanxi*), and political capital (cadre).

Further research about the inter-generational mobility could focus on the national level, instead of Guangdong province only. In this research, I provided the local particularities in Guangdong since it is one of the coastal provinces and enjoy more than ten per cent economic growth annually. It has many affluent middle class families. Most of the middle class could afford to pursue transnational higher education if they fail to find a place in tier one universities. It turns out both middle class parents and their children tend to be more materialistic, pragmatic, and utilitarian to get positional advantages to maintain their middle class status over generation. In reality, the aim of quality education (Rosen 2004) to foster creativity and critical thinking is somewhat neglected. Furthermore, research can fill in the

gap to examine what are the meaning of quality education in today's China. Undeniably, the educational development in the 21st century is moving toward a high degree of privatisation, consumption, and commoditization. It is high time for local and central governments to think more about the essence of quality education. Its goal should be to foster moral, and to be allowed to be critical of the CCP as a responsible citizens.

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The logo for the International Association for the Advancement of Pedagogical Research (iafor) is centered on the page. It features the word "iafor" in a light blue, lowercase, serif font. The text is enclosed within a circular frame composed of two concentric, hand-drawn style arcs. The outer arc is a light orange color, and the inner arc is a light blue color, matching the text. The overall design is minimalist and academic.

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*Independent Learning Resource Facility for English Language Learners*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012



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## Introduction

This paper is based on an action research project completed in 2011 and the follow-up actions taken in 2012.

The action research explores the feasibility of setting up an independent learning resource facility for English Language learners.

What prompted us (a team of teachers teaching 12 – 13 year old students) to embark on this was the realisation that students need more practice in language use beyond the classroom. There is not enough time in the classroom to help certain students develop the required language competencies. Something must be done to help them outside the curriculum time. We believe that we could offer our students drill and practice as a way to help more students develop their language proficiency. However, there was a lack of drill and practice resources in the school library and the public libraries. We came to realise that if we can promote independent learning and provide the learning resources needed, we can help more students to develop their language competencies without having to worry about the availability of teachers outside the classroom. There is no limit to what students can learn, as long as they are committed to learn.

Hence, we decided to use action research to determine the answers to two essential questions:

1. How can teachers promote independent learning?
2. What kind of resources can support students in independent language learning?

It is not expedient to examine the English Language results of these students after just seven weeks on the programme, so our research seeks to examine the perceptions of the Year 1 IP (Integrated Programme) students towards the provision of resources for language learning and the implementation of an independent learning programme.

In early 2012, as a result of the favourable findings of the action research project, the independent learning resource corner was set up in the library for EL learners, in our school (River Valley High School) in Singapore. Furthermore, we refined our independent learning programme to help our PAR students to use this resource facility to improve in their language proficiency. PAR stands for Pupils at Risk and it refers to those students who are at risk of not doing well enough to be promoted to the next level. In my school, if students score less than 60%, they are considered at risk.

## What is independent learning?

Independent learning is also known by a number of other terms: learner autonomy and learner independence (Sinclair, 2001). All these terms refer to a concept where learners are involved in their own learning process.

One accepted understanding of learner independence is that it ranges across a continuum (Figure 1). At one end there are dependent learners who have had little opportunity to

develop independent learning skills, and at the other end of the continuum there are learners who are self-directed, self-motivated and capable of learning without a teacher. Good learners will move gradually along the continuum with the help of peers, parents, teachers and appropriate learning experiences.

Figure 1 – The Learner Independence Continuum

Dependent Learners \_\_\_\_\_ Independent Learners

Figure 2 below has been compiled from a number of sources (Holec, 1981; Little, 1991; Dickinson, 1987; Broady & Kenning, 1996; Oxford, 1990; Barnett, 1993) and shows some of the characteristics of dependent learners and independent learners. Most learners would be somewhere in between the two extremes.

<b>Dependent Learners</b>	<b>Independent Learners</b>
rely heavily on the teacher	are self-reliant
cannot make decisions about their learning	can make informed decisions about their learning
do not know their own strengths and weaknesses	are aware of their strengths and weaknesses
think that the teacher is wholly responsible for their learning	take responsibility for their own learning, know about different strategies for learning
do not set learning goals	plan their learning and set goals
will only work when extrinsic motivators such as grades or rewards are offered	are intrinsically motivated by making progress in learning
do not reflect on how well they are learning and the reason	often reflect on the learning process and their own progress

By looking at the characteristics of independent learners from the table above, we can say that independent learning is also synonymous with self-directed learning which is a very popular term in education circles today. The salient aspects of self-directed learning are: ownership of learning, management and monitoring of own learning and extension of own learning.

Self-directed learning is defined as a very broad class of learner-initiated and regulated activities that includes activities other investigators refer to as autonomous learning activities (Thomas and Rohwer, 1986), studying (Anderson & Armbruster, 1984), metacognitive activities (Brown, 1978), self-regulated learning (Corno, 1986), and intentional learning (Bereiter & Scardamalia, 1985)

In other words, self-directed learning activities are activities that are wholly or partly under the control of the learner.

Students are viewed as ultimately responsible for their own learning.

The proper role of the teacher, in this view, is to make it possible and easy for students to carry out this responsibility while refraining from providing students with compensations that make self-directed learning unnecessary (Thomas, Strage and Curley, 1988).

### **What is drill and practice for language learning?**

It is our belief that drill and practice is one of the ways that we can offer our students in learning independently and improve in their language proficiency. However it does not mean the only way. In fact, as we progress in our research, we realise that there are other types of resources that have to be provided for independent student learning.

Drill and practice refers to the structured, repetitive review of previously learnt concepts to a predetermined level of mastery.

“It is evident that the swing, the rhythm, the momentum of sentences built up according to a definite pattern can bring about automatic reactions and produce a habit. It is only to the extent in which control over the mechanics of form is sufficiently automatic to enable the mind to concentrate primarily on function that anything approaching mastery is achieved.” (Shears, 1944)

As an instructional strategy, drill & practice is familiar to all educators. It promotes the acquisition of knowledge or skill through repetitive practice. It refers to tasks such as the memorisation of spelling or vocabulary words. There is a place for drill and practice to develop competencies (Zimmerman and Martinez, 1990). The skills built through drill-and-practice can become the building blocks for more meaningful learning.

In the context of the English Language, it means knowing our language multiplication tables, our linguistic axioms so that the reasoning powers may be freed for the proper goals of self-expression and reflective thinking.

When we provide drill and practice exercises for students in the context of self-directed learning, the students can master competencies at their own pace and in their own time. Furthermore, students are given greater responsibility for their own learning. Ownership of their own learning induces self-motivation and self-discipline which are critical to improvement and achievement.

### **Research Methodology**

First, we have to select a group of students whom we think will benefit greatly from this resource facility. We decided to focus on those who are the average and the weak language students based on the Term 1 continual assessment results (first quarter of the year).

Two students who achieved a B grade in EL (60 – 69%) were selected from each of the twelve Year 1 classes (12 – 13 year old students) to form the B group. Two students who achieved a C grade in EL (50 – 59%) were selected from each of the twelve Year 1 classes to

form the C group. We also included those students who scored less than 50% in the C group. Altogether, forty-eight Year 1 students participated in this programme. The sample size is about 12% of the population.

Resources prepared by the Year 1 EL teachers were organised into three categories. Package B (for B graders) was colour-coded green. Package C (for C graders) was coded red. The orange coded books were reference books for both B and C graders to use, when necessary. These resources were placed in the Action Research Corner in the library for easy accessibility.

The librarian was to help to issue worksheets and answer keys for them to mark and correct their own work. This would help ensure that they did their work first before checking with the answer keys. The students would know almost immediately where they had gone wrong. Encouraging self-assessment was one way used by the teachers to promote independent learning.

A briefing session was organised separately for the B group and the C group. At the session, the teachers shared the purpose, the process and the responsibilities. They had to fulfil at least two hours of independent learning in the library for seven weeks. We wanted to make sure that fourteen hours of work would give them enough time to decide whether they could benefit from a resource facility.

They could choose the kind of worksheets to work on, the areas of language to focus on, and the kind of reference resources to use. They could also decide when to do it, whether to do it alone or in groups, and how much time to spend on learning each session. They could also choose whether to write an essay or a reflection of their progress every fortnight. As for the essay, they could write on any topic. Giving them choices was another way we, teachers used to promote independent learning. Making choices would encourage our students to reflect on their own interests and preferences, and start taking responsibility for their own learning.

At the end of the briefing session, the students had to sign their contracts willingly, confirming their commitment. Since the students were embarking on an independent learning journey, we felt that they needed to be self-motivated and self-disciplined right at the beginning. They had to be personally committed to do it to ensure success. The contract asked for students to set personal goals, to seek consultation with the teacher when necessary, to be self-disciplined and conscientious in completing, marking and correcting their work, as well as to reflect on their progress and make improvements.

As teachers, we understand that leaving them to do everything on their own without monitoring their progress will spell disaster for those who are not totally independent learners. Hence, both Groups B and C had to submit their progress charts and their completed work filed in their colour-coded folders, at the end of every week, including a short reflection /essay once every fortnight. On the progress charts, they had to indicate the kind of resources used and the time taken. Teachers would check their work and sign accordingly.

Based on the progress chart and their essay or reflection submissions, the teachers could then discuss with the students about their progress and offer feedback, encouragement and suggestions to help the students make improvements in language acquisition. In this way, we got the students to set intermediate learning goals with guidance from the teachers. This is a worthwhile exercise to encourage the students to reflect and self-evaluate, thus helping them to become independent learners. An example of this is as follows:

What do I need to improve?	How will I do this?	How and when will I follow this up?
Vocabulary	<p>I will work on worksheet entitled “Easily Confused Words”.</p> <p>I will use the Sadlier-Oxford Vocabulary workshop Level A for the next two weeks.</p>	Next fortnight, I will talk to my teacher about my progress.

At the end of the seven weeks, the students completed a questionnaire. All the Year 1 teachers and the librarian gave their feedback and observations. We also talked to the students informally concerning their progress and their thoughts throughout the whole duration of seven weeks.

### Findings

The results of the questionnaire were collated separately for Groups B and C according to the following areas: benefits gained, range of helpful resources, recommendations of resources for future use, accessibility of resources, procedural convenience, language needs and obstacles faced. Below is a table of data capturing the perceptions of students concerning certain issues.

	Group B	Group C
Accessibility of resources	92%	87%
Value of resources	83%	83%
Recommendation to others	95.8%	91.6%
Obstacles faced	50%	45.8%
Suggestion for 1 hour a week	63%	54%

92% of Group B students and 87% of Group C students found it convenient to use the resources since they were located in a designated shelf in the library with clearly marked labels.

The students were also comfortable with the procedure of completing the worksheets, marking and correcting their own work. However, they needed more explanation for the mistakes made.

83% of both Group B and C students found the resources beneficial, especially in vocabulary learning of a wider range of words and phrases. They were able to distinguish easily confused words and were using them in their fortnightly reflection /essay submissions. They found the in-house worksheets useful because they included the mistakes from their daily assignments and were structured in such a way as to guide them to arrive at the right answers. However, they wanted more resources in grammar, vocabulary, writing and comprehension. When asked about the language skills that they needed more practice in, the majority of the students indicated writing and vocabulary skills.

95.8% of Group B students and 91.6% of Group C students would recommend this resource facility to their friends. They saw the resources as being helpful in improving the needed language skills.

The comments are as below:

“It has improved my English so much and the worksheets are easy to understand and manageable.”

“My English results improved quite a lot.”

“From a D7 I managed to achieve a B3.”

“My English improved by 1 grade.”

Some of them appreciated the cultivation of self-discipline and an independent learning attitude.

“It is quite useful and trains us in self-discipline.”

“It allows us to be more independent in our studies.”

“It is very useful as we can revise and improve our English without the stress of teachers around.”

The librarian made some observations and had this to say: “I had seen the seriousness of the Year 1 students in actively participating in the project. They had shown great initiative and pro-activeness by coming to the library after school (on days without CCA or other activities) and diligently completing the papers prepared for them. It is very encouraging to see these students displaying such a positive attitude in their quest to improve their English and of course the efforts by the EL teachers to set up such a programme for them. On a side-note, I even had students (Year 2/3) asking if they could take the papers for their own practice as well.”

50% of Group B students and 45.8% of students found it difficult to keep to the schedule because of co-curricular activities, homework and tests that competed with the use of their

time each week. However, they managed to make up for it and completed the fourteen hours required for this study.

As such, 63% of Group B students and 54% of Group C students suggested that it would be more manageable to devote just one hour a week to independent learning in the library.

### **Strengths of this Study**

1. The participants were briefed clearly and so they understood their responsibilities. The signed contracts sealed their commitment.
2. All twelve Year 1 classes participated and thus offered a good representative sample.
3. The teachers built certain elements in the programme to promote independent learning such as giving them choices, getting them to reflect on their progress and set intermediate learning goals, as well as involving them in self-assessment. Creating a resource facility without helping them to be independent learners will not bring about positive results in their language learning.

### **Weaknesses of this Study**

1. The resources for the students during this action research were limited because they came from our own collections. The school could not possibly buy them within a short time because of purchase requirements.
2. The students were busy and they could not put in two hours every week. Nevertheless, they did put in the required total of fourteen hours for this programme.

### **Conclusion**

In this action research project, the student participants benefited from using the drill & practice as well as the reference books on their own. They were happy to recommend to their friends at both Year 1 and year 2 levels because they have seen the value of independent learning using these resources.

### **Recommendations**

1. We will set up an Independent Learning Resource Facility for English Language learners in the library in 2012.
2. More resources will be bought, especially those regarding Vocabulary usage and Writing skills. They include both reference books and drill & practice books.
3. EL teachers will draw up an independent learning programme in consultation with the weaker students to address their language needs.

4. EL teachers will provide more learning support for those who may not understand the basis / rationale for the answers. Students can arrange for individual or group consultation with their respective EL teachers.

### **Follow-up Actions in 2012**

All the recommendations were implemented early this year.

To date, our independent learning resource facility for EL learners has 115 titles, covering grammar, vocabulary, writing, comprehension, reference books, graded readers, SRA Reading Laboratory kits and in-house worksheets.

Besides providing more learning resources, we have also refined our programme for weaker language students to help them use these resources. First, we conducted a survey of their language needs. Then we discussed with individual students their learning goals and got them started on independent learning. We still monitored their progress and helped them maximise the use of these resources. We provided consultation for those who needed further explanation for the mistakes made.

We recognise that an independent resource facility should not just be confined to a physical space with physical resources. A lot of online resources have sprung up over the years.

To provide students with more choices and more convenience to meet their language needs, we have enrolled students in a Criterion Programme which is powered by e-rater's<sup>®</sup> automated scoring technology to provide students with immediate scoring and diagnostic feedback on essays they submit. The Holistic Scores are based on nationally recognized standards. The Trait Feedback Analysis focuses on grammar, usage and mechanics; style; and organization and development. This analysis provides both a summary and in-depth analysis of errors in an effort to pinpoint areas that require attention.

We have also introduced to students [www.vocabulary.com](http://www.vocabulary.com) which enables students to create their own vocabulary lists and then to review their lists regularly so that they can eventually use the words daily. We have also helped students to use the interactive resources in the Edmodo app on iPad.

Let me end by sharing with you some of the other online independent learning resource facilities that I have not mentioned earlier and that may be suitable for your students.

1. <http://www.bbc.co.uk/worldservice/learningenglish/index.shtml>
2. <http://english-zone.com/index.php>
3. <http://www.johnsesl.com/>
4. <http://www.eslpartyland.com/>
5. <http://www.manythings.org/>
6. <http://owl.english.purdue.edu/>
7. <http://www.esl-lab.com/>

8. <http://unilearning.uow.edu.au/main.html>
9. <http://www.world-english.org/>

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The logo for the International Association for the Advancement of Pedagogical Research (iafor) is centered on the page. It features the word "iafor" in a light blue, lowercase, serif font. The text is enclosed within a large, stylized circular graphic composed of two concentric arcs, one in a light blue color and the other in a light red color, creating a partial circular frame around the text.

*Has the West Lost Sight of the Meaning of Education ?*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012



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The West is currently facing a profound crisis in its educational system whose causes are multiple and complex. A closer look at the phenomenon, however, reveals that the foundations of a particular “ideological” approach merit examination. This paper proposes such an analysis by focusing on a quasi-organic loss of values associated with education, including elevation, emulation, and discipline, that have become so diluted that they are no longer present because they are no longer internalized.

Further, placing students at the center of the system has provoked an inversion in which everything related to work and effort has lost its value. This has been fueled by a consumer society in which marketing, advertising, and new technologies lead to the belief that one need only hold out one’s hand to instantly demand—and receive--the slightest object of one’s desire. This raises the possibility that certain alternative philosophies and paths to wisdom, like the martial arts, might be able to reintroduce common sense and harmony that could contribute to the rebirth of something that deserves to be called education by re-introducing teaching that focuses on cross-cultural communication.

### **I) In Search of Lost Education**

Early in the 2012 school year in France, a number of news items shocked French public opinion. It was reported that students and even parents had committed acts of exceptional violence—both verbal and physical--towards teachers.

The increasing frequency of such incidents in contemporary societies are evidence of the degradation of school environments by constant chatter, rudeness, and incivility.

A variety of public figures and organizations have spoken out in recent years concerning the bankruptcy of our educational systems and a “rising tide of ignorance.” While some international organizations continue to work in favor of “Education First” (the title of a recent United Nations campaign) and governments have created positions such as “Ministerial Delegate For the Prevention of School Violence,” the deep causes of this widespread dysfunction have thus far defied explanation, and the solutions have proven equally elusive. Clearly, Western societies currently face a problem of civilization whose symptoms are profoundly worrisome: As the Ancient Greeks pointed out, when children no longer respect their elders, barbarianism will take over.

Indeed, the transmission of knowledge and of the values linked to it no longer appears to function in our societies. Two statistics suffice to support this assertion: A reported 50% dropout rate in American public schools, and the inability of fully 25% of students entering the first year of *collège* or middle school in France (what we call the 6<sup>th</sup> form or *sixième*) to either read or count.

In fact, we appear to be witnessing a process of de-culturation, in which any trace of formalism is rejected and, paradoxically, education under the present conditions causes a child to be mal-adapted for living in society!

According to the sociologist Edgar Morin, “the new obscurantism (...) has now descended from the summits of culture; it is growing within the very heart of knowledge while remaining invisible to most of the producers of knowledge” particularly in European cultures that have institutionalized this knowledge. Some studies also question the role of mass culture and the exploitation of psychological weaknesses in a consumer society that only obeys the economic laws of the market-place.

From this perspective, in an environment of near-universal entertainment, knowledge has become the object of a “process of destruction” in which teachers are denigrated and compelled to become entertainers, leading to profound impoverishment of their standards amidst complaints that they lack the material means to perform their jobs. Factors cited as contributing to this erosion include competition from television, the Internet, and video games (35% of young people spend five hours per day in front of a screen), as we become increasingly connected to communicational activity thanks to rapidly developing technologies that are widely assumed to encourage violence.

Parents have even been known to raise their babies in front of the television. A study by the French psychiatrist Serge Tisseron has shown that this has the counter-intuitive effect of damaging children’s cognitive development: “without moving and with their eyes glued to the screen, the child learns instability.”

Objections will be raised that, because globalization is complicated, diverse, and coproduced differently, not every culture has been affected in the same way and today’s students develop new virtual abilities and learn to participate in a new collective intelligence through their encounters with intersecting electronic screens.

Are there not deeper causes associated with the loss of meaning in the contemporary world that “offer themselves for reflection,” to quote the philosopher Paul Ricoeur, “under the double sign of growing rationality and growing absurdity”? Is it possible that a particular ideology that banishes taboos and preaches egalitarianism has made possible the slackness that is a major obstacle to the educational process, even if we can also observe a return to discipline? From this perspective, current changes in education include suppressing grading because they are judged to be a means of sanctioning students and no longer as a method for evaluating their progress. Diagnoses and proposals for reform from every political source appear hopeless when education seems simply to have gone missing, even within the family.

What perspectives might be able to help us to rediscover the meaning of the values of education? The section that follows suggests possible inspiration in other cultural traditions.

## **II) Alternative Paths to Knowledge**

Alternative solutions to the problems of education have suggested. One study conducted recently in France has found that young people of Asian origin tend to show higher levels of school

achievement than children of other origins. Among the study's findings are that French-Asian children reportedly do not question the teacher's role as an authority figure. Another interesting viewpoint arises from the controversy surrounding the recent book, *The Battle Hymn of the Tiger Mother*, by the Chinese-American academic Amy Chua. Chua's book explains how the major principles of Chinese education, grounded in the quest for excellence, forbid such distractions as television and video games. The book has been sharply criticized and, it seems to me, misunderstood, by a number of readers who believe that children should in fact have more time for themselves because "as soon as they begin to study that are already tired"!

This is a cultural conflict between West and East, in which two value systems confront each other without mutual understanding: What is perceived as emulation by one side is considered to represent humiliation by the other; authority is denigrated for some, while permissiveness is criticized by others.

This leads to the following question: What paths to better understanding might enable "foreign" experiences to be seen as meaningful and become integrated into Western models of learning? Further, how can the original principles of Western education, which have become dulled or forgotten, become revived by the resources of other cultures that have preserved the means of providing access to knowledge through education?

For students, developing a consciousness that allows them to accept limits and to be naturally attentive goes well beyond an exclusively intellectual approach. These approaches pose particular problems in deeply Cartesian countries such as France. Progress and modernity do, however, go hand-in-glove with certain recent findings in the "sciences of the mind" that are in fact thousands of years old. One example among others worth citing is the creation of The Mind and Life Institute by Francisco Varela in 1987.

One such method that has been proposed focuses on the development of total awareness. Professor Kabat-Zinn's MBSR program (Mindfulness-based Stress Reduction) is based on Buddhist-inspired meditation and has been applied in American schools. The program will be implemented in Japanese hospitals in the near future and has been scientifically shown to improve attention span and concentration. Sports and artistic activities also offer promising potential pathways when approached from such a perspective.

Within these rediscoveries, the martial arts, having accompanied mankind's evolution for so long, hold particular potential, because they are motivated by a philosophy that prizes wisdom and that offers a path towards changing young peoples' awareness or "mindfulness."

*Budô*—introspective exploration—is not easily reconciled with Western tradition. It allows the entire being's resources to become mobilized, transcending the purely intellectual level. A heightened awareness that encompasses the intelligence of the heart engenders a new alliance between the individual and the universe and nature, as well as other interpersonal relationships that go beyond alterity. Describing *aikido*, which I have personally practiced, Georges Brunon has asserted that "we perceive, when we enter into the creative gesture, that a certain approach to the body allows us to transform that which was previously only physical into the corporeal. This

new corporeal self reveals itself to be a dynamic that introduces us to act of creation, an act that applies not only to people whom we call artists but to every one of us.”

The question, then, is whether the gradual progression towards discovery and self-fulfillment offered by the martial arts, as well as contributing to the fulfillment of others (which is somewhat far-removed from the original combat techniques from which it evolved) can offer a path towards love in a society of violence. Conceivably, students and teachers could thereby discover new ways of thinking and a new educational communication by adopting this way of living, transforming the anarchy of information into knowledge and wisdom, and reintroducing temporality that is not a mere artifact of technological “real time.”

For this to take place, however, the teaching of cross-cultural communication needs to be more fully-developed, which would enable students to learn to be open to new potentialities.

Indeed, pursuing the thinking of the anthropologist Edward Hall, we need to bring to light “cultural interfaces” that are indispensable to every authentic exchange, in other words, we must become capable of establishing systems that enable us to be in phase with other cultures. Only in this way can we establish fertile exchanges between East and West, especially in the critical field of education.

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*Value Innovation in Learner-Centered Design. How to Develop Relevant Digital Learning Tools.*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

This paper shows how to address technological, cultural and social transformations with empirically grounded innovation. Areas in transition such as higher education and learning techniques today bring about new needs and opportunities for innovative tools and services. But how do we find these tools? The paper argues for using a strategy of (user) value innovation that creatively combines ethnographic methods with strategic industry analysis. By focusing on unmet and emerging needs ethnographic research identifies learner values, needs and challenges but does not determine solutions. Blue-ocean strategy tools can identify new opportunities that alter existing offerings but give weak guidance on what will be most relevant to users. The triangulation of both is illustrated through an innovation project in higher education in Germany.

**Keywords:** User needs and values, innovation, learner-centered design, ethnography, blue ocean strategy, triangulation

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## 1. Introduction

The reality of university students is in transition. New rules and regulations govern their education. Expectations from industry and society and their own self-image change while emerging digital tools uproot time-tested methods of studying. In Europe the Bologna process fostering comparability in educational standards and ensuring quality of qualifications is only one visible cornerstone of substantial changes driven by trends such as globalization, mobile digitalization, and the knowledge economy. All stakeholders are being affected: Far from their old image of ivory towers, universities struggle to cope with the mass inrush of students. Still holding on to the Humboldtian model of unity between research and teaching, teachers are torn between their own scientific curiosity within an overwhelming body of knowledge and the demand to deliver innovative approaches to teaching and learning. Students are often overstrained by requirements resembling those of corporate managers but without having the resources and tools that professionals use. The scope and multitude of these transformations explain why educational technologies have struggled to keep up with providing the best potential support to students and professors. All this demonstrates the need for innovative tools and services outlining a new field for innovation in the higher education domain. But how can we support learners in dealing with the transformation in the educational systems and media landscapes? How can we grasp and specify opportunities for innovation in such a transitory field?

While numerous ways have been proposed to generate ideas at the fuzzy front end of innovation management and to position new products in a market, what is lacking is a consistent perspective on the theoretical and operational links between them. We suggest that the notion of value may provide such a theoretical perspective and a consistent anchor for the different activities involved in innovation. Our argument is based on the assumption that it is the purpose of business to create value for people and society. What is of value to individuals and to cultures, however, changes in eras and areas of transformation, like those currently taking place in domains like the financial systems or higher education. A profound understanding of what is of value at a given historical moment is required to create relevant value propositions and enable sustainable new business. In order to comprehend what is valuable to people we need to understand their needs and their values.

On a theoretical level, we contrast different notions of value and propose an integrated concept of “value innovation” in order to create solutions that are both, valuable and relevant as well as novel, innovative and different. Value innovation combines user-centered with market-strategic approaches in order to create substantial new value for users by serving new or insufficiently fulfilled needs or by supporting inadequately supported values. Ethnographic research is good at identifying learner needs, desires, values and challenges but cannot define which solutions are viable. Blue-ocean strategy techniques are able to identify new opportunities from existing offerings but can only provide weak guidance on what will be truly relevant to users. We illustrate our suggested approach of creatively combining both approaches through a recent innovation project in learner centered design in Germany. The project on learning management tools and services demonstrates how the triangulation of both approaches can help to generate qualified product ideas and maintain focus throughout innovation projects.

## 2. Value innovation in learner-centered design: Related works and theory

For laying out our thoughts on value innovation we build on scholarly work on learner-centered design (e.g. Breuer & Matsumoto 2011), ethnographic explorations of customer needs, and grounded innovation theorizing (Breuer & Steinhoff 2010).

A key role is played here by the **notion of value**. Often in discussions in economic or business contexts the notion of value refers to monetary value or price, what Marx had called exchange value, and is closely linked to profit considerations. Yet in our discussion on value innovation we understand the term “value” to refer to the value that products have or create for the user outside of its exchange value – how valuable it is for them in their use or in their life. There are several ways, however, in which a product can have value for users (Boztepe 2003). Of interest here at least three: products can be valuable because they have utility, because they fulfill people’s (emotional) needs, or because they support their values (note the distinction here between “values” and “value”). We argue that in order to be successful, value innovation needs to take seriously the latter two meanings of value.

The most common view of value when referring to use, points to a product’s utility, its practical purpose and functionality. Accordingly a wide-spread strategy for developing new products is making them useful in new ways or enabling new uses. Along these lines, in the Marxist tradition use value refers to utility and the physical properties of a product in use (Marx 1962). Marx pointed out that in order to create use value the producer had to imagine what is useful to people and build that into the product. This imagining of usefulness is not a trivial task, however, and Marx did not specify how to determine what is useful, nor did he move beyond a quite practical but somewhat limited understanding of use and usefulness. Baudrillard (1991) later criticized Marx’ “naturalistic phantasm” of utility value and complemented the functional dimension with a symbolic dimension of products, which are not only appreciated for what they do but for what they signify, resulting in their sign value. This way Baudrillard emphasized the importance of an understanding of value that includes emotional, social and identity-related aspects beyond purely functional ones.

We believe that a forward-looking understanding of user value needs to move beyond utility and pay attention to people’s needs (especially their emotional needs), and values. Although the attention in the business world to customer need fulfillment has been growing in recent years, this perspective is far from a given and there are still a lot of innovation attempts that fail by failing to serve people’s needs. Yet while needs are on the radar of companies at least to some degree, the value of supporting customer values and goals has received less attention. A notable exception is Schrage (2012) who demands that product innovation should not only address customers’ needs but also their desired futures – answering the question who customers want or need to become. Therefore it is important to analyze their personal, communal and cultural values. The distinction between needs and values may be worth pointing out. Needs always refer to a lack; they are experienced individually and often emotionally as part of a mental state of being. Values in contrast are directions for human action by pointing to ideals. They do not just belong to one individual, rather they are shared by cultures or communities or social groups, and like needs are not always conscious. Values can motivate and guide needs, preferences, wants and goals of people, and influence the interpretation of needs as well as decision making.

A focus on both needs and values is especially crucial when innovation is planned for domains in transformation, as it is the case in our example of digital learning tools or techniques in higher education. Change, whether it is technological, social or cultural, often changes existing or generates new needs and values. The task and opportunity for value innovation lies in uncovering and addressing these shifting and newly emerging needs and values. In short, a comprehensive notion of value innovations should recognize and include the value created by fulfilling people’s emotional needs and by supporting or promoting their values, in particular if applied to shifting everyday practices, social domains or technological fields. In order to involve customers to help create value

and to inform the innovation processes companies (or administrations) have employed a range of structured approaches, from traditional market research to advanced user studies.

In recent decades especially **ethnographic research** has become a preferred approach to see the world from a customer point of view, by studying them in their natural habitat and by using observation and participation as research techniques in addition to conversation and interviews (Atkinson & Hammersley 1994). The key reason for the growing attention to ethnography in commercial contexts lies in its promise to enable the creation of value for customers and thus ensure the relevancy of new products, services and marketing activities.

The characteristics and specific qualities responsible for the claimed success of ethnographic insights have been widely discussed in the last decade (Sutherland & Denny 2007, Cefkin 2009, Jordan 2002, Mariampolski 2005, Bockhahn & Schwarz 2010): Ethnographic insights are seen as more real and more true to the actual way people behave, think and make decisions than other methods. They are seen as going further and deeper than traditional market research in that they capture not just the rational but also the emotional side of people's experience and their interactions with the world. They are seen as less reductionist since they see people as part of social and cultural systems rather than simply as individuals with independent behavior. Finally, ethnographic insights are seen to capture not just behavior and opinions but moreover uncover intangibles such as e.g. needs and problems, fears and hopes, ambitions and values of people. In short, ethnographic research has been established as a source of deep insight into why people behave the way they do and what they intimately wish and need.

Yet such a rich and deep understanding of customers' needs does not per se lead to novel and innovative solutions. But we argue that ethnographic inquiry can encourage new ideas, for one due to its exploratory nature. In contrast to hypothesis-based research or testing methods, the open mind approach of ethnographic practice leaves the door open to findings and observations that are not pre-defined, anticipated or expected and therefore carry the potential to be surprising and new (Lindlof & Taylor 2002). Yet more importantly ethnographic research can **facilitate the development of new solutions in at least four ways**: by focusing on unmet needs; by concentrating on latent or hidden needs, values and motives; by aiming at newly emerging needs and desires; and by paying attention to workarounds.

First, focusing on unpacking people's needs that are currently not or not sufficiently met, the product opportunities defined by these needs are by definition not already filled by existing products. If the right offerings were already available to customers these needs would not remain unfulfilled. For reasons ranging from a lack of knowledge, accessibility, availability, to a poor overall configuration of products, the unmet need indicates openings for an innovative product offering, communication or distribution system.

Second, by uncovering latent or hidden needs, problems and values, ethnography increases the likelihood to discover new or untapped opportunities. If needs or values are hidden they are not easily discovered by traditional research approaches and thus are probably not yet part of the public discourse and general awareness. Invisible cultural patterns and taken for granted cultural beliefs and preferences are unknown to most people. People also do not always have access to the emotional drivers underlying their own decisions; rather motives tend to get rationalized after the event. Finally, people's ideals and impression management often obscure the reality of their lives and selves, not only to outsiders but also to themselves. By not solely relying on what people consciously

articulate but rather by utilizing nonverbal cues, material artifacts, situational contexts and actual behavior and taking seriously seeming contradiction, ethnography may both circumvent the impression management of people and unpack hidden drivers and motives.

Third, investigating newly emerging needs and desires is likely to point towards new opportunities that can lead to novel solutions. Needs change in accordance with societal structures, cultural practices, and new means of satisfying needs. New needs surfacing in a situation of cultural or social transformation and technological change are different from existing and established needs, and so must be the solutions designed to address them. For instance, the unfolding needs and desires of students, who find themselves in an environment with heightened expectations on their performance and defined by a challenging mix of analog and digital learning tools and techniques, tend to resonate with this unique situation and cannot be served with old solutions, products and services.

Fourth, by paying attention to everyday practices and routines, ethnography frequently finds workarounds that people use. These are ad-hoc, improvised and often personal strategies that people employ to reach their goals in the face of challenges or in situations lacking established solutions and existing products. Sometimes workarounds carry the seed for the type of solution that is required. When a mother tapes her phone to the baby stroller so that she can write text messages while pushing her child, there is a cue to a potential design solution. Like the inventions of lead users, workarounds found by ethnographic research can provide interesting pointers towards innovative solutions.

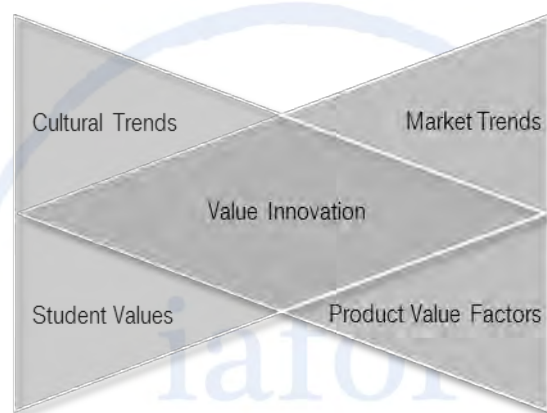
In sum, a focus in ethnographic research on unmet, hidden and newly emerging needs, motives and values and on everyday workarounds may guide the search for new solutions into new and uncharted territory. Yet, despite directing a guiding light into untapped directions and offering some inspirations for solutions or user requirements, an ethnographic approach cannot pre-determine these solutions, guarantee their novelty, and ensure their potential for business. Other techniques must complement the ethnographic approach.

Particularly, in order to turn ideas on potentially valuable solutions into an innovation on a marketplace knowledge of this marketplace is required. Strategic approaches like **blue ocean analysis** (Kim & Mauborgne 2005) aim at such an understanding of the strategic market value that new products and services can capture. Referring to the renewal of corporate strategy rather than to incremental innovation in established business Kim & Mauborgne (2005, 218) remark that “value innovation is about redefining the problem an industry focuses on rather than finding solutions to existing problems”. Putting a notion of (buyer) value and a focus on non-incremental innovation into the center of attention blue ocean analytical tools and frameworks suit to the attempt to drive innovation based on empirical customer values.

It is important to point out the differences between our concept of ‘value innovation’ based on real customer insights and the notion of value innovation on a corporate strategy level used in the literature on blue ocean strategy. Kim & Mauborgne (2005) discuss value innovation as strategic renewal impacting the corporate activity system rather than innovation in the sense of new product development. Their concept focuses on the notion of exchange value as discussed above, and defines value through the alignment of innovation with utility, price and cost positions (2005, 13) and distinguishes between buyer value and company value. As buyer value is comprised of utility and price of a product, and company value is comprised of price and cost structure both may be remodeled in order to create or enter into an “uncontested market space”. Trying to transcend established market boundaries and industry structure blue ocean strategy remains related to both as

defined by the competition on the rather macroscopic level that is closely related to business model innovation. While such market analysis can identify potential new markets, the relevancy of the assumed, the potential real values for users, cannot be determined by it.

Combining market analysis and ethnographic approaches through the notion of value, in this paper we follow a user-centered and learner-centered paradigm, in which value is defined by the user or learner. The **value proposition** links business to the existential needs and motivations of different groups of people, and thereby the existential reason for the whole endeavor, the job to be done. A value proposition not only describes the functional utility, or what something can do, but also implies personal needs and values. Value innovation then refers to the empirically grounded development of new and relevant value propositions. Value innovation in our understanding is based on functional, emotional and symbolic user needs and values, backed up by cultural trends, intersecting with novel product value factors (functional, emotional and symbolic ones) backed up by market trends.



**Figure 1.** Value Innovation is based on an understanding of user / student values (backed up by cultural trends) intersecting with new product utility factors (backed up by market trends).

### 3. Methodology for identifying a potential value innovation

Based on this understanding of value innovation we suggest the following methodological approach within fields of cultural transformation such as today's higher education domain.

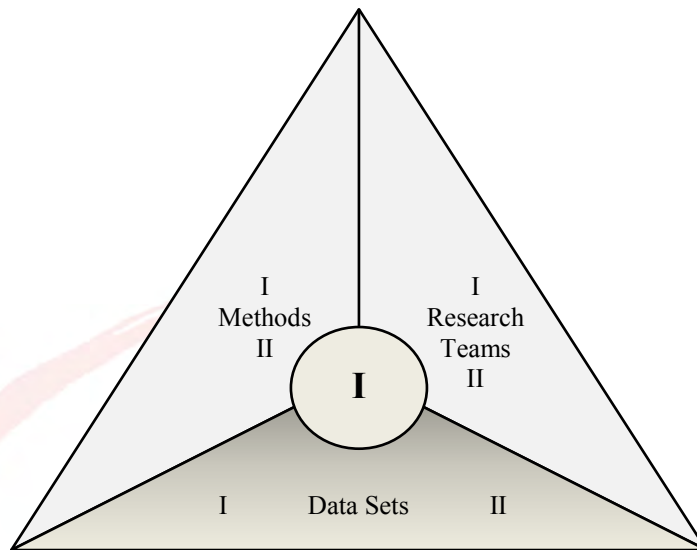
- A deep immersion into the world of the customer through ethnographic methods.
- Competitive analysis and contrasting market boundaries based on desk research and expert driven business modeling.
- Triangulation of both perspectives supports the creative generation of qualified product ideas and value propositions that also allow to maintain focus throughout innovation projects.

Immersion into students' lives is meant to yield insights into the nature of learning activities and challenges, reoccurring routines, obstacles, workarounds and problems as well as unfulfilled needs and values. **Participant observers** of students focus on unmet, hidden and newly emerging needs, values and motives and pay attention to workarounds in order to lay the direction for potentially novel perspectives and solutions. In order to do so it may be important to observe students in key learning situations, individual and social ones, in their homes and at other learning locations; to explore both digital and analog ways of studying, organizing material and note-taking etc.; and to

investigate what it means to be a student today more broadly. In order to analyze the current market **desk research** may proceed top down starting from global trends (such as the trend towards lifelong learning or the increasing importance of peer learning), or bottom up looking up relevant keywords in order to retrieve inspiring cases in terms of new products, new business (e.g. startups and corporate ventures) and emerging platforms and ecosystems. Most interesting cases may be shortlisted based on criteria such as e.g. market reach, novelty, time to mainstream adoption and attractiveness of the business model being pursued.

Looking into a specific market or product category (such as learning-management systems or digital textbooks) competitive factors of existing offerings represent the dimensions on which products within this category compete, e.g. the price or feature range or editing capabilities of a digital textbook. In **blue ocean strategy** a “value curve” is used to depict corporate or product scores on the main competing factors. The value curves of competitors are used to identify potentials for variation and extension. The so-called “four actions framework” promotes four kinds of variation to the main competing factors within an industry in order to generate a new buyer value curve. Variation eliminates, reduces or raises factors below or above the industry’s standard or (in line with our approach to identify empirically grounded value innovation) creates new factors. It aims at increasing buyer value by optimizing utility and price, and to increase company value by optimizing price and cost structures (Kim & Mauborgne 2005, 17). The identification of new competitive factors plays the decisive role in the attempt to create substantially new value for users. Several methods may be applied to identify new and unique product factors (such as a learner-centered modularity of content organized around learning goals in the case of digital textbooks). The ethnographically grounded approach to value innovation bears the greatest potential to introduce new product factors to blue ocean analysis based on a profound understanding of changing values of individuals and society. Such understanding is a sound basis for knowing which factors to eliminate-reduce-raise-create, and for knowing why to do so.

**Triangulation** makes it possible to scrutinize a problem from various sides in order to validate results and enable a broad understanding from multiple angles. The methodological and data sets triangulation suggested here can be also complemented by a triangulation with respect to researcher. According to Denzin (1970) researcher triangulation involves different researchers during observation or data analysis. It is based on the assumption that participation of more than one researcher can mitigate the problem of conflicts of interest that may appear if it is the same researcher who both formulates a theory and empirically examines its research results. Also, different skills and backgrounds on behalf of different researchers may enrich the elaboration of results.



**Figure 2.** Triangulation of methods (I ethnography and II blue ocean), research teams (I anthropologists and II market researcher) and data sets (I on student life and values and II market state and benchmarks); results are synthesized in workshops aiming to find ideas for value innovation through interference of diverse knowledge types.

In this case, triangulating an empirically grounded understanding of learner values with knowledge about alternative market positions creates a productive foundation for identifying qualified ideas for new value propositions and offerings. Doing so still requires a vivid confrontation of different perspectives and (implicit and explicit) knowledge. The typical format for this is a workshop where carefully selected representatives bringing to the table different kinds of knowledge interact in a live environment. A moderator and group exercises push participants to take their thinking off the beaten tracks of convention. Shifts in perspective are further encouraged through external participants, a thorough preparation and utilization of instructions and media, and specific communication techniques like ad-hoc visual documentation of discussions. Such an interactive environment of changing conditions aims at helping the actors generate new knowledge and ideas.

#### 4. A Case on Learner-Centered Design

As an illustration for describing the approach and methodology for identifying a potential value innovation we use a recent innovation project in higher education in Germany. The project had the goal to identify potential new learner-centered tools and services for university students with high business potential. As suggested above, three different research methods were applied and combined to achieve a broader and deeper understanding of the topic at hand: Ethnography, desk research and blue ocean market analysis. The ethnographic part and the analytical part were each performed by two different research teams from different service providers, one specialized in market analysis, the other in ethnographic research.

##### 4.1. Ethnographic research setup and results

One of the main challenges was to capture the broad variety of today's students' learning activities interests and values – and to find corresponding participants. Our sample contained 11 students between 19 and 27 who studied in or around Berlin, Germany. We strove for a balance between

female and male, freshmen and advanced students, and students from different disciplines (law, business, and social sciences & humanities). The context and content of learning, learning techniques applied, as well as learning problems and needs differ widely depending on the discipline or desired degree. We wanted to understand not just learning activities in a narrow sense but also the organization of university life including issues like time management and collaborative learning.

The ethnographic research had two parts: participatory observation with ethnographic in-depth interviews followed by self-observation with online diaries. The observation aimed at understanding students' daily routines and different learning situations in order to identify latent, unmet or newly emerging needs and problems. Researchers participated in lectures and seminars, accompanied the students to study groups or library visits. The observations usually took two to three hours and were followed by a three-hour semi-structured interview in the student's familiar environment, usually their home. The interviews were designed to explore students' motivation, their social interactions, their learning behavior and strategies, the digital and analogue tools they used and student life in general. The second research part consisted of a five-day online diary. Students were asked to describe their learning activities, the use of digital and analogue tools, and potential problems and challenges. They were also encouraged to describe their motivation, dreams and ambitions by using pictures and short texts. The self-descriptive data helped to enrich and put into perspective the insights gained during field research.

The results were analyzed in a ten-day process of identifying patterns in the data collected and subsequent insight development. One result, for example, revealed that most of the students were struggling with time problems. Due to increasing study and difficulties to efficiently manage the time, nearly every student complained about running out of time and time pressure. Literature research, for example, appeared to be an especially time-consuming and costly activity. One of the students complained about finding and getting literature: "I usually dedicate my Saturdays for searching for books, getting them, going through them and copying the chapters we need." Other students reported on their struggles with limited access to online books and journals, especially from home, difficulty in assessing which article or book is worth reading, lack of overview and centralized control over different lending sources and costs caused by purchasing articles and lending fees. The observations also revealed some workarounds such as for instance checking reviews in Amazon before lending a book in order to save time.

More specifically, ethnographic research and analysis led to four different need or value clusters:

1. "Quality of learning" was reflected by students' complaints about poor quality of educational materials and a lack of support when needed. The cluster also refers to students' concerns about the quality of their education and their needs for effective learning techniques, from note taking and marking up digital content to understanding and memorizing content.
2. "Motivation" illustrates students' needs for motivational support during the semester and the whole period of studies, their wish to sweeten study activities through little rewards and pleasures, their strong desire for feedback on learning outcomes, and their need to assess labor and time investments and progress in knowledge and skills.
3. The "efficiency" cluster describes students' need to manage time and organize learning activities efficiently in an environment free from distractions. This includes the need to coordinate group activities and exchange insights and materials, also easy literature searching and quick access.

4. “Productivity / organizing” deals with students’ need for easy-to-use resources, well organized and managed study material, a flexible move between analogue and digital material, as well as ubiquitous but one-place access.

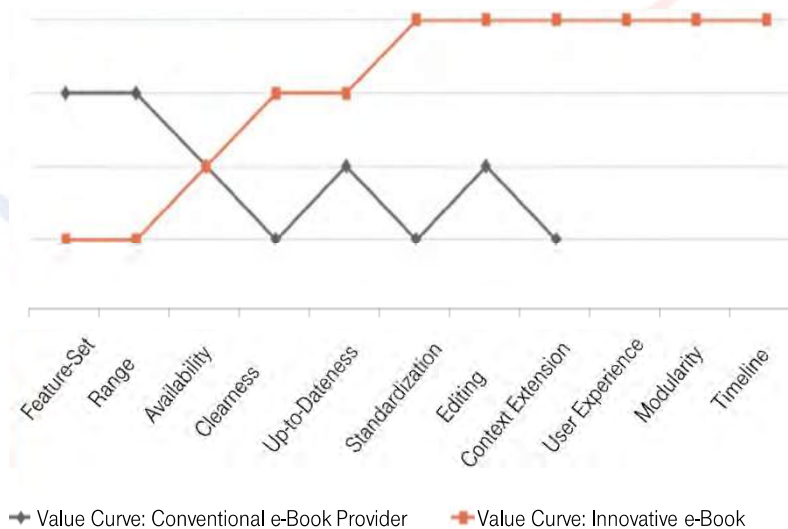
These results were then explored in a concept workshop with the goal to develop product ideas based on the obtained student needs.

#### 4.2. Desk Research and Blue Ocean

In order to understand the educational market and educational trends a comprehensive desk research was conducted based on a wide screening of relevant publications and start-ups in the field of education. It identified a number of socio-economic and technological drivers, such as a growing demand for education and reorganization of knowledge, to name just a few. Based on these drivers six key educational trends were derived. Examples include:

- Open education: the growing amount of teaching content online and learner-generated content available (Breuer & Matsumoto 2011),
- Edutainment – implementation of game mechanics in processes of learning, and
- Enriched content – integration of audiovisual interactive and social media elements into traditional content formats.

Some of the trend fields that resulted from desk research (e.g. enriched digital content) were selected for close examination. A blue ocean workshop was designed to identify various value curves of brands and products in order to distinguish the potential new business from its competitors. Creative sessions involving “learning from other brands” and “brainstorming with megatrends” revealed competitive factors for developing an innovative learning management system e.g. based on an increase or creation of flexibility, openness, personality development, emotions, fun and world of experience. Informed by the trend of *enriched digital content* and the empirical student need to quickly assess and find suitable literature, the attendees created new ideas for modular digital textbooks such as the concept of “Digital ConText Book”.



**Figure 3.** The value curve depicts corporate scores on the main competing factors of digital content providers.

Its modular structure allows to focus on educational content and learning goals. Students can purchase and work with relevant parts of a publication and do not have to buy an article or a book as a whole. They can also subscribe to topics they are interested in to get content from different journals, papers, single chapters of a book. In addition, learning materials, learner-generated content and documents can be matched to one's personal learning progress. Students can view and edit content that is created or organized and validated by a lecturer. The idea of a "Digital ConText Book" satisfies different needs identified through ethnographic research, e.g. the need for easy literature searching and access from different work locations. It offers efficiency that do not exist on the market yet and an added value by guaranteeing high quality of materials, providing flexibility in note taking and text marking, and allowing feedback on the progress in knowledge and skills, thus providing for a sense of overview and success.

#### **4.3. Synthesis**

Due to integrating the two perspectives of ethnographic research and blue ocean analysis the obtained results enriched and encouraged each other. On the one hand student needs and values, desires and problems described above could not be identified through desk research or blue ocean strategies but rather only through a deep immersion into the students' worlds by using ethnographic methods. On the other hand ethnographic research cannot yield an overview over the educational market, its competitors and market niches. Only in combination can the derived ideas create a new market and meet customers' needs at the same time. Results of each methodological approach have not only enriched each other but also encouraged the project teams' assumption that the search field of higher education bares substantial and qualified business opportunities. These are based on uncovered customer values and needs and may be served by an industry that currently does not provide them.

#### **5. Conclusions**

We described a green-field approach on how to drive innovation in user- and learner-centered solutions based on an empirical understanding of student values, needs, and requirements (e.g. in terms of efficiency and time-management). Ethnographic results and a clear understanding of the strategic market position based on extended value curves informed strategic decisions and specification of propositions. Novel solutions were generated e.g. providing enhanced contexts to learning materials. Encouraged through their participation in the discovery of real user needs, values and strategic options the business owners gained sufficient confidence in the concepts to invest in their development within a newly found business unit. First patent applications are underway. Their specification, implementation, marketing and validation in the marketplace are work in progress. Future review must show if a potential success of propositions may be traced back to these value-based concepts. So far, understanding user values, needs and desires, and strategic market analysis already created the indispensable basis for the attempt to develop new and relevant products and to establish sustainable business.

#### **Acknowledgements**

Many thanks to Gregor Erkel and Friedrich Kurz for enabling the project and for contributing essential ideas. They are working hard to turn these ideas into reality. We also thank our colleagues from User-Driven Innovation at Telekom Innovation Laboratories, Trommsdorff & Drüner, and Point Blank International for their support.

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*Humour Translation in English Cartoons Subtitled into Persian*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

It seems that humour plays a vital role in our everyday social encounters which is rooted in a cultural context of a specific community. Humour is estimated to comprise almost one-half of the total nature of human life (Koller, 1988). In other words, our total life experience is inextricably bound up with humour. Living in the age of mass communication and media development, it is even becoming of more outstanding significance in recent translation studies. However, choosing the most natural and applicable strategies for a better transfer of humour from one language into another is indeed a challenging task for translators. Humour translation differs from other types of translation since it requires more intricate strategies (Vandaele, 2002). This can be a reason that humour translation has been rarely done from English cartoons into Persian and has even been more neglected in the field of subtitling. Accordingly, this paper attempts to investigate the strategies employed by Persian translators while translating humour in English cartoons and to identify which strategy is mostly applicable. To this end, twelve broad translation strategies were borrowed from Newmark (1988) and their implications were discussed in detail. Furthermore, the materials were selected from three American cartoons, namely 'Barnyard' (2006), 'Ice Age 1' (2002), and 'Shrek 1' (2001). After analyzing the data, it was concluded that the most frequent strategy employed by Persian translators was 'synonymy'. The findings of this research could be beneficial for translators, translation students, and companies providing subtitles.

**Key words:** humour, cartoon , subtitling , translation strategies , synonymy

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## Introduction

“Humor is not a feeling but a philosophy of life” (Wittgenstein, 1980, p.78) . It is an inseparable component of any language which seems to be one of the most defining aspects of humanity (Palmer, 2005) . Humour is also considered as a vehicle for mass entertainment since it is served for the purpose of pure enjoyment, sheer exhilaration and a moment of laughter which are among the primary effects of any humorous discourse. Thus, it plays an important social function. Until the last quarter of the twentieth century, the media was mostly restricted to newspapers but with the ascendancy of television as well as the Internet, they could establish themselves in a position of cultural dominance throughout the world. Nowadays, television provides numerous entertaining programmes replete with humour as the most prominent element.

Humour can be vividly touched in most cartoons. In fact, cartoons are considered to be the prototype of a humorous discourse since they are often associated with humour. Although cartoons are relatively young in terms of their history of the mass media, they are comprised of many intricate aspects. When it comes to the area of translation, they manifest such intricacies even better. In other words, they resist translation or at least make it rather difficult to tackle with . The difficulty of humour translation is not exclusively reliant on words for when a cartoon is watched by an audience who is not acquainted with the cultural properties depicted in the scene , even if the words are meaningful , incomprehension may appear . This highlights the fact that any translation including humour is in direct interaction with culture. Indeed, “cultural formation mediates every stage of translation process” (Faull, 2004, p.34) . Translation is more like a negotiation between two cultures, a transaction between two languages (Pierre and Kar, 2007). One perceives the world from the window of the culture of his or her own community.

Humour translation in cartoons can be even more challenging in the area of subtitling. In fact, subtitling is a unique form of translation which is quite different from other types. While watching a subtitled cartoon, most viewers are unaware of the complicated process the translator has carried out. Subtitling imposes a variety of translation constraints and limitations on translators, out of which one can mention the constraints of time, space, and shortening or reduction. Moreover, there are a number of qualitative and quantitative changes which should be taken into consideration in subtitling (Gottlieb, 1992). All these constraints challenge the translators’ potentiality to render an appropriate translation. Translators may be easily lost in the process of translation when coping with the SL limitations and TL demands.

Considering the aforementioned points, one could probably mention that the big problem here is how translators fill the gap in translating the humorous elements from the source language into the target language and what is the most frequent strategy in order to do so.

Although humour translation seems to be a complex and multifaceted domain, there is a great volume of literature on humour and the translation of it. Indeed, different scholars have demonstrated different translation strategies for a better rendition of humour from the source

language (SL) into the target language (TL), for instance , Freud (1991) has provided a summary of the existing strategies , including ‘condensation’ , ‘multiple use of the same material’ , and ‘double meaning’ . Gottlieb (1992) has also presented a set of other strategies, namely ‘expansion’, ‘paraphrase’, ‘transfer’, ‘imitation’, ‘transcription’, ‘dislocation’, ‘condensation’, ‘decimation’, and ‘deletion’. Moreover, according to Vinay and Darbelnet (1995), there are two broad methods of translating, namely ‘direct/literal’ and ‘oblique’. These two categories include seven strategies which are ‘borrowing’, ‘calque’, ‘literal translation’, ‘transposition’, ‘modulation’, ‘equivalence’ and ‘adaptation’. Furthermore, Jaskanen (2001) has divided the translation strategies into three classifications of ‘exoticization’ or what Toury (1995) called ‘adherence to source norms’, ‘naturalization’ and ‘neutralization’. And finally, Chiaro (2004) has proposed five different strategies for the translation of humour on screen which are as follows:

- “1. Leave the VEH (verbally expressed humour) unchanged .
2. Substitute the source VEH with a different instance of VEH in the TL .
3. Replace the SL VEH with an idiomatic expression in the TL .
4. Replace the SL VEH with an example of compensating VEH elsewhere in the TL text .
5. Ignore the VEH altogether” (p. 45) .

However, it should be noted that their suggested strategies are not exclusive of humour translation but rather of any type of translation including humour as well.

Furthermore, the study of humour translation by Persian translators seems to have been highly neglected .To date, no studies have explored the existing translation strategies adopted by Persian translators in order to render humour elements.

Moreover, research involving humour translation has traditionally focused on the translation of books. To the best of the author’s knowledge, only one study has explored the translation of humorous elements on screen (Chiaro, 2004).

Therefore, this study will fill this gap by conducting a qualitative method on the very issue to find out what are the existing strategies in order to translate humour elements from the SL into the TL and to identify the most frequent strategy adopted by Persian translators. The researchers deliberately chose such a topic in the hope of providing some guidelines for students of translation as well as the educators as the stakeholders of the field.

## **Methodology**

The material required for the purpose of the present paper was collected by analyzing the Persian subtitles of the three American cartoons namely ‘Shrek 1’ directed in the year 2001 by Andrew Adamson , ‘Barnyard’ directed in the year 2006 by Steve Oedekerk and ‘Ice Age 1’ directed in

the year 2001 by Chris Wedge and Carlos Saldanha. The reason for choosing these three cartoons from among other numerous ones was twofold. Firstly, the existence of a large number of humorous instances that can fit into the framework of this research. Secondly, the use of animals instead of humans as their main characters which also brought about a kind of laughter for the viewers.

In order to reach the purpose of the study, a step-by-step procedure was followed. First of all, each English sentence containing humour both at the cultural and linguistic level was extracted from the original cartoons and was then compared with their subtitles in Persian. Second of all, the translation strategies employed by translators were studied. Finally, the most appropriate and frequent strategy used by Persian translators was identified.

### **Theoretical framework**

The theoretical framework of this research is the one proposed by Newmark (1988) since he has provided a detailed analysis of the areas of translation and culture which leads to a better understanding of this domain. More importantly, Newmark (1988) has discussed the possible strategies in the area of culture in a very narrow sense and this is also a great help to study

humour translation which is rooted in a specific cultural context. Indeed, he has proposed twelve different strategies according to the following definitions:

**Transference** : The term refers to a process in which an SL item is brought into a TL, but with an SL meaning which commonly happens when TL has no proper equivalence for an SL item and thus 'borrows' the item due to cultural, geographical, or linguistic reasons.

**Cultural Equivalent**: In this strategy, an SL cultural item is translated by TL cultural item. The translator attempts to provide a substitution in the TL culture which can get near to the concept as much as possible.

**Literal Translation**: An SL word, phrase or sentence, as a translation unit, is translated into a TL word, phrase or sentence without breaking the TL syntactic rules.

**Neutralisation (Functional / Descriptive Equivalent)** : This strategy requires the use of a culture free word and therefore neutralizes or generalizes the SL item.

**Naturalisation** : The SL pronunciation is converted into normal TL spelling. In other words, the SL word is brought into the TL text and the writing is adjusted to its writing system.

**Synonymy**: When the translator is unable to find the exact equivalent, he selects the synonym which is a near TL equivalent to an SL word.

**Couplet:** This is a strategy when the translator adopts using two procedures at the same time.

**Translation Label:** It is an approximate equivalence, usually for new institutional terms.

**Through Translation:** It is known as ‘calque’ or ‘loan translation’ and is used for the name of institutes, organizations and common collocations.

**Paraphrase, Gloss, Notes, etc.:** In this strategy, the meaning of the SL item is explained. Also, gloss is a kind of translation strategy in which the translator attempts “to reproduce as literally and meaningfully as possible the form and content of the original” ( Nida , 1964 , p.159 ) .

**Deletion:** It happens when an SL item, as a translation unit, is dropped in the TL text. To many scholars, it should be regarded as a last resort. However, Baker (1992) stated that “If the meaning conveyed by a particular word or expression is not valid enough to the development of the text, the translator can omit translating the word in question” (p.1).

**Componential Analysis:** The meaning of words is broken down on the basis of shared and contrastive features. The SL word is replaced with a more general TL word plus one or two components to complete the meaning which is not embodied within the first TL word.

## Discussion

Some of the humorous instances gathered from the three cartoons under study, along with their translation in subtitled Persian are analyzed below based on the aforementioned framework.

1. Oh, come on Shrek . Wake up and smell the pheromones ! (Shrek 1 )

اوه بس کن شرک ، بیدار شو و بو رو حس کن !

Pheromone is a chemical substance produced by an animal to influence the behaviour of others of the same species, often functioning as an attractiveness to the opposite sex. The sentence is humorous since Donkey believes that Shrek is hiding his animal instincts and encouraging him to express his feelings for Fiona. In Persian translation, the nearest equivalent is selected for the SL item since there is no exact equivalent for it in the TL. The strategy applied here is ‘synonymy’.

2. You definitely need some Tic Tacs or something , cause your breath stinks ! ( Shrek 1 )

تو واقعا به یه خوشبو کننده ی دهان یا چیزی نیاز داری چون که نفست بوی گندی میده !

Tic Tac (officially styled as 'tic tact') is a brand of small sweets produced by the Italian confectioner Ferrero. The individual candy pieces are commonly called tic tacs themselves. The sentence is uttered by Donkey and the humour in the original sentence is due to his direct and straightforward opinion about Shrek's smelly mouth. The name of the candy in the SL is reduced to a more general or neutral term in the TL since it may not be familiar to the target culture. The strategy applied here is 'neutralisation'.

3. You know, it's times like this when I really like to say, 'oh ,caca!' (Barnyard)

میدونید ، توی یه همچین مواقعی ... دلم میخواد با خونسردی بگم ... بدبخت شدیم !

Caca is a nursery but a rather old-fashioned cultural term which is synonymous with the word 'excrement'. In the SL culture, it is mostly used when something unpleasant is on the verge of happening. The SL cultural item is translated by another cultural item in the TL and, thus, 'cultural equivalent' is used as the translation strategy .

4. You are the embarrassment of nature , you know that? (Ice Age 1 )

تو مایه ی خجالت طبیعتی ، میدونستی ؟

The SL sentence is translated into the TL sentence without breaking the TL syntactic rules. The strategy used here is 'literal translation'.

5. You didn't do that ! ( Barnyard )

ای زیونتو مار بزنه !

The Persian translation is not the exact equivalent for the English sentence but rather a near TL equivalent. It is believed that 'synonymy' is used as the translation strategy.

6. Back off Daisy, there's an 'L' in that boy's forehead. (Barnyard)

بکش عقب دیزی ، روی پیشونی این پسر نوشته دال که میشه دروغگو .

The sentence is uttered by Daisy's friend, Bessy who believes that whatever Otis says is only a bluff. Accordingly, the letter 'L' used in the SL stands for the word 'liar'. In Persian translation, the nearest equivalent is chosen. Here, the strategy used is 'synonymy'.

7. This time tomorrow, you could be a free mammoth or a nanny . Personally, I never get tired of peekaboo. (Ice Age 1)

فردا تو یه ماموت آزاد خواهی شد یا یه پرستار بچه .

Peekaboo is a simple game played to entertain children, in which the face is hidden behind the hands and is then shown unexpectedly. Since the term is cultural and there's no same equivalent for it in the TL, it is dropped in the Persian translation. The strategy applied is 'deletion'.

8. Oh, you were expecting your Prince Charming! (Shrek 1)

چی ، انتظار شاهزاده چارمینگ و داشتی ؟

The sentence is told by Shrek in response to Fiona who is surprised to find her rescuer an ogre. There is a hint of irony in his voice. In fact , the word 'Prince Charming' itself is mostly used to add more humorous effect. In Persian , 'Prince' is literally translated while 'Charming' is borrowed from the SL. The two strategies applied here are 'literal translation' and 'transference'. Moreover, 'couplet' is applied since the translator adopts using two procedures at the same time.

9. You have a lot to learn . (Barnyard)

تا گوساله گاو شود .

Here, the translator has used the nearest equivalent for the SL utterance which is indeed palpably clear to the target culture. It is worth mentioning that the Persian translation matches the visual context of the scene very well since the barnyard's veteran cow, Ben, is talking to his carefree son, Otis. This increases the effect of humour in the TL. The strategy used here is 'synonymy'

10. Come on Sid, let's play tag . (Ice Age 1)

یالا سید ، بیا گرگم به هوا بازی کنیم .

Tag is a children's game in which one child chases the others and tries to catch them . The sentence is ironic and the humour lies behind this irony . Diego is indirectly or jokingly suggesting Sid to play tag so that he can chase and eat him. The SL cultural item is translated by a TL cultural item. Thus, the strategy applied is 'cultural equivalent'.

11. Oh, manabunga ! (Barnyard )

هی ، بکش کنار گاوی نشی !

Manabunga is a play on words of 'cowabunga' which is an exclamation of rejoice from the early 1990s. When jumping into water, Otis expresses his fun and joy by shouting 'manabunga'. Due to the reason that there is no exact equivalent for it in Persian, the meaning is changed and the Persian translation is mostly selected from the visual context of the cartoon. 'synonymy' is used as the translation strategy .

12. I have to save my ass . ( Shrek 1 )

باید خرم و نجات بدم .

The sentence is uttered by Shrek when he is escaping with Fiona from the castle. However, the dragon is taken Donkey and Shrek must logically rescue him as well. This is an instance of homonymy (wordplay) since the meaning of the word 'ass' is twofold. One means 'donkey' and the other one refers to the slang 'to save one's ass' which means 'to get someone out of trouble'. In Persian, however, this wordplay can't be created and only the first meaning, 'donkey', is taken in translation. The strategy applied here is 'literal translation'.

13. Hey, why am I the poop checker ?! (Ice Age 1 )

هی ، مگه من پوشک عوض کنم ؟!

Sid is the one chosen to change the baby's nappy and he is angry about it. Due to the reason that the exact equivalent of the word 'poop' is impolite in the target culture, the closest TL equivalent is selected. The used strategy here is 'synonymy'.

14. That's the animal sin of sins, huh? (Barnyard)

این خفن ترین عملیات حیوانیه ، درسته ؟

The sentence is uttered by Eddy, a friend of Otis while driving wildly in the car with the rest of friends and totally enjoying themselves. The Persian translation can be considered in two aspects. Firstly, the term 'sin of sins' can be seen as an allusion to the 'seven deadly sins' which are part of the Christian ethics, including lust, gluttony, wrath, greed, sloth, pride, and envy. In this regard, the SL cultural item is translated into a more general or neutral term in the TL and the applied strategy is 'neutralisation'. Secondly, the SL sentence can be viewed without the cultural load behind it. Considering this aspect, the Persian translator has attempted to provide the nearest TL equivalent for the SL item. Here, the used strategy is 'synonymy'. In fact, both strategies are applicable in Persian subtitling since as mentioned earlier, one strategy may have the features of other ones in some degrees.

15. All right, all right. Don't get started. No one likes a kiss ass. (Shrek 1)

باشه ، باشه . زیادی جو گیر نشو . هیچکس دوست نداره که یه خر و بیوسه .

The sentence is uttered by Donkey when Shrek tries to kiss and hug him for bringing the dragon so that all can fly to save Fiona. The idiom 'to kiss sb's ass' is used to praise someone more than reasonable to make him or her do the things we like. Due to the fact that the idiom is potentially offensive, the Persian translator has attempted to neglect the idiomatic meaning and translate the sentence literally as 'to kiss an ass (donkey)'. The applied strategy here is 'literal translation'.

## Conclusion

Humour seems to play an important role in our everyday communication. Accordingly, a proper transference of the humorous effect from one language into another is probably of a remarkable significance. This is particularly the case when most TV programmes, including cartoons are loaded with humour as their primary element. Keeping this point in mind, the present paper made an effort to examine how humour travels between languages and cultures through subtitling, the focus of this study.

The research tried to demonstrate a range of strategies open to Persian translators while translating humour from English into Persian. Twelve different strategies suggested by Newmark (1988) were studied and eventually the analysis of the data indicated that 'synonymy' is the most frequently used strategy for English cartoons subtitled into Persian. This can be because of the brevity of this strategy since it provides the TT viewers/readers with the closest TL equivalents.

In other words, it involves the replacement of an SL item with a close TL equivalent, preventing long wordings and unnecessary explanations. As the second position, 'literal translation' was mostly selected by Persian translators, although Newmark (1988) considered it as the basic translation procedure. 'Neutralisation', 'cultural equivalent', 'couplet' and 'deletion' were not used very often and the remaining strategies were mostly put in bracket by Persian subtitlers.

In conclusion, humour translation seems to be a daunting task which inevitably challenges almost all translators. It necessitates a lot of time, endeavour, and energy particularly in the area of subtitling. Humour is a complex cultural phenomenon that demands a broad inclusive outlook for its translation ( Esar , 1954 ) .

The logo for the International Association of Foreign Language Researchers (iafor) is centered on the page. It features the word "iafor" in a light blue, lowercase, serif font. The text is enclosed within a circular frame composed of two concentric, hand-drawn style arcs. The upper arc is light blue, and the lower arc is a slightly darker shade of blue. The overall design is minimalist and academic.

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## The Impact of Social Media to Students' Critical Thinking skills

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

### Abstracts

The use of ICT in education has developed rapidly in the past two decades. ICT usage is not only using computer, but also using the internet and social media as an important tool in teaching and learning process. It provides opportunities for both teachers and students to engage beyond classroom setting enabling them to flexibly interact. Social media, like Facebook, Twitter, Flickr etc, gains popularity in our today's world, and educators see this as an opportunity to develop innovative ways to create more interesting learning experience for their students, especially in order to improve students' critical thinking skills. However, there are ongoing debates on whether the use of social media can bring beneficial impact for students' critical thinking skills.

In this proposed paper, we would like to investigate the following questions: 1) How do the students perceive social media as a tool for learning, especially in improving their critical thinking skills?; 2) How do the students' questions and responses in their discussion in social media reflect their critical thinking skills?

*Keywords:* Social Media, Critical thinking

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## 1.Introduction

Personal computer has developed as an important tool for teaching and learning and the widespread usage of software, local area networks (LANs) and especially the Internet has created big opportunities for learners to enhance their communicative ability (Smith, 2010). It is believed that the usage of computer and internet can excel students' ability in acquiring knowledge since internet enables students to go to global community to interact with broader network to access education.

Education perspective has changed from classroom environment to broader access and interaction through the internet. Smith (2010, p.107) believes that students can tap "into a global community of other learners", or in other words the usage of internet had made interaction between learners around the world possible and this condition can make student exchange their knowledge with others.

The internet is a very broad medium of education and the emergence of social media brings dramatic impact on educators and schools (Williamson & Howard, 2012). Some might wonder the meaning of Social media that can be described as "a method or category of methods, to facilitate communication among social groups or individuals" (Williamson & Howard, 2012, p.4). The usage of social media in education should also be considered as one of the important tools that will enable both educators and learners to interact with each other in teaching and learning process.

Moreover, social media roles in education can also affect students' critical thinking skills which is one prominent skill in education. Fisher (2001) conclude that critical thinking is a skill that grasp educators attention, and more teachers want to teach critical thinking to students directly. This fact will lead us to examine the role of social media in the process of teaching critical thinking skills.

In this paper, we would like to investigate the following questions: 1) How do the students perceive social media as a tool for learning, especially in improving their critical thinking skills?; 2) How do the students' questions and responses in their discussion in social media reflect their critical thinking skills?

## 2.Social Media Development And Its Use in Education

To integrate the usage of social media into educational process, prior knowledge of social media types is needed. The first social media that is well known to be used is blog which enable students to access interactive features that will enhance the way they interact with others like a bio, events, archive of past blogs and comments (Bunzel, 2012). Richardson (2009) highlighted the difference between blog from website on the types of activity that students can find when they use blog. Blog is not created to be static but active, it stimulates students to make reflections and conversations by using the comments function, and blog is used primarily to "share details of everyday happenings in their [students] life" (Subrahmanyam and Greenfield, 2008, p.122). This means that blog can be observed as a tool that can be used to engage students' life and interact with them personally.

Richardson (2009) pointed out that by using blog students can engage with ideas and questions, because it can stimulate students to think and give response. This can bring benefit to student since if this applied in education they can practice their critical thinking and their writing skill since by writing comments students will have the chance to formulate appropriate answers. Richardson also suggested that students can also be involved in the process of Scaffolding Blogging, where students can be asked to make basic deconstruction of the blog design and they can add more function for the blog. This type of process will empower students' critical thinking skills since they will experience and involve actively in the learning process.

Wikis is another type of social media that is well-known as a “completely collaborative Web site run, edited, and managed by its users” (Bunzel, 2010, p.68). All of its users, including students, will have the chance to add and edit information and it means that students can actively participate in building the web and support it with their research on any topics found in Wikipedia category. Ward Cunningham designed Wikipedia because he wanted to create an easy authoring tool that might encourage people to publish and share their knowledge and information on particular topic (Richardson, 2009), or in other words by using Wiki in education it will trigger a research habit of Wiki users, especially for students. If Wiki activities are stimulated in education, students will have the motivation to look for sources and publish it on Wiki and this will surely enhance not only their writing skills but also their research and critical thinking skills.

The third social media, which can be considered as a breakthrough in education, is Bookmark. Most students and most internet users will probably use bookmark application in order to store their favorite website that will help them to seek understanding about certain issue. From the education point of view, bookmark can help students and also teachers to support their research and Bunzel (2012) pointed out that there is a development happened in the usage of bookmark where users can not only record their web address but also share it with others in a network.

The prominent application that enables this function is *Diigo.com* and *Delicious.com* in which students can open an account to store their own bookmarks and share them with others. By using these social media teachers and students can build subject specific resource list that they can easily share when using Real Simple Syndication (RSS) – a technology that allows educators to subscribe to “feeds” of the content that is created on the Internet (Richardson, 2009). These tools allow students to see other people who are accessing the same information and they can contact them. By doing so, students can interact with other people who have the same interest with them. This will surely help students to gain more resources that relates and are relevant to their research topic. They can transmit and share their knowledge or perspective to others.

A new presentation –based social media is Prezi which is a ‘web-based storytelling tool that uses a single, unlimited canvas that hold images, audio clips, video, and other objects and the information exist can be zoomed in and out depending on the the depth of exploration desired (McHanney and Daniel, 2011, p.179). Why it can be categorized as social because the presentation can be shared to all users of Prezi, both students and teachers can save Prezis made by other user and they can use it as their reference or edit it if they want to. This can empower education process since Prezi can be an interesting way to write and present ideas.

The fifth social media that can bring great benefit in education field is Twitter. This micro blogging system was created to gain short attention and generate quick-change mentality of today's world and can be considered as the most significant real-time social media communication tool (Bunzel, 2010). By using Twitter, users can notice the immediacy of

Twitter's status updates and the responses of followers, and this interaction can be seen as a fast development since in Twitter users can have instant feedback from followers in a very fast time span. This function will allow students and teachers to interact in a very fast way and they will get a wide response. From education perspective this can be seen as an opportunity to make a wide range interaction between students and teachers, for example, teachers can make a short review about their lesson by tweeting them and later students can give response to it. This will surely make a review session much more interesting than ever and this will last longer than a conventional method.

The most noticeable social media that bring great impact to the world is Facebook, in this website users can share resources in form of text, pictures, videos, and links in a more public display and users can also participate in live chats and internal e-mail (Ewbank, Foulger & Carter, 2010). Through these functions, students and teachers can interact and share knowledge in any way possible and they can personalize it, meaning they can both share anything and limit the way they share it. Facebook and its functions can be used to support education. Many colleges around the globe are using it to give more value to their education process. Many education oriented organization have used Facebook for education purposes, for example VOA English program in its Facebook group page regularly post English lesson program discussing specific English lesson where its group members can interact with a VOA language instructor. Through this program VOA helps students around the world with better understanding of English language learning aspects.

Ewbank, Foulger & Carter (2010) explained that Facebook has several advantages which are its interface, collective pages and page settings. The interface of Facebook is continually upgraded to support innovative communication techniques in which allow members to participate in any communication process. Another advantage is the possibility of Facebook users to create group page that can be used by individuals with common interest to share their knowledge by interacting with other individuals in the group. The last benefit can be gained through Facebook page settings function, where administrator can control the content of their pages and even add various mediums of discussion, such as: video, reviews, picture, time table, etc.

There are abundant of other Social media in the internet beside those six discussed above, and both students and teachers can gain benefit by using it in education. Again, a well thought plan is necessary to integrate social media in education so educators can bring its positive effect rather than its negative effect.

### **3.Pros and Cons of Social Media and How It Affects Education**

There are numerous social media exist in the internet used by millions of users around the globe namely Facebook, twitter, blogs, wikis, podcast, and many more. The growing number of social media can be seen through positive or negative point of view.

From the positive point of view Williamson and Johnston (2012, p.4) highlighted that "the jury is still out on whether that impact will be positive or negative", and they argued that education receives great positive impact since social media contribute to good development of learning, community support, and effective leadership. Those who support social media in education believe that social media can increase the quality of teaching and learning, since it provides wide range of materials available online that can be used to enhance their knowledge.

Moreover, social media change how people communicate with each other since people from any background can access it (Bunzel, 2010), this might be a positive point since by using

social media it is possible that students can discuss with not only other students but also other teachers or professionals across disciplines. Students will have the opportunity to ask questions or seek for solutions of their learning difficulties to competent people or even do peer-review on their task with their friends online, and this surely will positively affect their learning process. Also, students can add more information upon their particular study, and contribute to the knowledge of their friends through online discussion facilitated by social media.

Despite the positive side of social media, McEwan (2012, p.23-24) points out that “social networking sites also create new challenges and potential pitfalls for student... [Social media] may also contribute to a diminished skill, information overload, problems associated with disconnecting from the pre-university network, and decreased academic performance”. Students might decrease their learning skill because the primary intention of many social media is to entertain them by having larger social connection rather than to enhance their knowledge. Students can be easily distracted from learning process by spending more time to build their social network, rather than genuinely study.

People who oppose social media integration to education believe that social media will also make students suffer from information overload; this may be true because social media is the place where everyone can interact with each other and share lots of information. A research explains that students in some colleges, which are using a social media called Facebook, do over posting where they post lots of unnecessary, irrelevant and uninteresting post (Ewbank, Foulger and Carter, 2010). From this fact, it is visible that Students can be overloaded with unnecessary updates. This situation will make student suffer and drive them away from their primary goal that is to study since their time will be consumed by reading unnecessary information.

The worst negative impact of social media is its effect to students' academic performance due to the big amount of time used by students online. The time spent to maintain their social network may have big discrepancy with the time used to do learning related activity. When students want to use the social media to do learning activities their focus can be distracted by their friends' activity, and their eagerness to give comments on it. Students are also reluctant to give comments or to browse the social media to get information about their network. Moreover students, like other users of social media, will be exposed to a 'space' for uncontrolled narcissism in which students are motivated to express themselves largely for their personal motivation (Bianco, 2009), rather than for educational purposes. This will affect students intention when they want to use social media for education because their narcissism will alter their focus when they want to study. If the condition continues, it will surely bring negative impact to their academic achievement since they neglect their study to do other activities in social media.

The negative might outweighs the positive but the impact of social media towards education cannot be ignored, since it is suggested that “those who take risks will open new opportunities and help society work through some hard issues” (Carter, Foulger & Ewbank, 2008, p.685). Therefore, both educators and learners need to find the remedy of the negative side of social media and maximize it for learning process. This can happen by making proper teaching and learning plan that can be designed to integrate classroom activities with learning activities related to social media.

#### 4. Critical Thinking Indicators

Fisher (2001) explained that critical thinking emphasize on the importance of reasoning in which individuals are expected to give and to evaluate reasons as good as possible by using their ability to evaluate other ideas. Fisher (2001) also emphasize that critical thinking skill is shown when someone consciously aiming to improve his/her ideas and create new ideas which are more reasonable. Geertsen (2003) suggested that critical thinking is not merely giving criticism upon certain issue, but more to value imagination, feeling, and the social construction of issues that are being discussed.

To analyze students' critical thinking skills appropriate critical thinking indicators are needed. According to Fisher (2001, p.8) there are nine fundamental critical thinking skills where students know how to:

- a. identify the elements in a reasoned case, especially reasons and conclusions
- b. identify and evaluate assumptions
- c. clarify and interpret expressions and ideas
- d. judge the acceptability, especially the credibility of claims
- e. evaluate arguments of different kinds
- f. analyze, evaluate and produce explanations
- g. analyze, evaluate and make decisions
- h. draw inferences
- i. produce arguments

There are various ways to analyze critical thinking skills above, and a performance assessment can be used to explain the skills shown by students when they use social media. Ennis (1993) suggested that performance assessment can be applied to situations which can be considered as real life situations in which observer is going to make note on the events and focuses on the activities done by one person or group. In this type of assessment observer, who in this case is the lecturers, will analyze students critical thinking skills and then give description on how students express their idea and link it with the critical thinking skills described above.

#### 5. Data Description

The most important data source for this research is taken from the assignment of *American Culture and Society Studies* course which is offered as an elective course at English Department, Sampoerna School of Education. This course explore various institutions within the American society from the standpoint of history, education, government, politics, social & culture, and its global roles. The course uses the American educational issues as the main starting point and invites the students to look deeper on other topics. Forteen students enrolled for thiss class in the Spring 2012.

One of the assignments in this class was Discussion Questions in which the students, at least once during the semester, were required to prepare a list of questions that relates to the topic being discussed in respective meeting, and post it on E-learning platform, i.e. Moodle. Other class members should respond to the questions. The topics for the discussion questions were:

1. *American History* (Meeting 2);
2. *The Civil Rights Movement* (Meeting 4);
3. *The*

*American Dream* (Meeting 7); 4. *Education and Societal Issue* (Meeting 9); 5. *Issues in American Youth* (Meeting 10); 6. *The US Government and Politics* (Meeting 13).

Through whole class consensus, the students preferred to create their own Facebook group to do this activity after the discussion topic number 5, rather than using Moodle as planned, due to several reasons and one of those was accessibility. According to the students, it was easier to access Facebook, and the fact that they do not feel as if they are studying when using it makes it more interesting to most of them. The lecturer, then, accommodated this initiative. In its journey, the group was not only used for assignment related discussions, but also information sharing, announcement, asking clarification for other assignments, etc. The group was created on May 25, 2012 and actually ended on July 2012. There are three topics that were discussed in the group with five threads and it received fifty three comments

## 6. Findings and Discussion

The research was started by quantifying the number of threads both on Moodle and Facebook which are explained on the table below:

### Moodle Overall Review

Topic	Students Name	Number of replies	Participating Students
American History	M. Iqbal	13	13
	Zainatul N.	13	8
Civil Rights Movement	Merry	4	4
	Natasha K	3	3
	Ika Siti	2	2
The American Dream	Gratika	1	1
	Mutmainah	3	3
Education & Societal Issues	Andik	4	2
	Ira	2	2

### Facebook Overall Review

Topic	Students Name	Number of replies	Participating Students
Issues in American Youth	Nur Afilin	6	4
	Rahma C.	15	8
	Desri	17	8
US Government & Politics	Ema J	12	7
American Dream	Risma	3	2

Based on the analysis it can be seen that there were 4 topics covered by 9 students in Moodle platform. There are 9 threads and they received 45 replies in total, with 38 participating students. From all 9 threads posted by students the average number of replies are 5 replies. In the first two threads the number of replies and participating students was quite high. The topic on American History received 13 replies for each of the questions and those replies were posted by 13 different students for the first thread and 8 different students for the second thread. This data shows that student participation rate was significantly high at the beginning of the online discussion. However, starting from the second topic on 'The Civil Rights Movement' the number of replies and participating students was falling steeply. Even in the topic of 'American Dream' one thread only received only 1 reply.

As stated above, Facebook was used starting from topic number 5. The students posted 5 threads containing the discussion questions on two topics which are Issues in American Youth, US Government & Politics, and a late discussion on The American Dream. The 5 threads received 53 comments from 29 participating students with an average of 10 comments for each threads. The first topic discussed on Facebook only got 6 comments from 4 students. However, starting from the second thread of the same topic the number of comments rose considerably. The second thread received 15 comments from 8 students and in the third thread 8 students responded by giving 17 comments. The second topic on Facebook received 12 comments from 7 participating students. In regard to the last post on The American Dream, 2 students only gave 3 comments on the thread and this happened since the topic was supposed to be covered on Moodle discussion forum, not on Facebook.

From the quantitative description above it can be concluded that Facebook usage attracted participating students to give more comments compared with how students' participate on Moodle. The average of students' participation was doubled when they use Facebook in their discussion. Moreover, the usage of Facebook encouraged students to leave more comments rather than on Moodle. Regarding the logic behind the students' participation rate cannot be explained only by looking at the above quantitative description. Therefore, further analysis on the qualitative aspect of student comments and replies is required, which will in turn reflect the students' critical thinking development.

On Moodle, it is clear that the students exhibit at least 8 critical thinking indicators in their responses to their peers' questions. The questions on "the American History" generate 13 replies which represent four indicators of critical thinking development, i.e. identify and evaluate assumption (b), analyze, evaluate and produce explanations (f), clarify and interpret expressions and ideas (c), and produce arguments (i). The responses on the questions on "The Civil Rights Movement" reflect almost similar results in regards to critical thinking indicators. What is absent on the responses on the first questions is the occurrence of the first indicator, where one student tries to identify the reasons and draw conclusion at the end of his explanation (a). The responses for the topic of "American Dream" implicitly generate critical thinking indicators. Those are identify and evaluate assumption (b), and judge the credibility of claims (d), evaluate different argument (e). On the topic "Education and Societal Issues", the participating students employ the following indicators, namely b, c, f, and i.

In terms of the qualitative analysis on the students critical thinking skills when they used Facebook, based on the findings there are 8 indicators that can be identified from students response which are: a, b, c, d, e, f, h, and i. In the first topic about 'Issues in American youth', in the first post, students able to create answers which fulfill indicators a, e, f and i. From this post one student tried to support her reasoning by giving reliable source from other internet page which discussed similar idea. Moreover, the second post of the same topic manages to gain responses which fulfill indicators b, c, d, e, and i. One interesting fact in this post is that 4 students in the discussion tried to evaluate other students' argument by using the tag function so other students directly knew the evaluation. Meanwhile, in the third post the indicators that can be identified are e, f, and i. In this post 3 students also evaluate other students' argument by using the tag function. In the post with the topic 'U.S. Government & Politics', the indicators that can be identified are: c, e, h and i. In this post, besides producing arguments and ask for clarification, 2 students attempt to evaluate other students argument. The last post about 'American Dream', indicators e and i can be identified and 1 student tried to evaluate other student's opinion.

Regarding on how they perceive social media, particularly Facebook as a tool of learning the students come up with positive responses. One student expressed the idea that by using Facebook or other social media, like twitter, it eases them in giving response since students always go online and check their social media. Another response highlighted the idea that using social media will make students comfortable in sharing their knowledge since Facebook and other social media is more casual than other education platform like Moodle. Other student also emphasized that Facebook bring efficiency in doing their assignments, since social media can give them easy and fast access in sharing arguments and backing it up with useful and trusted information. One suggestion that they made to improve the usage of social media is by enabling students and teachers to make teleconference to enable direct communication.

## **7. Conclusion**

Based on the analysis above it can be seen that the usage of social media can motivate students to participate in online discussion, rather than when they use Moodle as the online learning platform. From the qualitative analysis, we can see that students can perform relatively the same critical thinking skills when they use Moodle and Facebook. But as educators we might want to note that by tapping into social media students' motivation can be increased due to the fact that social media can give them comfort and confidence. Moreover, the tools provided by social media gave students with the opportunity to be more expressive in sharing their ideas.

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*Developing a Location-based Mobile App to Save Heart Patients in Emergency*

Durairaj Ponraj, Luo Zhiqiang, Ang Candy

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Abstracts

One out of three deaths in Singapore is due to heart disease and stroke. Statistics indicate that 70%-80% of heart attacks occur either at home or in public places. The prompt emergency measures, for example performing a cardio-pulmonary resuscitation (CPR) and employing automated external defibrillator (AED), are critical life-saving procedures when attending to a heart attack victim. Hence, we developed a mobile app, called *SOSHeart*, to assist heart patients to receive prompt assistance when they are suffering from heart attack and possibly a cardiac arrest in public places. This application integrates the mobile and cloud technology to provide the comprehensive location-based services in threefold. First, the one-click SOS assistance allows a heart attack patient to call for help from all relevant parties in the fastest manner in emergency. After initiating such assistance, the patient's location tracked by the global positioning system (GPS) data on mobile phone will be flashed in a city map provided by *SOSHeart*. All CPR-certified citizens within a 1-km range of the site of the heart attack will be alerted by *SOSHeart* on their mobile phones where they can also find the patient's location on the map. Second, the on-site guidance instructions can refresh and guide CPR-certified citizens to perform CRP and use AED correctly. Lastly, *SOSHeart* can share patient's medical data to facilitate the correct treatment in emergency. The system architecture and each component of *SOSHeart* are introduced too. A pilot test found that the one-click SOS assistance is a reliable means to quickly get attention and help from nearby CPR-certified citizens. Our future work is to simulate several field studies to test the effectiveness and efficacy of *SOSHeart* to save heart patient in public places.

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## 1. Introduction

One out of three deaths in Singapore is due to heart disease and stroke. Statistics indicate that 70%-80% of heart attacks occur either in the home or in public places (such as shopping malls). Currently, the Singapore's survival rate in cardiac arrest cases away from hospital is between 2 and 3 per cent. It can take up to 20 minutes from the call for help before paramedics arrive. Factors associated with survival from heart attack include patient's age, witnessed collapse, prompt initiation of cardio-pulmonary resuscitation (CPR), type of initial arrhythmia recorded at the scene, early defibrillation if warranted, time elapse from cardiac arrest and the arrival of the first rescue team, and the patient's comorbidities [1-3].

Early CPR has been shown to be a vital link in the "Chain of Survival" [4] for out-of-hospital cardiac arrest and is an important key to improving survival rates. Therefore, the National Resuscitation Council of Singapore and the Singapore Heart Foundation initiate to train one million citizens in CPR by 2020 [5] as these citizens could provide CPR immediately. One gap, however, is the absence of means for a heart attack victim to get the prompt treatment from a CPR-certified citizen. Despite one million CPR-certified citizens, they may not be aware that someone nearby needs CPR. To bridge this gap, the location-based services accompanied with a mobile phone app could possibly be an effective tool.

The location-based services (LBS) represent a general class of computer program-level services that can identify and update the location data. Now the high-speed cellular networks combined with location enable to give the target service based on the current user position [13]. LBS mobile applications have been used in various contexts [14], such as local search, tour guides, mobile games, advertising, and mobile commerce. The location-based service considered in the present project is to track the locations of heart patient and CPR-certified citizens. Thus the heart attack patients can call for help from the nearby CPR-certified citizens and the nearby CPR-certified citizens can also find the location of heart patient in a quickest possible manner.

Besides the prompt initiation of CPR, caregivers (including CPR-certified citizens or medical staff providing emergency services) at site of heart attack victims also need to know the patient's recent medical data and drug allergy. Such medical data are usually not available at the scene because sudden heart attack usually happens away from hospital or home. In recent years, hundreds of heart-related applications are available for our smart phones. Many are little more than glorified diaries and a growing number are tapping into the sophisticated technology packed into these phones [6]. For example, Instant Heart Rate [7] measures our heart rate using the built-in camera. Pocket First Aid & CPR [8] from the American Heart Association can guide us through the steps of performing CPR and using the AED. It also includes in-depth information for other health emergencies. Heart4Life [9] from Singapore Heart Foundation can also increase awareness and knowledge of CPR skills amongst the general public. The general app for emergency, such as an ICE (in case of

emergency [10]) app, let user record name, medical conditions, blood type, allergies, and medical contact information into mobile phone. Thus such information can be used in emergency.

The present study aims to develop a mobile app, called SOSHeart, to provide location-based services to heart patients to call for help from caregivers as well as providing the personal medical data and other useful information in heart attack emergency. We propose that the integration of location-based service and medical data on a mobile app at heart patient's hand can assist in prompt assistance and treatment to heart attack victims in public places in emergency. The following sections will introduce the architecture of mobile app first and then present the main features of the app. The result of pilot test on the location-based service will be presented, and followed by the design of field study to comprehensively test SOSHeart. Finally we conclude the present study.

## 2. Methodology

### 2.1 System architecture

The SOSHeart is an Android-based mobile app with Microsoft Azure cloud support, which comprises two major applications, the application on smart phone and the network service in Azure cloud, as shown in Figure 1.

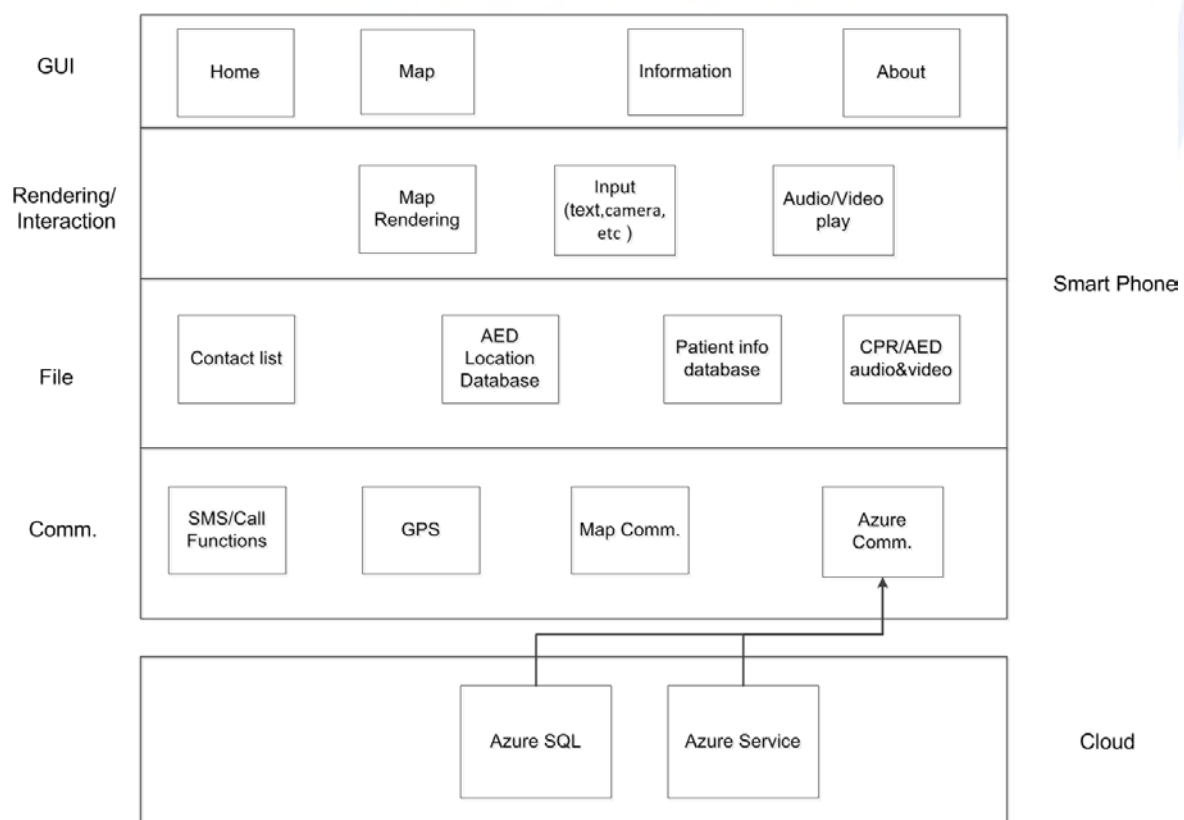


Figure 1. System architecture of SOSHeart

There are four layers with the application on smart phone. The first layer is the graphic user interface (GUI) where the user can see and interact with the mobile app. The GUI layer comprises four tabs, Home, Map, Information, and About, to categorize the available functions in fourfold.

The second layer is rendering the data and map, accepting the user input, and playing the audio and video files. This layer focuses on the functions responding to user's interaction.

The third layer is to store all relevant files. The files include the list of emergency contact, the AED location database, the database to store patient's medical information, and the audio and video files to instruct CPR and AED.

The last layer is to implement the communication function of SOSHeart. The communication function is the key component since it helps heart patient to contact the possible caregivers, for example the emergency contact or the CPR-certified citizens. There are four communication functionalities. First, SOSHeart allows user (e.g. heart patient) to send messages or make a phone call to caregivers. Second, SOSHeart records the GPS data of smart phone to track user's location in city and displays his/her location on the integrated city map. Third, a map communication function is available to retrieve OneMap (the local GIS map system in Singapore) data to the mobile phone. Lastly, the Azure communication function is to communicate with the services run in Microsoft Azure cloud.

The network services in Azure cloud are the backend services to support all smart phone's location-based services in field. The network services comprise two components, the SQL database hosted in the cloud and the Azure services to communicate with the mobile app. The SQL database will store all user's medical information and the location data in real time. The data are sent from the Azure communication function of mobile app. The Azure services are responding to maintain the SQL database and the communication with the mobile app in real time. Thus the user's current location sent from the mobile app will be received and stored in database in real time.

## 2.2 Three features for heart attack emergency

### 2.2.1 One-click assistance

The one-click assistance with SOSHeart allows a heart patient to call for help in the fastest manner, which provides three options in emergency (see Figure 2). First, the patient can call the ambulance service just by clicking one button without inputting the ambulance phone number (which is 995 in Singapore). SOSHeart can assist the

heart patient to give the current location data which can be communicated to the ambulance team for easy location of the patient in a quickest possible time.

Second, the heart patient can call and send messages to emergency contacts (i.e. the family member) by one click too. The emergency contact list can include maximum four phone numbers, where the first contact can be alerted by the phone call and message whilst the other three contacts will be alerted by the message only. Since SOSHeart can detect the patient's location, the message content will automatically include both patient's name and current location. Furthermore, if the SOSHeart is also installed with emergency contact's smart phone, they can find the patient's location in the integrated map with SOSHeart.

Lastly, the heart patient can choose the one-click SOS assistance, a holistic assistance in emergency, to (1) call for help from the CPR-certified citizens who are within 1-km range of distance to the patient's site and to (2) send messages (the same message content as described above) to all emergency contacts. Specifically, after the heart patient initiates the one-click SOS, SOSHeart will search all CPR-certified citizens within a 1-km range of the site of the heart patient and send an alert message to the found citizens. At the CPR-certified citizen's side, the SOSHeart with their mobile phone will receive the message and then the citizen can respond to the message by confirming his/her willingness to offer the help. Once the citizen confirms to help, the citizen's location will be flashed on the map and he/she can also check out the heart patient's location on the map and to find the direction to the patient's location. Figure 3, shows the display of both heart patient and two CPR-certified citizens on map.

Meanwhile, one-click SOS alerts the emergency contacts by sending message to call for help. The emergency contacts can call ambulance to go to the patient's site as well as check out the map to find that any CPR-certified citizens are going to offer help. At the site of the heart attack victim, the patient's medical data will be displayed on mobile phone screen to assist all possible caregivers and the accompanied alarm can catch attention from bystanders to offer necessary help.

When the first CPR-certified citizen arrives, he/she can proceed to deactivate the one-click SOS on the patient's mobile phone. This will inform his/her appearance at the site of heart attack victim to other CPR-certified citizens on the way.



Figure 2. The three options of one-click assistance offered in SOSHeart

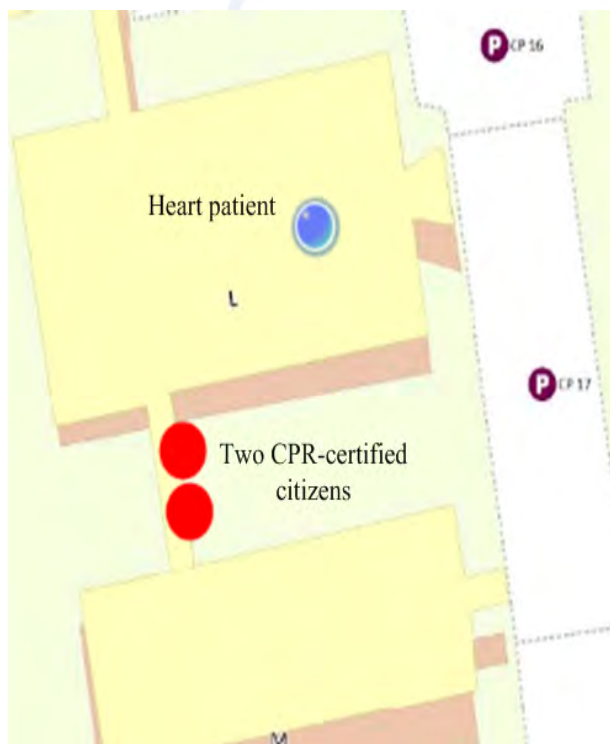


Figure 3. Displaying the positions of both heart patient and the CPR-certified citizens on the integrated map

### *2.2.2 On-site emergency guidance*

The on-site emergency guidance with SOSHeart stores the step-by-step audio instructions to prompt CPR-certified citizens to correctly perform CRP. Such instructions are very helpful in performing CPR correctly, especially for the new CPR trainee or even bystanders [12]. The audio instruction will be recorded in an mp3 file and be played by a CPR-certified citizen when performing CPR.

The emergency guidance also includes the pictures with step-by-step instructions to guide in the correct use of AED. When using AED, the audio guidance will prompt the user to do each step. But AED can't determine whether the user correctly implement the task of each step, for example, attaching the two pads to the correct positions on patient's body. The AED only has a simplified indication figure which may not give the user a clear guidance. Thus a picture showing the two pads on a real human body will be much helpful to correctly do this task. SOSHeart also includes a database storing AED locations in Singapore, which can help the CPR-certified citizens to locate and get a nearest AED as soon as possible.

### *2.2.3 Medical data for better decision support.*

The medical data included in SOSHeart is for the ambulance team and medical staff at hospital to quickly determine the heart patient's recent medical conditions and then render the right treatments. The medical data are classified into four categories: the patient's medical conditions, medication taken recently, drug allergy, and medical records. The medical data will be stored on both heart patient's mobile phone and the remote Azure database. The patient can input medical conditions related to cardiac illness, like IHD, heart attack, hypertension, Diabetes and hyperlipidaemia. The onsets of these medical conditions are required to be keyed in. The current medications used are also useful to the treatment, where the patient needs to input the name of medication. The common allergic drugs list will be included in SOSHeart for the heart patients to just choose. The patients can also input the names of other drugs he/she may be allergic to.

The recent medical records are crucial for medical teams to make decision to render correct treatment to the heart attack victim in emergency. The medical records consist of the blood pressure, electrocardiogram (ECG) report, echocardiogram report, blood test report, and other relevant past surgery. Heart patients can input these medical records simply by taking a photo of these reports obtained in clinic checkup and saving the photo in SOSHeart.



Figure 4. Four categories of medication data with SOSHeart: medical conditions, medications, drug allergy, and medical records.

### 2.3 Pilot test

A pilot test on SOSHeart was conducted with four subjects who are students from the Nanyang Polytechnic, Singapore. The objective of this pilot test is to test the reliability of one-click SOS assistance with SOSHeart to call for help from the CPR-certified citizens around the patient site. In this test, one student played the role as heart patient to initiate the one-click SOS assistance with his smart phone; two students played the role as the CPR-certified citizens; and the fourth student played the role as the patient's emergency contact. The test was conducted in the urban area of city where the speed of mobile network is good.

The pilot test found that both two "CPR-certified citizens" and one "emergency contact" could receive the SOS message from heart patient within five seconds after initiating the one-click SOS assistance. Furthermore, all subjects could see his/her own and others' positions on the map in real time. The integrated map can guide the "CPR-certified citizens" and the "emergency contact" to correctly and easily arrive at the location of the "heart patient".

## 2.4 Future field study

Several field studies will be conducted in various public places in future to comprehensively test SOSHeart in the simulated emergency situations. The public places will be shopping malls or markets since these are the major places where heart attack happens away from home or hospital. The participants of field study will be students who have received the formal training on CPR and AED. They will be randomly assigned into two groups, using or not using SOSHeart. In each group, participants will play roles either as heart patients or CPR-certified citizens. In the first group not using SOSHeart, the “heart patient” will call the “CPR-certified citizen” by dialing phone number; whilst in the second group using SOSHeart, the “heart patient” will call for help from the “CPR-certified citizen” through one-click SOS assistance. The experimenters will follow the “CPR-certified citizen” and record their performance in the study.

The performance data of interest is the time spent on each stage of treatment rendered to “heart patient”. For example, to the first group without using SOSHeart, the time from initiating the phone call to the “CPR-certified citizen” to the arrival of the called CPR individual will be recorded; whilst, to the second group using SOSHeart, the time from clicking SOSHeart app to the arrival of the first “CPR-certified citizen” at the site will be recorded too. The distances (less than 1-km) between the “heart patient” and the “CPR-certified citizen” are the same in these two groups, and they don’t know each other’s location before calling for help. We will compare the time spent by the two group participants. Meanwhile, the time taken to get the nearest AED will also be recorded and compared. The overall time taken to reach the location of the “heart patient”, the time to perform CPR and the use of AED will also be recorded. The accuracy when performing CPR and using AED will be another important data. All collected data will be analyzed statistically by t-test and MANOVA to compare the differences between these two groups. We expected that the group using SOSHeart will perform better than their counterparts without SOSHeart.

## 3. Conclusion

A cloud-based mobile application, SOSHeart, is developed to help heart patients to call for help from caregivers, ambulance team, emergency contacts, and the nearby CPR-certified citizens, in a quick and easy manner. SOSHeart provides the location-based services to facilitate caregivers to find the location of heart patient from the integrated map. The system architecture and the three main features of SOSHeart are introduced in detail. Our future work is to conduct field studies to test the efficacy and efficiency of SOSHeart to save the heart patient in emergency in public places.

## Acknowledgement

The present project is funded by the Singapore Heart Foundation with the grant application number RG2011 /002. The authors wish to thank Dr Jack Tan from the National Heart Centre, Singapore, for his expert advice and valuable input.

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*Green Infrastructure Architecture for an Integrated E-Learning, Edutainment and Communications Service in Rural Area*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

More attention in developing countries often pays to availability of the communication infrastructure. Hence the applied solution supporting by a Universal Service Obligation (USO) is procurement of the communication access, either for some voice channels or limited data service of hundred kbps. Nowadays, such a limited services only end to one or two points in a community. This effort finally is not a sustainable project, due to only limited equipment or point or type of services.

This integrated service platform architecture consists of service extension of such a point in remote area, providing communication service intra community and global access based on VoIP service, providing the IPTV platform which proposes education programs and a local Learning Management System synchronized to a Master LMS.

The architecture of those platforms consists of three different local access points containing each service (VoIP, IPTV or LMS server), which is connected each other using a wireless LAN IEEE 802.11 and supported by a single sign on system. One access point is connected to gateway server to global access via a USO connection point.

Prototype performance shows that a limited bandwidth should be assigned to guarantee voice communication performance in the backbone of transmission, i.e. 64-256 kbps. Whilst the other services may use the rest of bandwidth capacity. However, for optimum use, reserving at minimum 128 kbps for LMS transaction is recommended. Such a green architecture is constructed by considering choice of low power devices and equipments, in addition using a solar cell power generation.

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## **1. Introduction**

In order to achieve global development program as stated in World Symposium on Information Society, i.e. Information Society in 2015, Indonesia has been working hard to provide communication infrastructure, especially in rural area through Universal Service Obligation (USO) program, in order to support information traffic among people, as well as to gather information and use the information for improving their knowledge, skill, capacity and other related to their job; and finally will improve their welfare and competitiveness.

Progress of research and development in e-learning platform especially LMS synchronization, voice communication over IP networks, and internet television has been achieved to be integrated as a multiplatform services to support human resource development and communication infrastructure when they are implemented with the USO program.

## **2. Rural Infrastructure in Indonesia**

The teledensity index in Indonesia has been increased significantly thank to the cellular phone technology; according Wismadi (2010) has contributed almost 63% in 2009. This number far above the contribution of those of fixed line and fixed wireless; where the implementation and penetration is not widely spreading in all area. This magic number of 60 % does not reflect the number of one phone for one person. Growing of cellular phone business has been opened by globalization policy in telecommunication. Nowadays there are 10 operators running their competitive business at the same market in Indonesia; hence in such a situation, they offer competitive services that attract certain active customers to equip with more than 2 cellular services. However, with such a significant teledensity is not distributed related with the coverage area of services. Most infrastructure penetrates in urban area (cities, capital of province), this situation relates to distribution of the people (demography factor), developed infrastructure in rural area is so limited due to accessibility problems (due to logistics, development program, human resource capability etc.). This situation gives impact investment of telecommunication operators are limited for this area, because it is not profitable from business point of view.

Discrepancy of coverage services may affect the problems in rural area in accessibility of information. Hence the Government launched the Universal Service Obligation (USO) to collect fund from the related operators to be invested in such a rural area in order to improve the penetration rate. Universal Service Obligation is collected fund from telecommunication operators to promote communication infrastructure in rural area. The USO program launched by Ministry Communication (2010) covered 31.824 villages by remote cellular phone services via satellite. The existing communication infrastructure only covers 54% by cellular networks of TELKOMSEL and 16 % by PSTN (Public Switch Telephone Networks) of TELKOM. The table 1 shows the related USO region grouped by the biggest islands. Hence target of the USO program is to cover communication services in the uncovered one.

Table 1 Coverage of USO Infrastructure and Public Networks

Region	USO Region		Existing Telkomsel network coverage <sup>1)</sup>		Existing Telkom network coverage <sup>2)</sup>	
	Σ Sub District	Σ Village	Sub District	Village	Sub District	Village
Sumatera	1251	13312	72%	68%	67%	16%
Jawa	1233	4574	91%	91%	60%	43%
Bali, NTB, NTT	308	2368	77%	46%	19%	0%
Kalimantan	459	3797	55%	36%	15%	4%
Sulawesi	706	4758	51%	27%	32%	15%
Papua	260	3015	13%	3%	5%	0%
<b>NASIONAL</b>	<b>4217</b>	<b>31824</b>	<b>69%</b>	<b>54%</b>	<b>46%</b>	<b>16%</b>

### 3. Higher Education Resources

The distribution of higher education institution in Indonesia, as described in figure 1 prepared by the Directorate General of Higher Education (n.d.) shows that most developed region are Jawa island and north Sumatera province (green one). Other regions have large difference number of higher institution compare to those in both regions. This significance difference implies less available qualified human resources in these regions. The condition in remote/rural also lack of developed communication infrastructure as mention before. In such a situation, the activity of either formal education or long life learning is limited.

However, if we would like to develop this region, a collaboration activity with qualified resources in developed institution is recommended. Such an activity will be well run when it is supported by learning technology environment. Nevertheless, in remote area, electricity to support learning technology equipment is not always reliable or even available. Hence energy solution is using sustainable and renewable energy suitable with local resources, i.e. solar energy. In addition, to such a system design, low power energy consumption should be considered.

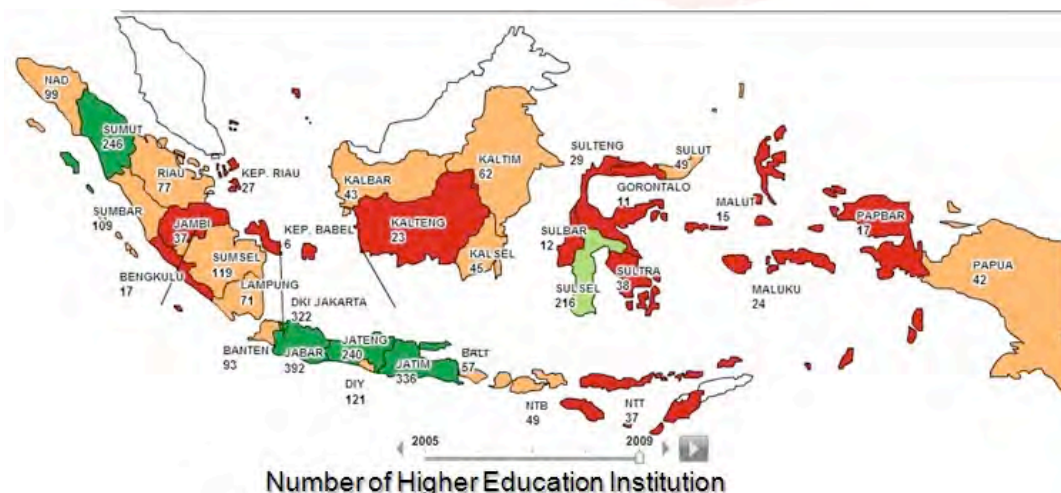


Figure 1. Distribution of Higher Education Institution

#### 4. Learning Management System (LMS) Synchronization

Learning technology solution is implemented by providing e-learning platform which suitable for the important issue: content sharing from a qualified resource institution. One consideration to implement e-learning is preparing suitable Learning Management System (LMS).

Once an LMS is decided, the learning and collaboration activity may be well prepared and organized together by local institution and the qualified one. So that content sharing through LMS synchronization method can be a sustainable solution to this situation. Such a content sharing will have some advantages as follows according Usagawa (2009):

- E-learning in each institution has various contents and different materials which have potential to be complemented among them.
- Reducing burden works for developing and maintaining digital course contents/materials
- Reducing digital gap among educational institutions.

Based on the experience, preparing good content/material in the system is not easy work. Whilst, there are many available learning material in the network. So far organizing learning activity in rural area with limited qualified resources and infrastructure will be an exhausted work when there is no support from an advanced institution.

An algorithm or method of LMS synchronization has been provided by Usagawa (2009), Affandi (2009), Ijtihadie (2011, 2012). We can share the same content or course material in any LMS in remote and in the Center one. Moodle based LMS has been chosen, and the algorithm allows us to synchronize material database from a Master server to its member.

Here is the example of snap shot material synchronization in the Master LMS in Kumamoto University and its member: an LMS at ITS Surabaya. Some course material is already synchronized. When there is modification of one course material or any addition of new course material, synchronization is applied for the difference data base system; hence the synchronization will not be repeated for the same data.

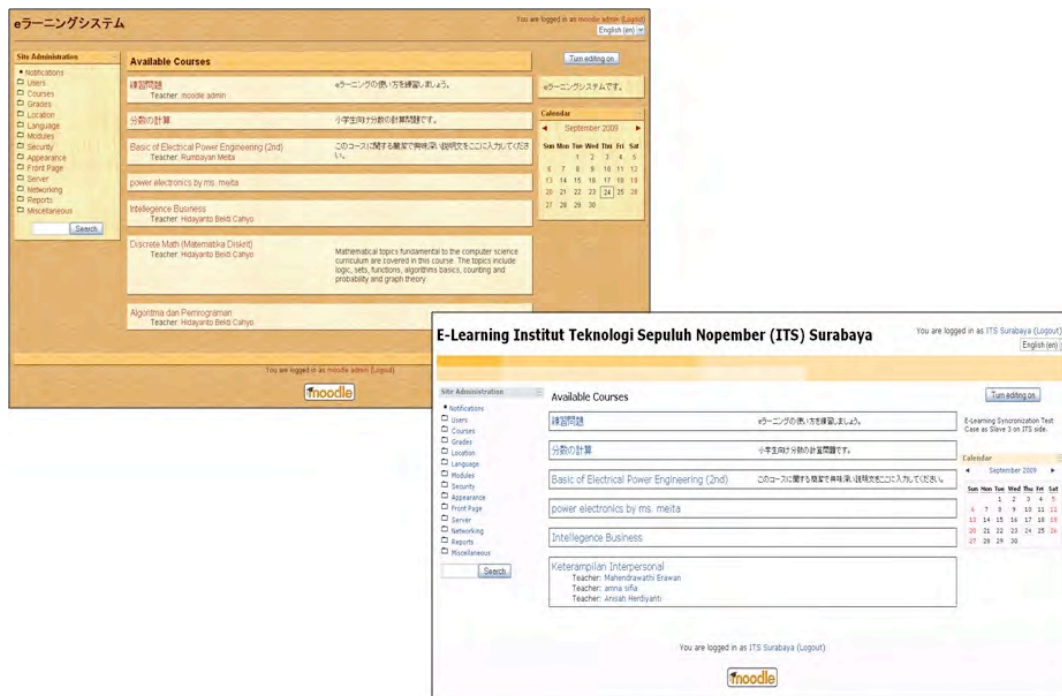


Figure 2. Snap shot of content synchronization in an LMS

Such a course synchronization time will be vary, it depends on the size of the synchronized file, the environment of networks including available bandwidth, specification of the equipment and off course the traffic condition in the network. In a such experimented network condition, figure 3 by Affandi (2009), there is no important disturbance and limitation of environment. Hence the throughput collected from the synchronization is almost the same as the available bandwidth, in addition, synchronization time almost close to ideal situation.

However, such a performance may vary, when the available bandwidth is vary, furthermore when network is not reliable; such a situation in cellular networks (i.e. using GPRS), the time performance may time varying related with the traffic condition. In a certain time it may be not available, see the graphic of GPRS, this graph shows the throughput of synchronization applied. It may stop the synchronization, and it should be restarted to continue until all file is synchronized.

Hence this method is useful, effective and efficient when we would like to share content and knowledge for rural or remote area. Based on our experience, we will use this approach to be integrated with other requirement or demand of communication and entertainment in rural/ remote area.

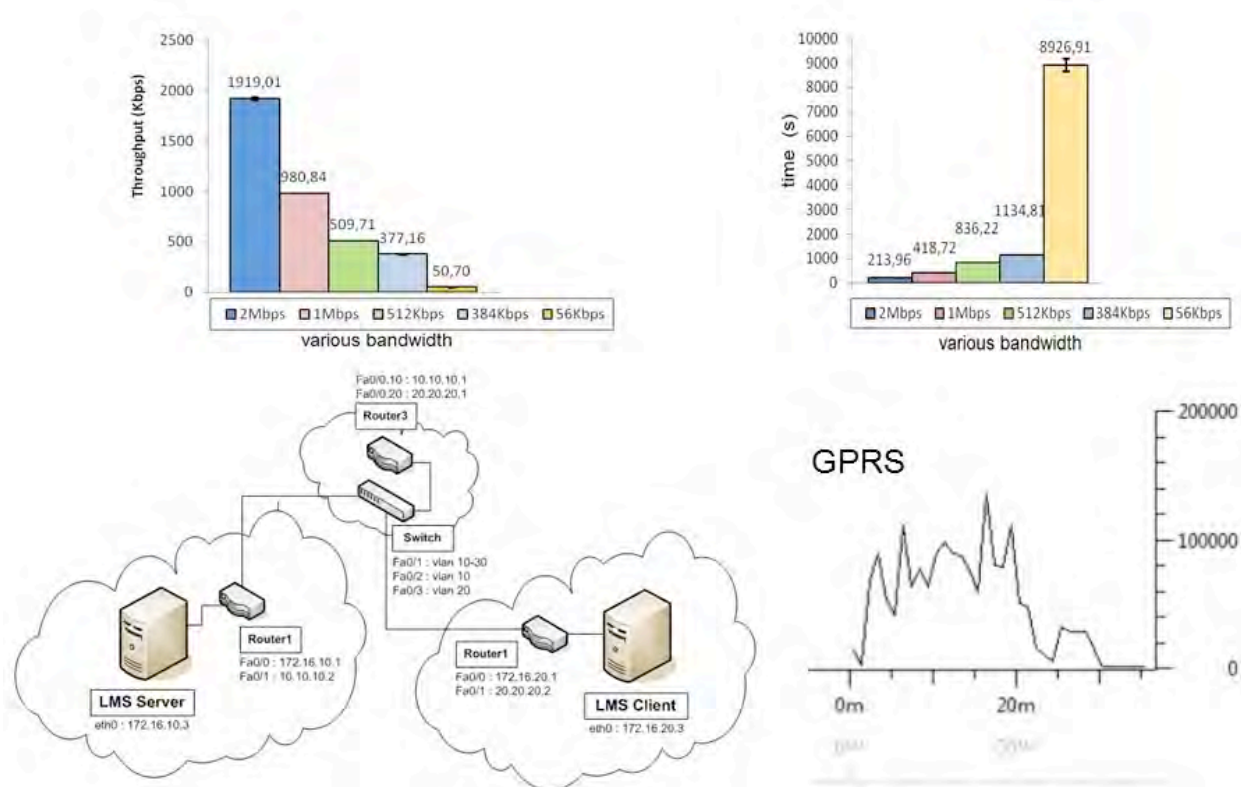


Figure 3. Performance of synchronization in the experiment

## 5. VoIP is applied as back bone of communication infrastructure

Standard protocol (IP based): SIP or H323, IETF (n.d.) is suitable protocol to organize voice communication over internet, with the following reasons:

- simple architecture and open technology : Asterisk
- minimum equipment for switch and terminals
- capacity can be improved by choosing optimal CODEC and application of parallel processing technique

VoIP server may be directly connected to users through local area network in the service point or through community access point via wireless networks; If local users only, it is used as a phone cabinet services connected to cellular gateway, but for community access; VoIP server may be functioned either as PABX for local community or a gateway to Public Cellular Networks. They may communicate each other through VoIP terminals in the community as well as to communicate with national or international society

Based on the experiments organized in our laboratory we recommend using GSM codec rather than G711 for optimal bandwidth consumption among communicators. When using such a GSM CODEC, ETSI (1998) states its rate is of 13 kbps, for duplex communication, hence required bandwidth is about 26 kbps; in simple calculation we rate 30 kbps per channel. In addition, to improve the number of concurrent, develop a cluster or parallel processing algorithm rather than using a single big capacity of server. Such a consideration is related to electric power consumption, as well as to reliability of the system.

Figure 4 show the VoIP performance with clustering server configuration. This shown that in a configuration of cluster of N servers environment of Pentium IV with 512 Mbps memory may gain a number of concurrent call (green one), i.e. about 26 users comparing 25 when using the independent configuration. As consequence, impact of call setup delay will also increase in cluster topology. However such a delay will not disturb the conversation, because this delay concerns time to connection setup, the user should wait a bit longer than in an independent configuration.

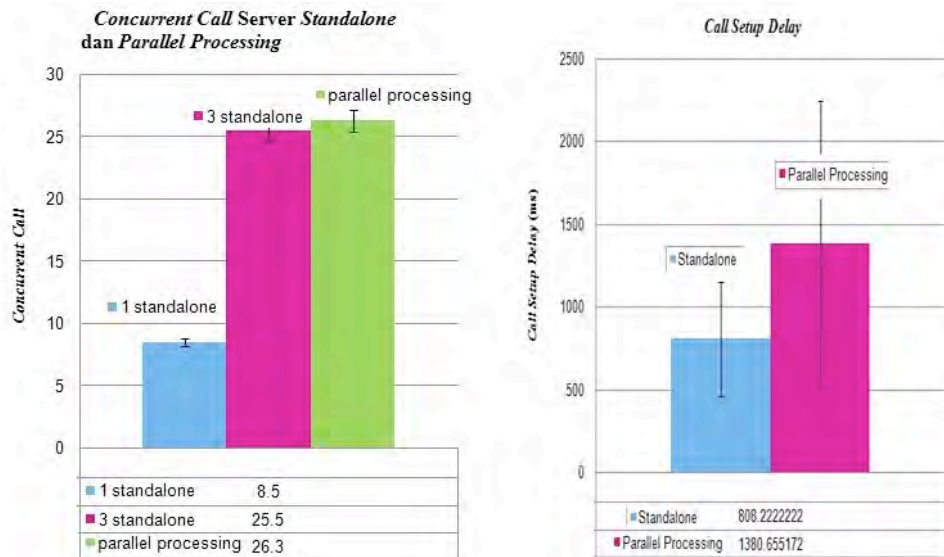


Figure 4. Performance of parallel processing VoIP server

Hence with the VoIP solution and its possibility to upgrade using clustering the VoIP server, problem of communication in rural will be significantly reduced. Use of wireless network (802.11, with 6 Mbps available bandwidth in worst situation) to support the backbone and access network will be enough, assumed 30 kbps x 50 concurrent users will consume bandwidth reservation of 1.5 Mbps.

## 6. Edutainment – IPTV

Introducing entertainment facility will attract users to access learning activity, instead of addition voice communication facility. Hence the IPTV platform is introduced. The proposed features including TV broadcasting, Video on Demand (VoD), Private Video Recording (PVR) and video conferencing.

To support the platform running in the network, it should be assured that multicast protocol may be available in the network equipment. Multicast protocol is an important support for broadcasting or video streaming. This protocol set up may be concerned in router equipment.

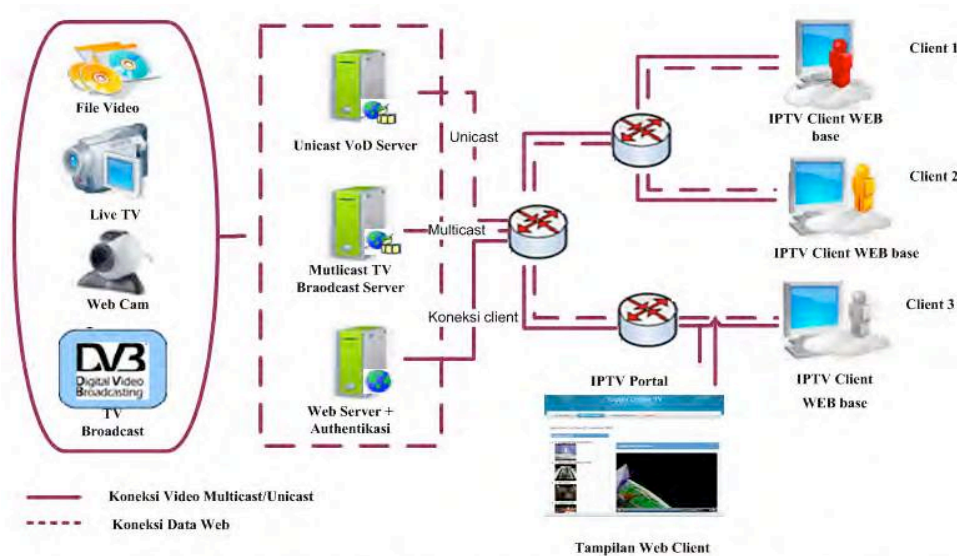


Figure 5. IPTV service features and environment

Here are the features of the IPTV:

- *Home services*, is an introduction and user login facility
- *TV Broadcast*, that equipped by a performance feedback from user, concerning video quality through a Mean Opinion Score approach. User will click the received video quality.
- *Video on Demand*, user may play a from a listed program. For this service, there is also feedback from user concerning buffering time for streamed video file.
- *Private Video Recorder* service allows user to record chosen program.
- *Video conference* service may be used to support synchronous learning in the community, or for daily usage.

The performance test for IPTV services can be evaluated from broadcast program for example. In the broadcast or multicast protocol used, when the bandwidth is not enough there will be a disturbance in vision because the video frame data is not completed due to less data rate achieved in the receiver. In addition the IPTV service is equipped feedback message from user by answering survey message on received video quality as provided reference.

## 7. Multiplatform Service scenario

There are two types of delivered USO services to end point via Very Small Aperture Terminal (VSAT) satellite transceiver, i.e.:

- *Desa Berdering (ringing village)*, means providing phone services via VSAT and pico-cell BTS in a village; usually this service provides certain amount of concurrence phone calls in the area.
- *Desa Pintar (intelligence village)*, instead of providing phone services only, the IP VSAT support Internet Protocol services. A small bandwidth, such as 256 kbps is provided as backbone to the master control via satellite. This internet gateway delivers data service to public internet service in the village. However, usually this service includes only internet access and information service provided by centralized system.



Figure 6. Configuration of Multiplatform Services

The idea is promoting two available infrastructure connections: A and B, to be backbones of multi platform services. Multiplatform services (MPS) concern for providing a local Private Branch eXchange (PABX) that may connected among people in the local community or to cellular gateway for public phone services. Then, learning activities of local people are organized via an LMS server where the contents will be synchronized to the master LMS suitable with local needs. In addition, we can provide multimedia services through MPS servers, they propose edutainment program which are broadcasted through IPTV server.

In order to extend the service, the development stage may be implemented by integrating with the existing internet public service in the main site. If there is new investment, it may be expanded the coverage by installing wireless access point network.

## 8. Green Architecture Concept

Green architecture, or green design, is an approach to a building that minimizes harmful effects on human health and the environment. The "green" architect or designer attempts to safeguard air, water, and earth by choosing eco-friendly building materials and construction practices.

Green architecture characteristics concern on energy usage efficiency, including:

- Efficient design & construction
- Energy-efficient lighting and appliances
- Alternate power sources such as solar power or wind power
- Implementation of newly innovation or invention

In order to achieve green architecture for Multi Platform Services we concern on three factors, i.e.:

- Use minimal required power consumption of equipment and systems
- Distributed each server to each service area, considering bandwidth requirements
- Sustainable power generation, using a hybrid power generation from solar cell and wind turbine

However, we also consider the system requirements of:

- Bandwidth:
  - VoIP : GSM Codec about 30 kbps per service channel
  - IPTV & conference : 512 kbps per service

- LMS : best effort, it is not necessary to prepare bandwidth management; just share the rest of available resource
- Backbone means from the available USO program, one village may have :
  - VSAT + BTS cellular for VoIP service; and or
  - VSAT IP for data transfer application using MPS

Multi Platform Service, MPS, may be designed as:

- independent architecture, for this scenario it will serve local content service only; i.e. local PABX inter community, local content of LMS and as well as IPTV
- supported by the USO backbone will provide integrated services that connected the local community to global world, and local LMS can be synchronized with the Master LMS in resource institution

Implementation of equipment and material to support technical specification for minimum requirement, we search on market some low power PC products in order to stay on minimizing energy consumption.

The following example of infrastructure and equipment are as follows:

- Low power PC: < 10 watt, 1 GHz, 1GB memory; additional memory for higher requirements
- Clustering, parallel processing, load balancing for more capacity
- Solar panel power generation : 2 x 100 Watt

To implement the system, we consider first about energy consumption, for 3 low power servers we need 24 watt, and also other equipment. Total energy consumption of about 52 is required; hence providing a solar panel system of 2 x 100 Watt will be enough to supply the energy consumption.

## 9. Model of MPS

Three models are introduced for Multi Platform Service implementation, including Centralized MPS, Distributed MPS with minimal architecture and Distributed MPS with cluster architecture. Whilst to support real-time protocol which related to voice and video application, a recommendation may vary about 0.75 Mbps for about 25 users. If such a technical specification of servers is high enough we may increase its capacity. For IPTV services required 4 x 512 kbps, or about 2 Mbps to obtained good video broadcast quality.

### *Centralized MPS architecture*

Centralized approach of MPS is a simple configuration of using three servers in one location with the input feeding from the USO infrastructure. This centralized approach may cover the surrounding area of base station. The coverage area may be extended by putting repeaters or access points pointed to the base station, as described in the figure 7.

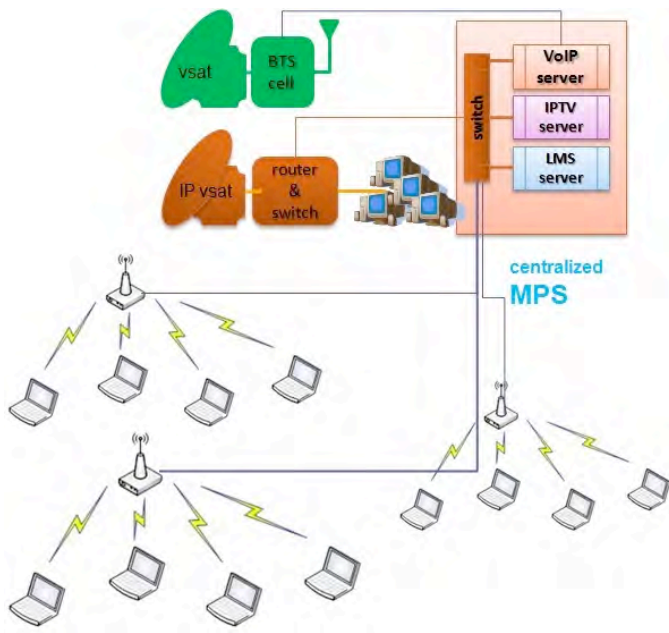


Figure 7. Centralized MPS architecture

#### *Distributed MPS with minimalist architecture*

In the distributed minimalist architecture of MPS, principally the related users are regrouped into related three community access point. Each group will be served by one server, either LMS, VoIP or IPTV server. Three servers are connected by wireless backbone (bridge) that has independent bandwidth out of the access bandwidth to users.

The requirements of distributed MPS with minimalist architecture are as follows:

- wireless bridge/router backbone is required to interconnect the servers
- each server is placed in a certain service area and has an independent access point to its users
- any user has connection to any servers through a wireless access point or cable via switch then continued to related server via wireless backbone.

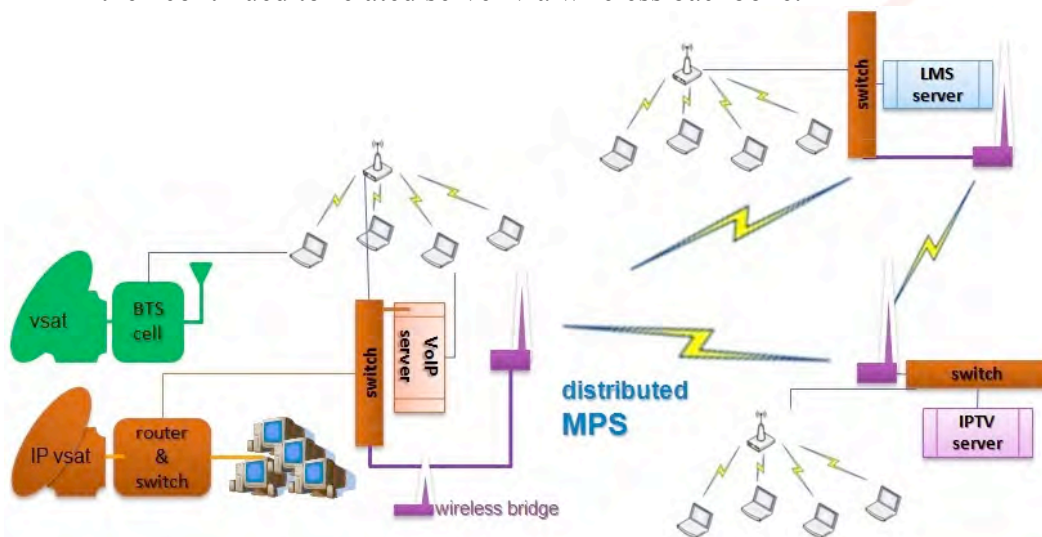


Figure 8. Distributed MPS with minimalist architecture

### *Clustered Distributed MPS Architecture*

Clustered Distributed MPS architecture is proposed when we concern on capacity of each services. We apply cluster computing or parallel processing and bandwidth management solution for integrating 3 or more servers into one system but separately located in related community access points.

Distributed MPS with cluster architecture are indicated by following characteristics:

- each service is served by a cluster of servers for different community access point
- each CAP (Community Access Point) has each MPS servers and one service cluster controller
- any users have connection to any servers through a wireless access point
- capacity of system  $>N$  times of related server,
- bandwidth per user may be expanded by additional access point

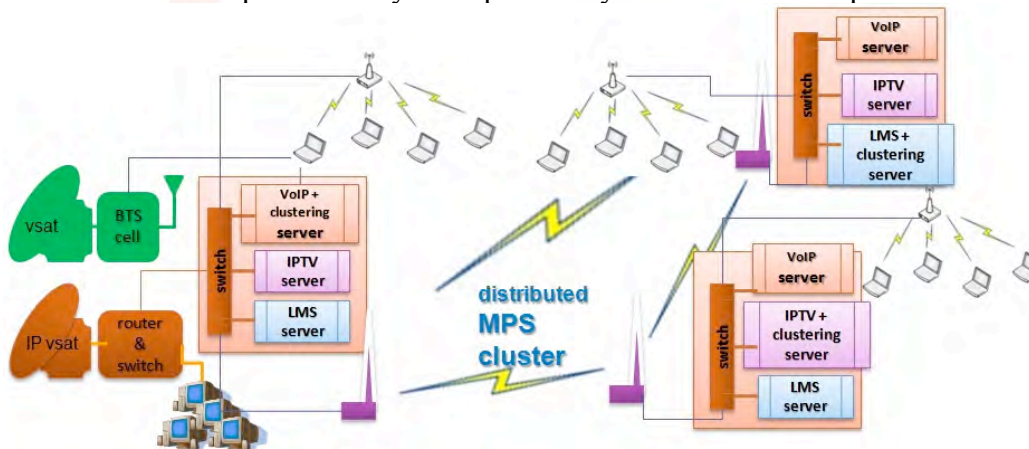


Figure 9. Clustered Distributed MPS Architecture

## **10. Conclusion**

Integrated e-learning, communication and edutainment that has been realized by a Multi Platform Services (MPS) can be considered an independent service or an extended USO service in rural area. e-learning platform using an LMS can be improved by providing an LMS synchronization method which allows content sharing among institutions or LMS Master and Client.

Communication service is supported by a VoIP server. Capacity of the server may be expanded by applying lower rate CODEC, such as GSM and by clustering method of servers.

Entertainment content may be put in to the IPTV server through TV broadcast, Video on Demand presentation. In addition, learners may perform video recording and video conference as well.

In order to implement suit with Green Technology Architecture, then the MPS may be implemented by providing less power server and using sustainable power generator, i.e. solar energy.

Three architecture or MPS has been introduced i.e. Centralized MPS, Distributed MPS with minimalist architecture and Clustered Distributed MPS architecture; to facilitate service capacity. Centralized

## Recommendation

Independent MPS architecture may be implemented without USO head end system (either cellular or IP VSAT) for local community infrastructure. In such a case, content sharing is carried out by digital media transfer (CD, USB disk, HDD etc)

MPS architecture is the simplest architecture where the capacity is limited by server specifications and reserved bandwidth for related real-time protocol (i.e. VoIP & IPTV).

Distributed MPS with minimalist architecture is an alternative solution when similar users are grouped in some Community Access Points. Servers are distributed close to the related user group.

Clustered Distributed MPS architecture is designed for expanded capacity of the system by server clustering, parallel processing or load balancing techniques. In both distributed MPS architecture may use either wireless, cable or fiber backbone media for connecting among related servers.

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*China English and Its Application in Chinese College English Teaching*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

China English is the English based on standard linguistic rules while bearing Chinese cultural and social characteristics. It is a kind of English that takes on Chinese features in both form and function. While courses of English cultures are being offered to assist the English language teaching in most Chinese universities, China English, with unique Chinese cultural traditions, is of similar significance in English teaching. With proper introduction strategies, China English would encourage students' voluntary comparison of the dissimilar cultural and language systems, avoid misunderstanding derived from cultural stereotypes, promote positive language transfer and finally improve the effectiveness of English teaching.

Key words: China English, College English teaching, Intercultural Communication

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## 1 INTRODUCTION

While the aim of Chinese College English teaching is shifting the focus to the cultivation of intercultural communication skills, English teaching should aim at increasing learners' cultural awareness on their own behaviors as well as those of English-speaking cultures, and raising their ability to reexamine and explain their own cultural standpoint. Introduction of China English with Chinese culture into English language class would provide students cultural perspectives, lead to voluntary comparison between native language and English, in which students' interest and motivation in language study would be promoted, which in turn, improve their study and help the development of competence in intercultural communication.

## 2 LITERATURE REVIEW

Fresh ideas on the effects of native language on the second language acquisition were developed since 1970s, in which friendly, positive influence of native language in second language acquisition has been attached importance. As psychological linguistics has been developing rapidly, native culture, as a positive input in second language study, attracts much attention. More people come to see native culture as a kind of input which facilitates subconsciously the second language learning process.

### 2.1 Related Linguistic Theories

Krashen's Input Hypothesis says "Humans acquire language only by understanding messages or by receiving comprehensible input" (Krashen, 1985). Hence second language input must be comprehensible to promote second-language acquisition (Krashen, 1996). In addition, Krashen distinguishes acquisition from learning in Acquisition-Learning Hypothesis. Krashen believes acquisition is supposed to be a subconscious process which leads to fluency. Learning, on the other hand, is a conscious process which shows itself in terms of learning rules and structures.

Within the above two process, Krashen points out the subconscious 'filter' as well as the conscious 'monitor' as internal processors in second language acquisition and learning. 'Filter' is responsible for the extent to which the learner's acquisition is influenced by social interest, motivation and other affective factors. When learners are with optimal attitude, they are more likely to acquire a language effortlessly. The monitor has nothing to do with acquisition but with learning. The learned system acts as an editor or 'monitor', making minor changes and polishing what the acquired system has produced. The 'monitor' is responsible for conscious learning. The learners correct mistakes in their speech according to their self-consciousness.

Sapir and Whorf believe that human being with different languages live in distinct worlds respectively. Language is not simply the labels attached to the society, but a linguistic system in our mind as the medium of expression for the impressions. According to Sapir-Whorf Hypothesis, language teaching and culture introduction cannot be separated since language and culture cannot be separated. Language is by no means neutral but directly influences people's entire life. One's native languages

strongly influence the ways one thinks and shape one's view towards the world. Thus, communication between different languages could not be well promoted by solving language problem solely. Ineffective communication between people might be attributed to their different cultures, not the languages.

## 2.2 Native Culture Influence

During 1980s, Dr. Robert Lado proposed that comparison between target language culture and learners' native cultures could raise students' cultural awareness in second language teaching. According to Dr. Lado, comparing target and native cultures with the Implementation of the certain guidelines could help students deepen their take-for-granted native cultural concepts while learning to appreciate other cultures as well.

Such comparison guidelines are: Form, Meaning, Distribution, Misinformation and Linguistic Evidence. Form is the physical setting and objects of an event; meaning refers to the meaning of an event to the members of a certain culture; distribution is the frequency which the event occurs; misinformation is the misinterpretation of people of another culture towards the event; and Linguistic Evidence is the differences in languages the two cultures in describing the same event.

One decade later, Tomalin and Stempleski (1994) proposed that English language teaching should not only concentrate on English culture input for English learners, but aims at increasing learners' cultural awareness on their own behaviors. They also list out the guidelines for intercultural communication activities and provide language teachers with practical teaching principles, among which awareness of both native and target cultures is for all levels of learners. In addition, among the four dimensions of communicative competence proposed by Canale and Swain, which includes language competence, sociolinguistic competence, strategic competence and discourse competence, the latter three are closely related to culture.

Though second language acquisition theories have long been disputed, they provide different perspective in the study of foreign language education. And, as an indispensable counterpart of English culture, Chinese native culture input would facilitate English teaching and help the development of the intercultural communication competence as the ultimate purpose of English teaching.

## 3 POSITIVE INFLUENCES OF CHINA ENGLISH

Familiar native culture in the process of foreign language study would help create a comfortable study atmosphere in class. Introduction of China English would connect Chinese identity perception and cognitive patterns for students in English study, arouse motivation and interest, and facilitate the understanding of English language and culture.

### 3.1 China English

As English becomes the international language, increasing cultural exchanges between English and non-English cultures will inevitably bring diverse fresh ingredients into English language and culture. During the process of cultural exchange and integration, localization of English appears widely in the non-English area, which brings different variations of English, among which China English is the English based on standard linguistic rules and bearing Chinese characteristics (Wang, 2000).

Different languages make their own contribution to all human civilization. There are great assets in different languages, which derived from the even more sophisticated human cultural heritage. China English, different from Chinglish, the misused English, is one of the important variation of English language. It is correct, standard English, reflects unique Chinese culture and mentality, and is of great significance to the world civilization.

China English has unique features in itself: it is sinicized English with localized characteristics. *A land of rice and fish* (China English “鱼米之乡”) has the similar meaning as in English *a land flowing honey and milk*. There is also Chinese-style in China English. For example, *One Country, Two systems* indicates clearly Chinese characteristic in the administrative manner in Hong Kong and Macao. There are also Chinese words that have been assimilated into English, like *Kongfu* (martial arts), *Guanxi* (connections), *Mianzi* (face), *Lundu* (ferry), etc..

### 3.2 Positive Influence of China English and Chinese Culture

#### 3.2.1 Current situation

Currently, universities in China have realized the significance in introduction of English culture in English language teaching. Background knowledge, like introduction of western civilization, and courses of English cultures are being offered to assist the English language courses. However, the positive influence of one's native culture and China English has not yet been attached importance.

A hundred and twenty students majored in scientific studies have been surveyed on the Chinese cultural knowledge in April, 2010. The survey questions focused on Chinese language and basic cultural backgrounds in the form of multiple choices and short-answer questions. The result of the survey shows the positive correlation between the students' English level and their Chinese cultural knowledge. Comparatively speaking, students with better English scored higher in the survey than those who are struggling in English study. Such result proved that Chinese culture has the positive influence on students' English language and culture study.

An affiliated question to the survey collected students' attitudes towards the introduction of Chinese traditional culture in their English study. There are 58.6% of the students surveyed believe that Chinese culture is very important in their language study. Students who believe it is important or comparatively important accounts for

26.3%. Thus, 89.9% of the surveyed students regards Chinese culture as a crucial influence in their English study and believe that it would benefit their cognitive understanding of a foreign language and culture.

There are 10.1% students who would not support the idea of course in Chinese culture. But most of them provide the reason for such decision as that they have already high pressure from various courses and would not like to have more. Lateral correlation shows that the average English grades of such students are much lower than those who uphold the Chinese culture introduction. Obviously, cultural awareness promotes language study, and vice versa. Native culture enriches and promotes students understanding of English language, ensures better performance in English courses. On the contrary, ignorance in cultural knowledge, take-for-granted attitude in culture study could only result in more difficulties in the language study.

### 3.2.2 Positive influence

First of all, China English in English language class would combine a familiar Chinese cultural atmosphere with foreign language input. As a result, students' eagerness in expressing their own understanding of their native culture are well-motivated, hence it is easier for them to become more willing to experiment the English language they have acquired. Effective English teaching would be again facilitated by the introduction of China English with Chinese Culture. The voluntary comparison aroused among students between Chinese and English cultures and language systems would help them clarify the roots of their recurrent mistakes derived from their cultural stereotypes and language form.

Secondly, native culture shapes one's values, hence influences one's cognitive patterns, interest and motivation in study. Values play a core role in intercultural English language teaching. Introduction of native cultural values would be able to arouse the cultural awareness from students, help them to view language study from a higher level as the way of enhancing their intercultural communication skills.

In addition, cognitive patterns and mode of thinking would influence one's English study. Most Chinese college students start English language study after they have had a fairly good command of native language. No matter the native language transfer is positive or not, it could not be ignored or eliminated. In the study of vocabulary, students would voluntarily associate similar Chinese words to memorize the newly accepted English words; while doing reading comprehension, they would translate the passage in their mind to understand the meaning it conveys. While in more expressive ability like writing, Chinese grammar structures are frequently seen.

Finally, with the development of humanistic psychology, and according to Krashen's theories about the internal processor "filter", students' emotional aspect in second language study should have been paid much attention to as well. Emotion and mood are both human experience and feelings which reflects people's need, thus both have

the positive and negative sides. Positive emotion and mood would help promote the interest and motivation in study, and dig out students' potential in language learning. Introduction of Chinese culture in English language class would help reduce the psychological distance between Chinese students and foreign language learning. It shows the language culture in the take-for-granted behaviours and most common daily life, which would help students accept the exotic knowledge in language.

#### 4 STRATEGY OF CHINA ENGLISH INTRODUCTION

In order to make the most of positive language transfer among Chinese students, to promote deep awareness and understanding of English, China English should be adopted together with the introduction of dissimilar cultural heritages and different ways of language expressions.

##### 4.1 Classroom adoption of China English

In vocabulary study, the adoption of China English could help students to realize the limitation of translation. Due to cultural differences, some Chinese and English words would not be easily translated into a read-made counterpart words. While explaining word in China English, students would have to think about the word meaning in different cultural backgrounds and thus improve their ability in comprehensive analysis and use of the language. Students would also find such activity more related to their life than mere memorizing the new vocabularies.

Efforts in connecting China English and English teaching could also be put in grammar review. For example, "He who has never been to the Great Wall is not a true man." is the Chinese expression to indicate the magnificent scenery of the Great Wall in China. Literally, it means one who has not climbed the Great Wall and appreciated the grand landscape of China from it would be having a lifelong regret. With such explanation, students would once again appreciate the Chinese expression they are familiar with. On the other hand, the sentence can be used in reviewing the grammar of attributive clause, subjunctive mood and different English tenses.

##### 4.2 Resources of China English

Selection of proper resources would be crucial to the effectiveness of China English introduction, which require English teachers to attentively observe the Chinese cultural expressions in standard English. There are excellent China English resources which basically falls into three catalogues: Chinese literature written in English by Chinese writers; fine English translation of Chinese works; works on China and Chinese cultures written by English native writers.

Three-time Nobel Prize Nominee Lin Yutang and his *Moment in Peking* would be one of such works. As one of the most influential writers in his time, Mr. Lin has more works written in English, for example, *My Country and My People*, *Between Tears and Laughter*, etc.. His works bears a casual but deep emotion, and his humor shows the wisdom of Chinese. Besides, his English translations of Chinese classical texts

have been best sellers in the western world, which would also be great resources as China English. Besides, there are numerous native English writers who are fascinated by China and Chinese cultures. If Pearl S. Buck is considered as the first generation of American writers who wrote about China, Peter Hessler, the author of *River Town: Two years on the Yangtze*, *Oracle Bones: A Journey between China's Past and Present*, and *Country Driving: A Journey through China from Farm to Factory*, would definitely be the modern counterpart. Such fine writings could serve as China English reading materials for students both in and after class.

What's more, as the development in digital audio-visual technology, various media information from the internet provides more and more language learning materials, among which is Chinese cultural introduction created by Chinese and foreigners. College English teachers could provide students with such information to assist their language study and employ the material in their classroom teaching.

Besides the efforts made by English teachers, text book compilation plays an important role in China English and Chinese cultural introduction. While most text books in China involve topics about almost everything but Chinese traditional culture, publishing houses of English text book should not only focus on the introduction of English cultural but take into consideration the national cultural characteristics. Combining the foreign culture with comparison with classic national traditions would be perfect for Chinese English learners, especially adult learners.

While employing assets of Chinese culture in the form of China English, there are limitations which should not be ignored. The students' native culture should be actively and properly incorporated in the language educational process, and should remain the assistant role in their English language study.

## 5 CONCLUSION

The appearance of China English indicates that Chinese cultural identity has been taking up more influential and positive role in the modern cultural exchange among all the nations. Universities could take China English as convenient and effective mode of language teaching resources.

The aim of language teaching is to enable a communicative tool for students, thus a balance has to be achieved in language teaching and the introduction of cultural background. After all, introduction of Chinese culture is not the dominant purpose of the English language course. While maintaining the core of English language teaching, promoting students' interests in Chinese characteristic traditional culture, enhancing the awareness of national identity would be crucial to effectively improve their command of languages and extensive bilingual cultural knowledge. Thus, students would be able to communicate better internationally in the global exchange in the future.

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*Literature and Film in Indian Bollywood Context*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012



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Literature and film is a cornucopia of vibrant essays, novels, stories that chart the history and confluence of literature and films. It explores in detail a wide and international spectrum of novels and adaptations for most people, film adaptation of literature can be summed up in one sentence, "The movie wasn't as good as the book" This volume undertakes to show the reader that not only is this evaluation always true but sometimes it is intrinsically unfair. Movies based on literary film are not the same thing as literature. I found many similarities between literature and films. You see films as a show; I see it almost as an attitude towards life film is a conductor of motion, film is an innovator in literature, and film is a propagator of ideas. My paper will focus on comparing between literatures based films in Indian Bollywood context of 70s and 80s movies with the current stage. In compare to 70s and 80s Hindi films today have become much braver. Film making is much more transparent. The makers are adventurous and the audiences are ready to accept something new and different .infected this is a fantastic phase where the experimental cinema is flourishing and the good old Hindi cinema is also rock solid. Audiences have a greater number of films to choose, compared to the olden days, where the scenario was "This is what has released and this is what you have to watch".

To believe that adaptations are acceptable substitutes for the works adapted is to believe that the experience of watching a film or television show, even the most intelligent and well-wrought shows, and reading a novel are essentially the same, A good television dramas or film adaptation can certainly provide pleasures of its own, but they are the pleasures available in that medium. A good film requires careful attention, just as does a good novel. Which we have to look and listen.

Film requires a kind of looking, but even our visual registering of word, phrase and sentence, and the way these elements arrange themselves in a "style" distinctive to the author we're reading, is more an internally-oriented mental process than an externally-oriented process of sorting sights and sounds although a kind of "listening" is also certainly involved, as language manifests itself to our mental "ear". Our imaginations then have to finish the job the writer has started. We have to mentally transform the words, phrases, and sentences into the "actions" or "thoughts" or "emotions" of the "characters" we agree are being brought to a kind of life. Films, of course, do this work for us. And we have to keep straight the way in which the characters and their actions are being presented to us in a particular sort of formal arrangement, an arrangement that is again mostly a phenomenon of our mental engagement with the text.

Literature and film are both written, when watching a movie you can see and hear the details, whereas when reading a book you are able to imagine them, and create the pictures in your head. While writing a book the author only has to imagine it and write it down, but when making a movie the director, producer, and screenplay writer have to work together to create the scenes, make the special effects, and of course find the perfect actors/ actresses for each major and minor role. There is also a considerably more amount of money involved in making a film. You have to make the scenes, hire the actor, and pay the workers, directors, producers, buy the advertisements pay for the reels that the movies are made on. The book has more information about the story while movies are shortened and with less information.

Also, for what the producer and director believe will enhance the entertainment aspect of the film, they may add information that was not at all seen in the book.

So people should read the books before they watch the movie. The other aspect of the book vs. the film is the instant ability to re-read passages that at first the reader did not totally grasp. Besides the obvious, movies condense books for time and economic reasons. The movie may also contain scenes that are not in the book. This is done for several reasons which include the idea that an addition to the movie may enhance the story.

In the process of filmmaking, there has been an integrative, connective tendency, which neither is nor present in the product. People of all religions, faiths, castes, languages and physiognomies have worked happily together in Bollywood for decades in a model of harmony. The language of the films also bears testimony to this unifying principle in evolving a widely comprehensible Hindustani, made up of Hindi dialectal words, Urdu and smaller borrowing from other languages, reflecting the diversity of India, and bypassing the oppressive Sanskritization of the official language whose failure has been evident for decades. Hindi cinema is acceptable through the length and breadth of the country but the opposition to the imposition of shudh Hindi remains unabated.

The relationship between literature and film has been the subject of numerous reflections and analyses; we turn to literature and film because they engage us. Cinema is an expression of reality, is a widely-held theory.

Over the few years, a growing numbers of universities in India have begun to offer, or are thinking of offering, film studies as part of their curriculum. A central part of these new courses, as distinct from programmes of literature and cultural studies, is a history of cinema in India and elsewhere. This offers great opportunities: the purpose of a history of cinema is to arrive at an understanding of where cinema must have come from, of how it functions within a global process of industrialization as encountered by diverse societies, and of the nexus between that and the reshaping of peoples habits and lives through the narrative strategies of individual films.

Diversity is the hallmark of Indian cinema.” If asked, what human activity is most widely appreciated and easily understood as cultural expression in India today, I would not have a moment’s hesitation in replying, it is cinema.” Films transform lives too.

What the Indian cinema needs today is not more gloss but more imaginations, more integrity and a more intelligent appreciation of the limitations of the medium. What our cinema needs above everything else is a style, an idiom, a sort of iconography of cinema, which would be uniquely and recognisably Indian. it is only in a drastic simplification of style and content that hope for the Indian cinema resides. The raw material of cinema is life itself. It is incredible that a country, which has inspired so much painting and music and poetry, should fail to move filmmaker. He has only to keep his eye open, and his ears. Let him do so.

Film and literature as manifested in the adaptations of literary text into films from its earliest beginnings, film has owed a great deal to literature. Film as some of the earlier essays have

shown, engages deeply, as does the literature, with issues of representation, telling and showing visuality and textuality, narrativity and language, image production, point of view, identification, form, genre and authorship, as do literary text. It is film in fact that provides and interdisciplinary site par excellence, requiring a multiplicity of disciplinary and theoretical grids for an adequate understanding.

Although the relationship of literature and film is not merely one of the adaptations of literary texts, adaptation nevertheless is a key issue in a discussion of the relationship of the two media, raising several hermeneutical questions pertaining to both.

Cinema has to live not in competition with literature but in reconciliation; this way it can retain its character and find its place among the arts. This would, of course, apply only to literature-based films. This reconciliation should not be confined to the format of cinema only; it has to be with time also and in consonance with three loyalties of the film-maker, to the theme, to the medium (of cinema) and to the time he lives in.

Some of the important films where literature and cinematic imagination is “Shatranj ke khiladi” starring Sanjeev Kumar this was the scene of the declining court of the Lucknow during the last days of the avadh before the rise of the British. Here one notices the collision of two world-and unhurried past and uncertain future. In this catastrophic collision the collapse of an old regime was excellerated by its failures to not read the reality.

The cinematic style is itself a mixture of the changing times. The rapid transactions are dismissed by the feudal classes. The palaces, splendour are all activities of intense fight. But for some, they choose to remain close to it. this film again led to an easy portrayal of Lucknow past. it was because such a lucknowi past was created by the early Hindi film, the use of their language settings and props this is what Mukul keshavan calls as the rise of an Islamic said culture in Indian cinema. Similar exercise is repeated in 1981 in Muzaffar Ali’s “Umrao Jan”. like “Shatranj ke khiladi”, Umrao Jan also went well with the audiences. The selective use of the Urdu language the idea of the courtesan and the use of some symbols like Hookah and Pan brought about the settings that would be a new templet. while this films where part of a north Indian Mughal cultural, the literature could easily pick up subjects and give life to these subjects. Thus some new genre in film making evolved a common language that emerged as cultural resources to be taped. This shift from Hindi to Lucknowi Hindi was accomplished very easily and certain standardised features like songs and gazals helps to illustrated this process. The audiences were familiar with the idea of a Mughal courtly style in Hindi cinematic language by this 1970s.

If the language of the court was main familiar in this genre by the association of Urdu, similar experiments were taking place with regard to the cultural hunger in many parts of the country. It is here one notices the language of protest emerging in India by the 1970s the naxasalite by K.A. abbas and bandit queen both this films situated at different chronological end of the decade shows the emergence of dis satisfaction that is becoming a problem of the country. Mithun chakravorty’s the naxasalite portraits the culmination of Amitabh bachchan angry young man’s image as an idealistic escape for the youth. Based on a literature both this films

brought out the idea of the rebel as a new phenomenon was present in both literature and film. Thus the gap between literatures of film was closing very steadily.

Conclusion-It has been observed that while language influences cinema technology mediates this influence and gives a new form to this visual language. The number of films can be grouped into genre, the face to face with literature and film and subsequent productions laid to a dialogue encounter. This audience based participation in the dialogue and their contribution as thus let to the evaluation of a new cinematic visual culture. While many margins let the lost world of Urdu and social protest were brought the main stream, it also has done the danger of homogenization. (Draft paper, a revised edition will be sending as soon as possible.).

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*Science Education and Communication as Means for Social Justice - A Vygotskian's  
Point of View of Preschool Children of Foreign-Marriage Families in a  
Rural Area in Taiwan*

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## Introduction

Science education and communication has been promoted hardly as cross-disciplinary study in Taiwan in recent years and our research attention has been focusing on science communication for preschool children of foreign-marriage families. The culture was however still very traditional and conservative those multicultural perspectives are hardly decayed. We found that there were tensions and conflicts within the families that may take their preschool children into different routs in terms of learning and development.

## Science Communication and Educational Activities

In recent years, “Science Education” and its related studies such as “Science Communication (SciComm)” and “Public Understanding of Science and Technology (PUST)” have being pushed and encouraged by the National Science Council of the Republic of China (Taiwan). While science education for the general public is meaningful, we turned our research attention to preschool children of foreign families. As Asmolov argues that “a necessary condition for the development of different kinds of systems is the contradiction (conflict or harmonic interaction) between adaptive forms of activity ... and the manifestations of activity of elements bearing individual variability.” (1998, p. 35) Thus, the adaptive activity of social norms and individual “self expression” of activity from own experience, feeling, and thought can create a tension to one’s own situation. In our study, this is the motivation that we argued to be the driven power for concept formation.

Science education in early childhood education has been always a challenge to educators, especially when science becomes a social means of production to one child’s socialization. In other words, the term “science” becomes a mediation tool for the children to think internally as well as behave externally. Thus, the science education for those young children is less a academic issue, but a practice of learning to the world. In our study, we investigated science education in foreign marriage families of those preschool children and their scientific concept formation within that domain by the assistance of a predesigned parental read-together program. Through all activities within that program, we have learned great detail about how those children form their scientific concept and their higher psychological function in the process of problem solving. Among all activities, image making and storytelling becomes very meaningful tools for our study.

## Cultural-historical Theories

Our research is based on Vygotsky's Cultural-historical psychology to investigate those preschool children's learning psychological path to their scientific knowledge construction. We used “Zone of Proximal Development” theory to understand the ins and outs of those preschool children’s learning psychological functions. Vygotsky thinks that learning is a mediated process that goes upward and downward. (Vygotsky, 1930/1978) While the zone of proximal development (ZPD) is an implication of Vygotsky’s theories in education (Vygotsky, 1930/1978), The idea and the term scaffolding was introduced

by Wood, Bruner, and Ross (Wood, Bruner, & Ross, 1976) and is often thought as an extended implication from Vygotsky's discovery of the Zone of Proximal Development. (Wertsch & Rogoff, 1984) Although the scaffolding that introduced by Wood, Bruner, and Ross in 1976 does not directly refer to ZPD, but the subsequent researches of scaffolding echoes ZPD. (Newman & Holzman, 1993) However, some scholars reject Vygotsky's ideas in the 30s Russian skin and favor the contemporary western capitalists' style. (Lambert & Clyde, 2003)

The Zone of Proximal Development is an approach and concept that Vygotsky discovers to the study of the interaction between learning and development in school learning. (Vygotsky, 1930/1978, p.84-85) According to experiments, Vygotsky believes that children with similar levels of mental development can have a result of very different degree of "subsequent course of their learning" from the guidance of a teacher. (Vygotsky, 1930/1978, p.86) The development of the children's mental capabilities can go further with the adult's assistance. Thus, Vygotsky calls the difference of development between without and with adult assistance as the zone of proximal development and describes:

It [the zone of proximal development] is the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers. (Vygotsky, 1930/1978, p.86)

Because of the help from the more knowledgeable other, Vygotsky distinguished what a child can learn by them own and what can be learned through the assistance from the more knowledgeable others. (Snowman & Robert, 2003)

### Social Justice

In our view, social justice is explained as a dialectical process of human learning and development. Within the process, all revolutionary conflicts from the social-cultural condition transform themselves as well as social. Social justice has to though mediated and dialectical process within the social-historical activities.

Social justice is ideal. It is what a human being is working hard to be himself as stand firm in the situation that is different from "usual". The usual state of mind can create peace as well as all things are in place. It is the feeling of justice while nothing is compared to be conflicted. In other words, everything is exactly the same without contracting. In fact, contraction is eliminated from the awareness of mind while the societal conflict is eliminated. The social norm replaces human cognition to the rest of the world and becomes stable. The ideal of justice becomes the norm that is given from institution authoritative voices, thus our minds are finally self-contained. No abstraction is produced from any activity within and in between minds. Science Communication as social means for this mediated and dialectical process. In addition, Hegel thinks that justice as institutionalized freedom. (Hegel, 1975)

Therefore, social justice is socially mediated and historically situated. It is not a fixed stage of social relationship between foreign-marriage families and the rest of the society, but a dynamic process of learning and development in itself. Learning and development

by using scientific knowledge is meditational tools for communication and negotiation. While the society provides a socially conditioned rule to follow, they are able to deconstruct the rule and reconstruct to a new one that fits their needs. Although all the reconstruct knowledge have the same components as the socially conditioned one, the new one has a new meaning for those foreign marriage families. While concepts of living is different from others in the family, as well as the others outside the family, foreign marriage mothers are having conflicts.

### Learning Process

A total of 12 preschool children participate in our research project. We use language as the key to detect the children's higher psychological functions in the activity, and the content is purposely designed to promote scientific knowledge while embedded foreign mother's cultural artifacts along with the program such as children's music and graphics from the foreign mother's native tone.

### Means of Production

This dialectical process is children's scientific concept process and activity for their scientific concept development. We came up with a idea of pseudo-multicultural concept for that children of foreign marriage families do not benefit from their mother in their scientific concept development and that may become a guide for a social change this existing pseudo-multicultural environment into more multicultural respects.

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*Learning and Teaching Mathematics with GeoGebra and Microsoft Excel*

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## Introduction

I am a lecturer in The Hong Kong Institute of Education. In recent years I am involved in the teaching of a module ‘Mathematics Explorations with Technology’.

The major focuses of this module are algebraic and dynamic geometry softwares with their applications for enhancing explorations in primary mathematics. With the rapid advancement of technology in our information era, the module content is shifting from the introduction and usage of classical mathematics softwares such as Mathematica and Maple to freewares like Cabri Geometry and GeoGebra.

In this paper I would like to share a teaching case with illustrations selected from project works designed by my students.

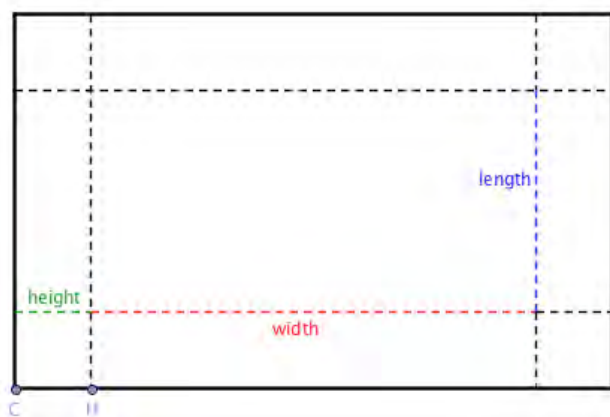
## The Maximum Volume Problem

A4 and A3 sheets of paper are commonly found in schools for photocopying machines. What is the width( $w$ ) to length( $l$ ) ratio of the A series of paper? By proportionality of similar figures we have

$$\frac{w}{l} = \frac{l}{2w}, \text{ yielding } 2w^2 = l^2. \text{ So the ratio } w : l = 1 : \sqrt{2}.$$



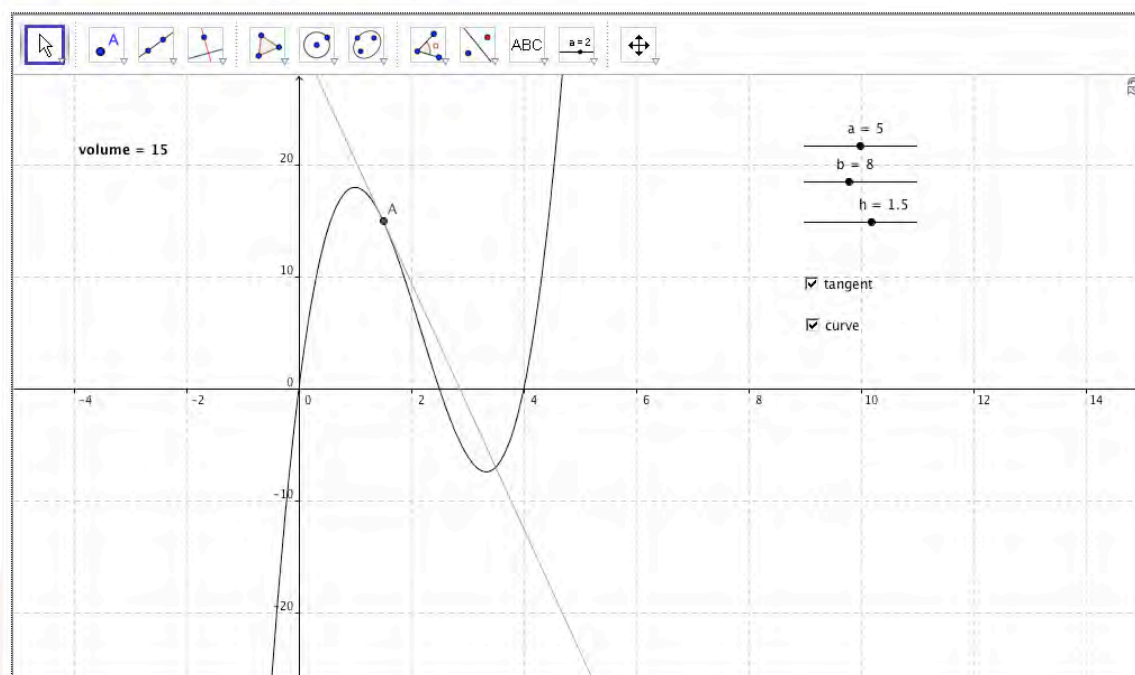
What is the maximum volume of an open box created by a sheet of A4 paper? This is a well known calculus problem in mathematics for students to carry out exploration.



Take the width of a paper to be 1 and the length to be  $\sqrt{2}$ . The volume of the box,  $V$  is a function of the height of the box,  $h$ . Obviously in this case  $0 \leq h \leq 0.5$ .

$$V = f(h) = (1 - 2h)(\sqrt{2} - 2h)h = 4h^3 - 2(1 + \sqrt{2})h^2 + \sqrt{2}h$$

The function  $f(h)$  is continuous and differentiable in  $0 \leq h \leq 0.5$ .



For maximum volume  $\frac{dV}{dh} = f'(h) = 12h^2 - 4(1 + \sqrt{2})h + \sqrt{2} = 0$

$$\text{Therefore } h = \frac{4(1 + \sqrt{2}) \pm \sqrt{[4(1 + \sqrt{2})]^2 - 48\sqrt{2}}}{24}$$

$$= 0.612 \text{ (rejected) or } 0.193 \text{ (to 3 decimal places)}$$

With width = 210 mm and length = 297 mm,

the required height for maximum volume =  $210 \times 0.193 \text{ mm} \approx 40 \text{ mm}$ .

### Exploration with Microsoft Excel

The above analysis requires the prerequisites of differential calculus which can hardly be understood by primary students. However with the advancement of technology teachers can write simple subroutines in Microsoft Excel. By applying the elementary volume formula students are guided to search for the solution.

Here is the basic subroutine with a ‘for-loop’:

```

Dim i, k As Integer
Dim length, width, start, interval, h As Double

Sub volume()
    Call GetData
    i = 5
    For k = 1 To 10
        If k = 1 Then h = start Else h = h + interval
        Cells(k + i - 1, 4) = h
        Cells(k + i - 1, 2) = length - 2 * h
        Cells(k + i - 1, 3) = width - 2 * h
        Cells(k + i - 1, 6) = h * (length - 2 * h) * (width - 2 * h)
    Next k
End Sub

```

Entering the length and width of the given paper, and the initial value of  $h$ , with the decided increment, we can execute the subroutine. Below is an example.

1. Starting with  $h = 1$  and increment of 1, volume attains a maximum when  $h = 4$ .

	length	width	starting pt	interval
A4	29.7	21	1	1
length	width	height	volume	
1	27.7	19	1	526.3
2	25.7	17	2	873.8
3	23.7	15	3	1066.5
4	21.7	13	4	1128.4
5	19.7	11	5	1083.5
6	17.7	9	6	955.8
7	15.7	7	7	769.3
8	13.7	5	8	548
9	11.7	3	9	315.9
10	9.7	1	10	97

2. Starting with  $h = 4$  and increment of 0.1, volume attains a maximum when  $h = 4$ .

	length	width	starting pt	interval
A4	29.7	21	4	0.1
length	width	height	volume	
1	21.7	13	4	1128.4
2	21.5	12.8	4.1	1128.32
3	21.3	12.6	4.2	1127.196
4	21.1	12.4	4.3	1125.052
5	20.9	12.2	4.4	1121.912
6	20.7	12	4.5	1117.8
7	20.5	11.8	4.6	1112.74
8	20.3	11.6	4.7	1106.756
9	20.1	11.4	4.8	1099.872
10	19.9	11.2	4.9	1092.112

3. Starting with  $h = 4$  and increment of 0.01, volume attains a maximum when  $h = 4.04$

4. Starting with  $h = 4.04$  and increment of 0.001, volume attains a maximum when  $h = 4.043$

	length	width	starting pt	interval	
1	29.7	21	4	0.01	
2					
3					
4					
5	1	21.7	13	4	1128.4
6	2	21.68	12.98	4.01	1128.439664
7	3	21.66	12.96	4.02	1128.468672
8	4	21.64	12.94	4.03	1128.487048
9	5	21.62	12.92	4.04	1128.494816
10	6	21.6	12.9	4.05	1128.492
11	7	21.58	12.88	4.06	1128.478624
12	8	21.56	12.86	4.07	1128.454712
13	9	21.54	12.84	4.08	1128.420288
14	10	21.52	12.82	4.09	1128.375376

	length	width	height	volume	
1	29.7	21	4.04	0.001	
2					
3					
4					
5	1	21.62	12.92	4.04	1128.494816
6	2	21.618	12.918	4.041	1128.49501
7	3	21.616	12.916	4.042	1128.495099
8	4	21.614	12.914	4.043	1128.495081
9	5	21.612	12.912	4.044	1128.494958
10	6	21.61	12.91	4.045	1128.49473
11	7	21.608	12.908	4.046	1128.494395
12	8	21.606	12.906	4.047	1128.493955
13	9	21.604	12.904	4.048	1128.493409
14	10	21.602	12.902	4.049	1128.492757

The precision of  $h$  is getting higher and higher in this iterative process. This is in fact the idea of numerical method in obtaining the solution correct to the decided decimal places.

### Exploration with Origami

For primary students concrete objects are better than pure number operations in interpreting results. The exploratory process can be visualized concretely with the help of origami models. The figures below illustrate Lucas Garron's way of locking the corners of a box.

Step 1: form the crease as indicated	Step 2: fold the 45° angle bisectors out	Step 3: now in 3D, continue collapsing
Step 4: fold the top part down as far as possible	Step 5: finished lock	An open box by origami

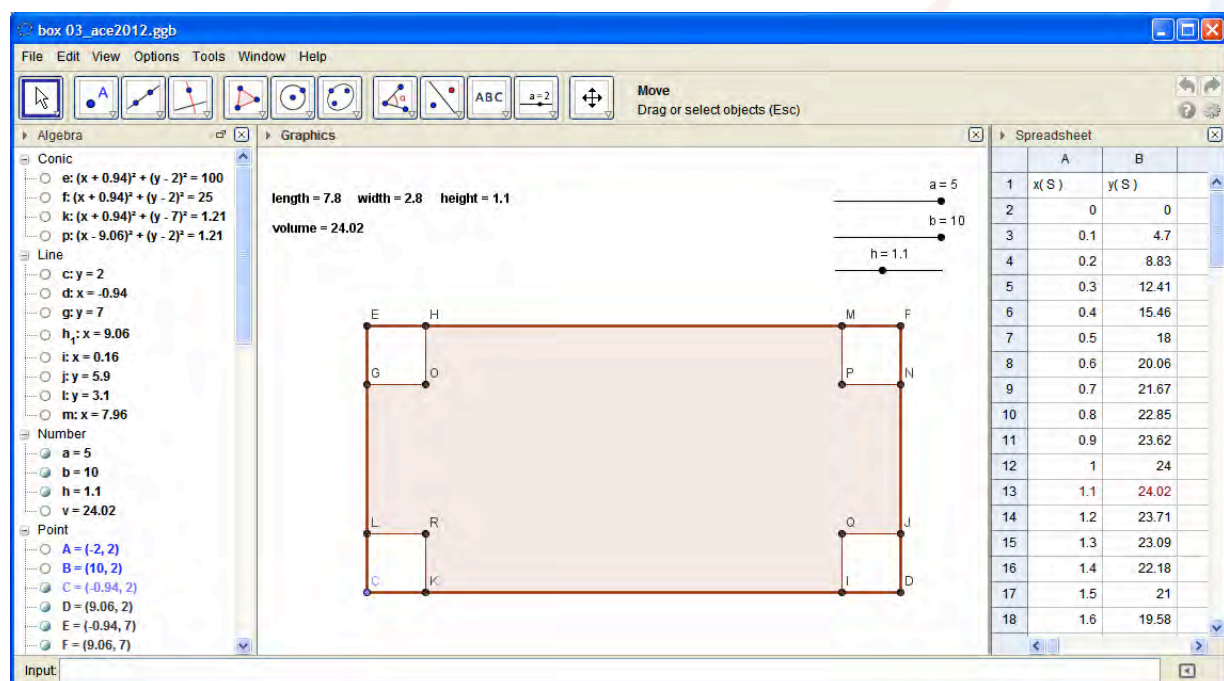
Below is a suggested classroom procedure for teachers.

1. Teacher demonstrates to students the folding procedure of an open box with a particular height. Then the exploratory problem of finding the box of maximum capacity is raised.
2. The class is divided into groups. Each group makes several open boxes (4-6) of different heights.
3. Students are then asked to measure the capacity of these boxes by rice and obtain their dimensions by ruler.
4. Remind students to enter their measurement results in a worksheet table.
5. Teacher, with the help of Microsoft Excel worksheet, checks the accuracy of students' data obtained and feedbacks on students' team work.
6. Teaching explains to students how the subroutine works with demonstrations.
7. A discussion is held on finding the value of  $h$  for the box with maximum capacity.

### Exploration with GeoGebra

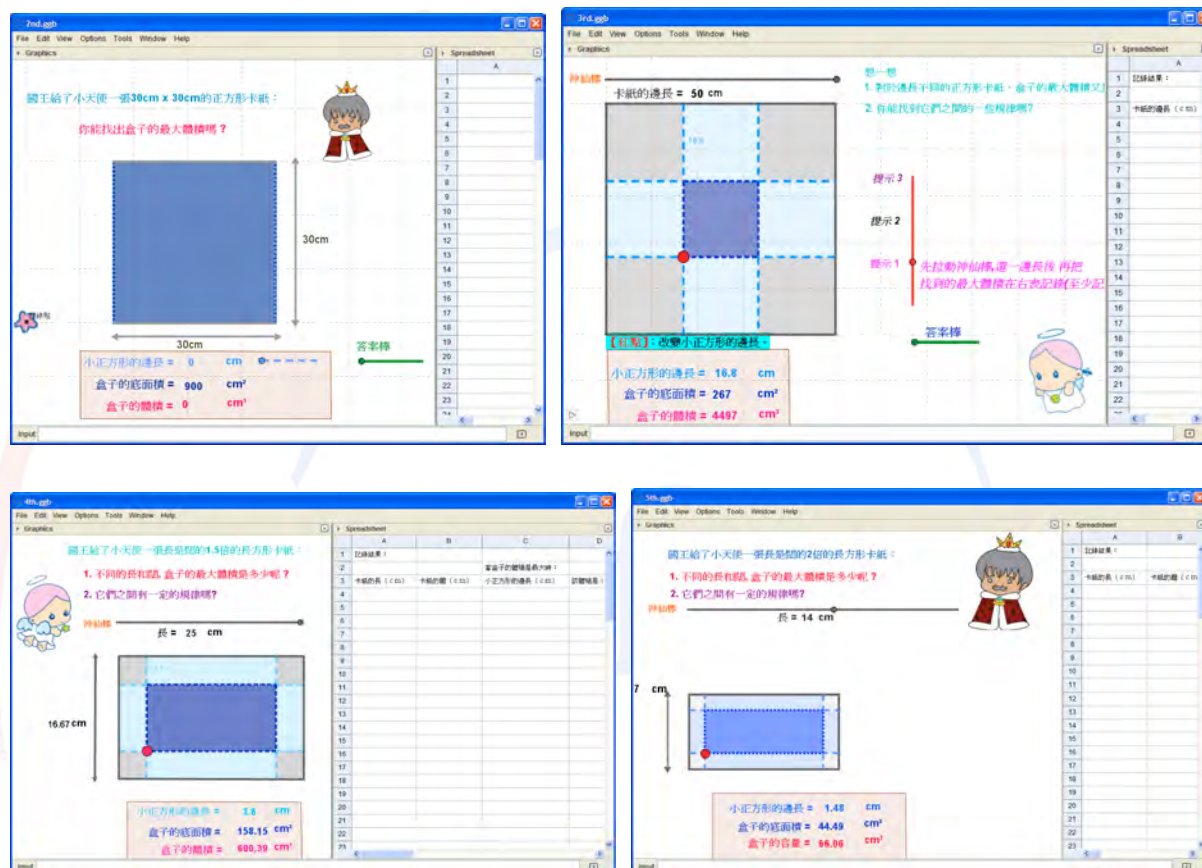
It is natural that classroom measurements are accompanied by errors. And the building up of origami models is time consuming. The application of dynamics geometry software can overcome these shortcomings. GeoGebra is a prominent example developing rapidly in recent years. It provides us various platforms (algebraic view, graphic view and spreadsheet view) in illustrating the model visually and analyzing the situation systematically.

With a basic mastery of this software the net of this model can be constructed with slider controls for width, length and height of the box. And their corresponding volumes are computed and recorded conveniently in the spreadsheet embedded.



## Exploratory Design of my Students

Teaching is an art. To carry the investigations interestingly and meaningfully in primary classrooms, Carol Choi-Kuen Chan, one of my students, integrates the story-telling (The King and the Angel) techniques with a series of GeoGebra files constructed and compiles them into a learning package. The figures followed are the interface designs of her GeoGebra interactive worksheets.



Below is her sequence of exploration questions:

1. The king has given the angel a 30 cm x 30 cm square paper. What is the volume of the largest box created?
2. What if the length of the square paper is altered? Do you observe any pattern?
3. Now the king gives the angel a rectangular sheet instead. Its length is 1.5 times the width. What is the volume of the largest box?
4. How about the case if this ratio is changed, say the length doubles its width? Is there any pattern?

These files have been uploaded to GeoGebraTube . They are assessable in the world-wide-web:

<http://www.geogebraTube.org/student/m971>

Choi-Kuen is a pre-service student teacher. Would you like to provide her your comments and suggestions based on your teaching experience?

### Challenges and Transformations

Enormous changes are brought about by the advancement of technology. The above is just an illustration of how mathematical concepts and generalizations are visualized. The data generation ability of these freewares provides students with a lot of data which facilitate them to make conjectures and guesses. Hence shortens the time elapsed in constructing and manipulating concrete models. This is quite impossible in the past - young students without strong mathematical background can explore complicated mathematical problems with the assistance of technology.

Nearly twenty years have passed since the advocate of pedagogical content knowledge (PCK) by Lee S. Shulman. Living in the information era today teachers are inevitably to pick up technological knowledge for designing and implementing their lessons. In compare with the old days mathematical modeling is far much easier and simpler with the help of technology. And that is why the idea of technological pedagogical content knowledge (TPCK) emerges. Can you tell how pedagogical, content (mathematical) and technological knowledge come into action in the example above? Does it inspire you with more similar teaching ideas? May be the essays 'Math in the Box' by Mary DeYoung and 'Algebraic Thinking through Origami' by William Higginson and Lynda Colgan will give you more insight! Would other origami methods in folding an open box provide you more mathematical explorations?

In our IT world new development takes place every day. Only by continually learning teachers can keep up with the swift advancement of mathematical softwares. Each time I pick up my teaching module GeoGebra is revised and updated (While I am writing this paper, the new version 4.2 is coming!). It does more and more in a user-friendly manner. So I have to learn with my students! And it appears to me that the GeogebraSpreadsheet will sooner or later take the place of Microsoft Excel!

The virtual reality brought about by technology is fascinating. But concrete teaching aids and traditional mathematical proofs do have their own importance. Their roles are not replaceable. With proper management both concrete and virtual manipulatives are powerful learning/teaching tools for students and teachers.

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#### Acknowledgements

I would like to take the opportunity here to thank my students, particularly Choi-Kuen, Hoi-Ying, Toi-Yu, Shuk-Fan and Ting-Sau who had spent much time and effort in the entire learning process. Their assignments also inspire me to learn further as well!

*English Language Education as a Lingua Franca in Asia*

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## **1. Introduction**

Globalization induces the importance of English as a common tool of communication, i.e., an important lingua franca in Asia. However, our classroom practices have not provide enough opportunities for our students to engage in using English as a lingua franca (ELF), in spite of the fact that Information communication Technology (ICT) enables us to give our students the abundant practices of ELF. We argue that ELF practices are solutions to enhance English Language Education in Asian countries and we present the method of teaching as a lingua franca, the survey data to prove the motivational merits, social skills, intercultural competence and the method of automatic assessment of oral performance.

English should be taught as a lingua franca. The learners and users of English should be given more ELF-centered practice and opportunities to use English. Kirkpatrick (2012) mentions in his keynote speech at Conference on English in Asia's Languages Habitats and Europe's Asia Competence that the goal of English education among the outer circle and expanding circle countries should be set at the level of successful ELF users rather than that of Native Speakers. This suggests the paradigm shift of the traditional model dependent on native speaker norms to a bilingual or multilingual model and at the same time that Learners' proficiency levels should be assessed in terms of international standards such as Common European Framework of References (CEFR). In this symposium, we demonstrated not only educational merits of ICT-based Asian interactions but also the method of measurement and assessment.

## **2. Cyber ELF Practices: Cross-Cultural Distance Learning (CCDL) at Waseda**

Since English began to be used as a common tool of communication in accordance with globalization, the most common local problem in Japan is a student's lack of English oral proficiency required to discuss the current problems in the world, such as climate change which inherently contains such irrevocable dilemmas about national interests as opposed to lengthy process of idealistic consensus-building towards global solutions. In addressing other current problems in the world without resorting to the military powers, we need to realize that global solutions can be reached at with our firm recognition that this is the age of dialog. In this sense, English Education has been highlighted as a means of promoting dialog more urgently now than before. In order to overcome the local problem mentioned above, Waseda University adopted the three stages of English Education, as shown in Figure 1: tutorial English to promote communicative competence, cross-cultural distance learning to promote inter-cultural

competence and cyber seminars among Asian students to promote discussion ability on complex issues.

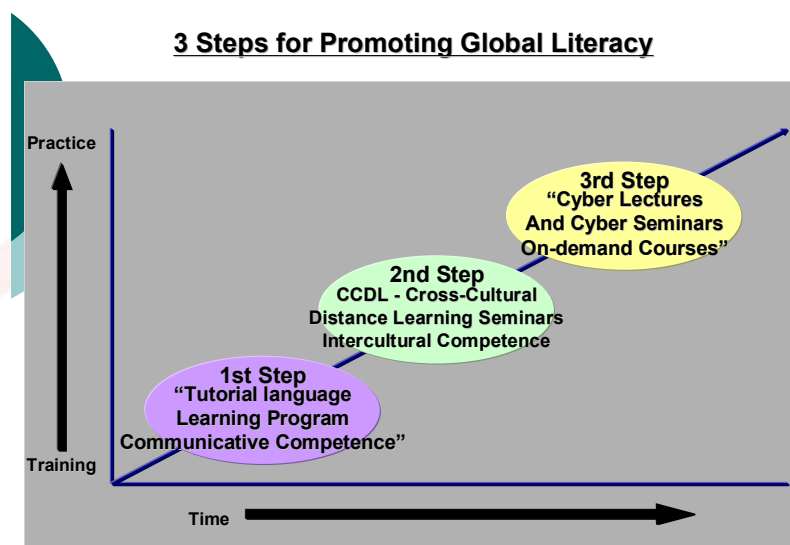


Figure 1: Three Steps of English Language Education at Waseda

Communicative Competence is summarized by Kramsch (2005) as Melting Pot View; i.e., you are accepted once you conform to the main stream of American or British Culture and Societal norms embedded in Native Speaker (NS) English. Without being melted into the mainstream NS norms nor blindly following their norms, communicative competence can be introduced in Asia; we need to know NS values and how NS speakers behave, but we do not need to mimic them. Once Asians are accustomed to detach ourselves from the authority and social norms, and to test ourselves as individuals, we would begin to trust our instincts and feelings and could think outside the box. For this reason, our programs at the first stage of Educational goal are based on communicative competence. In the second stage, we conduct one-to-one cyber seminars in which Intercultural Competence is introduced (Figure 2 and 3). Intercultural competence is metaphorically summarized by Kramsch as Salad Bowl View in which differences are respected as diversity, but the sense of unity may be difficult to achieve. English Language Education at this stage is called CCDL (Cross-Cultural Distance Learning) programs at Waseda University. We use videoconferencing system (Polycom) and/or the PC chat system (LiveOn) and conducts exchanges with students from partner overseas universities in English. Exchange tools between Waseda students and oversea partner students are either TV conferencing system and/or oral chatting system.



*Figure 2: Cyber Exchange Course*



*Figure 3: International Student Forum*

CCDL promotes understanding of different cultures and provides opportunities to gain practical communication abilities in English, which leads to links with Asia and steps to the world. This is the age of Dialog. Conflict resolutions had better be reached at by dialog rather than military powers. At the tertiary level of Education it is better for us to give Dialog training to our students. The role of English in Global Literacy should transform itself and the nature of English Language Education should be shifted from NS-oriented to Asian Englishes-oriented. At the final stage, cross-cultural competence is focused in our education; Cross-Cultural Competence represents a set of social and emotional intelligence to cope with incommensurable world views. Multi-point Distance Learning System is utilized and the students need to cope with multiple points of views such as historical perspective, socio-economic perspective, political perspective involving not only the point of view of a global citizen but also that of an expert in a given area. In the second section of this paper, our educational outcomes are briefly described in terms of motivation, and social skills. Tables 1 and 2 summarize our educational efforts in Asia.

Table 1: The Number of Cyber Exchange courses at Waseda University

	2005	2006	2007	2008	2009	2010
Classes	34	45	67	83	102	85
Students at Waseda	2235	3211	3379	3477	3543	3574
Overseas students	1181	2094	3058	3882	4422	4254

Table 2: The number of participating overseas universities for cyber exchanges

	2005	2006	2007	2008	2009	2010
Countries	21	21	21	24	24	24
Universities	52	55	78	86	89	91

These Cyber courses accords with Kirkpatrick (2010) in several ways.

1. Learners of English need to be able to use English successfully in ELF interactions and in the ELF contexts; although they are communicating via Internet, the ELF cyber practices are authentic social contexts within our region.
2. The educational targets are not set at the Native-like fluency; rather we aim at the proficiency levels of successful bilinguals or multi-linguals.
3. We wish to measure “success and fluency against the ability to engage in lingua franca communication”: Kirkpatrick (2010, p.176).
4. The teachers in these cyber courses are not monolingual native speakers of English, but they are bilinguals or trilinguals in China, Korea, Taiwan, Singapore, Hong Kong, Macau, the Phillipines, Malaysia and Japan. In the ELF contexts, these bilingual or multilingual teachers can become “not only the role models for their learners, but, crucially, they also become their linguistic models”: Kirkpatrick (2010, p.177).
5. Cyber exchanges can establish partnerships with other universities in different countries; in particular, they have face-to-face meeting either in Singapore, Seoul, or Tokyo and they work together on projects in which they need to use English as a lingua franca.
6. The CCDL courses offer opportunities to enhance inter-cultural and cross-cultural communication skills, as recommended by Kirkpatrick (2010). Our courses at the tertiary level need to include educational opportunities to discuss current issues in our contemporary world.

### **3. Cross-Cultural Distance Learning (CCDL)**

#### **3.1 Introduction**

Waseda University has been conducting Cross-Cultural Distance Learning (CCDL) Program since 1999 in order to enhance students' cross-cultural understanding and to improve their English communication skills. The four objectives of CCDL are (1) to deepen students' cross-cultural understandings between Japan and Asian countries through the means of English, (2) to foster understandings for different cultures based on the sound comparisons of cultures, (3) to acquire the willingness to participate in discussions, and (4) to acquire such skills as discussion skills, facilitation skills and presentation skills.

As the second objective above indicates, in this global age, one cannot emphasize enough the importance of English between non-native speakers of English at the tertiary level. To accommodate this trend, in the field of Applied Linguistics the concept of 'English as a Lingua Franca (ELF)' has emerged as an alternative to such concepts as 'English as an International Language (EIL)' and 'World Englishes (WE).' One feature of ELF is that it focuses on the actual interactions between non-native speakers of English rather than the empirical study of nativized varieties of English which WE seems concerned with (see Cogo and Dewey, 2012 for further discussion on this issue). In this vein, we can state that what CCDL aims to accomplish is in line with the concept of ELF.

CCDL has the potential for offering substantial benefits relative to the amount of student interactions in the context of ELF. One benefit of CCDL can be summarized as follows:

Students who have been exposed in person to the styles of English communication by Chinese or Koreans, which are influenced by their cultures, would be in an advantageous position to better understand their English, compared with those who have not had such chances. This activity should also be meaningful as an effort to help Chinese and Korean people become familiar with the styles of communication in Japanese English (Translated by Hino, 2009).

In other words, CCDL encourages students to engage not only in ELF interactions but also in cross-cultural understanding.

The CCDL Program divides into two types: theme-based CCDL and non-theme based CCDL

(see Nakano et al., 2008). The former refers to CCDL courses with predetermined content and accompanying textbooks. The latter, on the other hand, consists of CCDL courses where instructors can decide what to teach in cooperation with overseas partner university instructors.

The CCDL courses we focus on here are the theme-based CCDL, which includes ‘Social and Global Issues Course,’ ‘CCDL Media Course,’ and ‘International Career Path Course.’

### **3.2 The content of CCDL Courses**

In this section we will focus on the theme-based CCDL, that is, Cross-Cultural Distance Learning (CCDL) Courses, which include three one-semester (15 weeks) sub-courses: Social and Global Issues, Media, and International Career Path.

For the signup for these CCDL Courses, students are required either to have taken ‘Intermediate-level Tutorial English’ or to have English proficiency equivalent to TOEFL 500 scores (PBT), 200 scores (CBT), or 63 scores (iBT). Some of the characteristics of CCDL Courses are (1) relatively small classes (less than 25 students), (2) joint classes with Asian partner universities using LiveOn video chatting and TV conferencing systems, (3) highly-structured class schedules, and (4) original textbooks.

Participating partner universities as of 2012 are Korea University, Yonsei University (the Republic of Korea), Tamkang University, Southern Taiwan University of Technology (Taiwan), Dalian University of Technology, Dalian Jiaotong University, Dalian University of Foreign Languages (the People’s Republic of China).

As for the textbooks, each course (i.e., Social and Global Issues, Media, and International Career Path) has their original textbooks. These textbooks contain nine skills and concepts to make communication between interlocutors more smooth and effective in cross-cultural settings. These skills and concepts are (1) Facilitation Skills, (2) High- and low-context Communication, (3) Intercultural Translation, (4) Cooperativeness, (5) Reaching Agreement, (6) Risk Orientation, (7) Emotional Intelligence, (8) Social Intelligence and (9) Research Skills.

For instance, among the nine skills and concepts, facilitation skills are presented in the textbooks as follows:

1. Keeping the conversation going.
2. Ensuring everyone is participating and can understand what is being discussed.
3. Writing discussion questions and keywords in the TextBox to ensure everyone is focused on the main discussion topics.
4. Inviting a student to speak up or ask questions if they have been quiet for some time.
5. Preventing one person from dominating the discussion.
6. Deciding who should go first if two or more people want to speak at the same time.
7. Directing the discussion by calling on individual people by name.
8. Preparing extra questions and/or topic-related material beforehand to deepen and/or extend the discussion.
9. Asking “Why?” questions during the discussion to expand understanding of reasons and motivations behind ideas presented and to avoid making assumptions and overgeneralizations.
10. Enabling group members to make personal and topic-related connections at a deeper level.

### **3.3 Questionnaire survey**

For success in educational curriculum, the three notions are significant; feasibility, replicability and sustainability of the course. Especially, in the CCDL courses, these three notions are more vital because the courses are conducted in different universities. In the CCDL courses, these three notions are achieved by its common platform; that is, methodology and the course textbooks. It is significant to check what to teach and how to teach in the courses, to examine whether the course is effective, and to make some revisions if necessary.

The aim of the questionnaire survey was to check (1) effectiveness of the CCDL courses, and (2) the validity of the textbook used in the CCDL. Through the questionnaire survey, we also examined whether the participants in this course acquired these concepts and skills. Originally, nine concepts and skills, some of which are relevant to intercultural competence proposed by Byram (2008), were dealt with in the CCDL course, but four out of nine concepts are difficult to check by the small size questionnaire, so they were omitted (Table 3). Based on these concepts, the questionnaire items were created. The questionnaire contains fifty seven items, key questions of which, besides the concepts in Table 3, were (1) intercultural understanding, (2) communication skills, (3) willingness to communicate, (4) acceptance of Asian Englishes

(English as Lingua Franca), (5) facilitation skills and (6) The main questions.

Table 3: Skills to be acquired in the CCDL textbook

- Facilitation Skills
- High- and low- context Communication
- Intercultural Translation
- Reaching Agreement
- Research Skills

The questionnaire survey was conducted only to Japanese participants in the CCDL, and we got results from 92 participants.

### 3.4 Results of the questionnaire survey

The results are reported according to the key questions below.

#### <Intercultural misunderstanding>

The results of Q. 46 show that that 40 % participants experienced cross-cultural misunderstanding through the CCDL courses. More than 70% participants reported that they came to know kinds of misunderstanding caused by cultural differences (in Q.21). As for the question whether they acquire problem solution knowledge about cross cultural misunderstandings, about 60% participants reported to get some skills/strategies to avoid misunderstanding and to solve problems caused from cross-cultural misunderstanding (in Q.7). They successfully learned skills and strategies to avoid misunderstanding caused from cross-cultural settings.

#### <Communication Skills>

As for how many participants came to acquire this skill (Q. 4 & 5), 80% participants reported that they acquired this skill to change their perspectives in communicating with participants from other countries.

Another strategy to avoid cross-cultural misunderstanding in the textbook is “critical thinking”. 70% participants replied positively to the questionnaire item on acquiring the strategy of “critical thinking” (Q. 19 & 29).

From these results, we can say the CCDL textbooks are effective in providing the participants with intercultural communication knowledge and skills.

<Willingness to communicate>

Q. 33 and 34 examined whether the participants tried to join the CCDL LiveOn session willingly. 80% of them answered they tried to do so. Hence, participants in the CCDL can get the attitude to try to continue communicating in cross-cultural settings.

< Acceptance of Asian Englishes (English as Lingua Franca)>

In the CCDL course, the participants were made to recognize the notion of ELF and use ELF implicitly. In Q.26, the participants were asked how they think about English as a lingua franca. The result was that only 50 % participants answered that they recognized the notion. Half of them still think their model of English should be that of native speaker's English, such as British English and American English.

<Confidence in communicating in English>

The questionnaire items, Q31, 32 and 41, examined the participants confidence in communicating in English. 80% participants reported that they got confidence in communicating in English. The results confirms that the CCDL course can give the participants confidence in communication in English.

<High-/Low-context culture>

The communicating styles are required to change according to the people we are talking with in cross cultural settings. Knowing notion of high/low contexts culture is useful for the participants in the CCDL course. Q 42 examined the consciousness about cultural differences. The results showed that 80% students pay attention to cultural differences and tried to change communication styles.

<Reaching agreement>

In Q. 44, we checked that the participants could acquire these discussion management skills through the course. 80% participants reported they tried to cooperate with each other to reach agreeable conclusion in CCDL exchanges.

### <Facilitation skills>

Q. 49, 50 and 51 examined whether the participants came to be good facilitators. The results showed that 50 % participants think they can get better facilitation skills and more than 70 % participants paid attention to a role of facilitator, and tried to be a good facilitator.

### <Research skills>

The results of Q30 showed the participants got familiar with research skill in the CCDL course.

## 3.5 Summary of the questionnaire survey

From the results of the questionnaire survey, it is found that almost all of the objectives and skills dealt with in the course and textbooks can be achieved by the participants. Besides, the textbooks work well to support the CCDL course. However, we found that some part should be changed (i.e., Acceptance of Asian Englishes).

## 3.6 Future Plan

To revise the CCDL courses more effective way, PDCA cycle is useful. PDCA cycle, each alphabet of which represents “Plan”, “Do”, “Check” and “Act”, is an iterative four-step management method used in business for the control and continuous improvement of processes and products to make business projects advance (Figure 4).



Figure 4. PDCA Cycle in the CCDL Courses

The questionnaire survey reported above is the “Check” stage, namely the phase to check what to teach and how to teach in the CCDL course. Based on the results, we will proceed to the next “Act” phase: we will have to adjust the contents in the textbooks and teaching method to make

the CCDL more pedagogically effective.

#### **4. CCDL Program Assessment (Motivation Surveys)**

##### **4.1 Introduction**

This section provides a brief overview of our longitudinal study that aimed to evaluate the effectiveness of CCDL program in terms of the students' motivation towards CCDL computer-mediated communication (CMC) activities. As we reviewed so far, one of the main aims of CCDL program is to enable the participating Asian students to be successful bilinguals, who, as one of ELF learners, achieve the English proficiency essential to communicate with various people with different mother tongues. In order to embody this aim, CCDL has utilized information communication technology (ICT) and provided authentic communicative situations for the students in the form of CMC (Nakano, Owada & Yoshida, 2008). Thus, with the aid of the currently challenging teaching method, CCDL has provided one of the most appropriate and effective learning contexts for ELF practice. With the above point in mind, our longitudinal study is intended to investigate how the students think of the value of CCDL program, specifically focusing on their motivation towards the CMC activities, and whereby evaluate the effectiveness of CCDL program. By means of questionnaire-based survey guided by Self-Determination Theory (SDT; Deci & Ryan, 1985), we discussed not only the above issues, but also ideal learning environment for the students.

##### **4.2 CCDL and Students' Motivation**

Nakano (2006) emphasized the importance of students' motivation towards CCDL CMC activities. She argued that lack of motivation towards the activities hinders students' development in the program, and often induces their failure to be a successful ELF learner. Nakano also pointed out that, as one of the potential problems, the difference of class types, elective and compulsory, could cause the motivational differences among the students. Furthermore, referring to Self-Determination Theory (SDT; Deci & Ryan, 1985), she made an assumption that students' motivation will be expected to be more satisfactory if the class is elective, whereas the students' motivation will be less if the class is compulsory. As a first step to evaluate the value of CCDL, therefore, we examined this assumption by means of questionnaire based surveys guided by SDT.

##### **4.3 Purposes and Hypotheses**

The primary purpose of this study is to examine whether the difference of class type, elective vs.

compulsory would cause motivational differences among the participating students as argued in Nakano (2006). In so doing, we adopted Nakano's assumption as our research hypotheses; that is, if a student participate in elective class, his/her motivation will be desirable, whereas, if the student in compulsory class, her/his motivation will be less as compared with those in elective class. To address this issue, we employed theoretical framework of SDT (Deci & Ryan, 1985), and discussed the relevant motivational issues in terms of the concepts of three types of motivation: intrinsic motivation, extrinsic motivation and amotivation. Figure 5 shows the self-determination continuum (e.g., Deci & Ryan, 2000), that summarizes the theoretical relationships among the above three types of motivation.

Behavior	Non self-determined					Self-determined
Type of Motivation	<b>Amotivation</b>	<b>Extrinsic Motivation</b>				<b>Intrinsic Motivation</b>
Type of Regulation	Non-Regulation	External Regulation	Introjected Regulation	Identified Regulation	Integrated Regulation	Intrinsic Regulation
Locus of Causality	impersonal	External	Somewhat External	Somewhat Internal	Internal	Internal

Figure 5: The self-determination continuum (as cited in Deci & Ryan, 2000, p.237)

## 4.4 Method

### 4.4.1 Participants

The participants in this study were Japanese university students who were all enrolled in CCDL English classes. Table 5 summarized the details of the participants in the surveys 2008 (Nakano & Yoshida, 2008), 2010 (Yoshida & Nakano, 2010) and 2011 (Yoshida & Nakano, 2012).

Table 5: The participants in the surveys in 2008, 2010 and 2011

	2008		2010		2011	
	(N = 204)		(N = 176)		(N = 365)	
	elective	compulsory	elective	compulsory	elective	compulsory
<i>n</i>	67	137	94	82	68	297

Note: The survey in 2010 included Asian participants from Korea and Taiwan.

### 4.4.2 Questionnaire

The questionnaire contained 24 items based on those in the Language Learning Orientation Scale

(LLOS; Noels, Pelletier, Clement & Vallerand, 2000; Park, 2006) and Academic Motivation Scale (AMS; Vallerand, Pelletier, Blais, Briere, Senecal, & Vallieres, 1992). In line with the LLOS and AMS, the 24 items were designed to be one of the reasons for doing the target activity (i.e., CCDL CMC activities, in this case) and can be categorized into the following 7 subscales: Intrinsic Motivation for Knowledge (IMK: 3 items), Intrinsic Motivation for Accomplishment (IMA: 3 items), Intrinsic Motivation for Stimulation (IMS: 3 items), Extrinsic Motivation-Identified Regulation (EMID: 4 items), Extrinsic Motivation-Introjected Regulation (EMINTRO: 4 items), Extrinsic Motivation-External Regulation (EMEX: 4 items), and Amotivation (AMOT: 3 items). Using 5-point Likert scale, we asked the students to indicate to what extent each of the reasons corresponded to their reasons for participating in the CMC activities.

## **4.5 Results and Discussion**

### **4.5.1 Results of EFA**

As a result of EFA, we found 6-factor solution was suitable in all the three surveys in 2008, 2010 and 2011. It is important to note that each of the resulting factor structures was found to be almost congruent with each other; 2 out of the 6 Factors were regarded as AMOT (with some EMEX item[s]) and EMINTRO & EMEX Describing External Pressures (e.g., effect of teacher); 4 out of the 6 were interpreted as EMID, IMA (with some items in relation to students' future direction), IMS (sometimes combined with EMID) and IMK. The former 2 Factors were said to be *controlled types of motivation*, whereas the latter 4 Factors were *autonomous types*.

### **4.5.2 Results of comparison between *elective* and *compulsory***

Figures 2-4 show the results of motivational comparisons between elective classes and compulsory classes in the surveys in 2008, 2010 and 2011 respectively. All the 6 Factors are ordered along with the self-determination continuum so that the degree of self-determination (i.e., autonomy) as well as motivation is expected to be enhanced from the left to the right side.

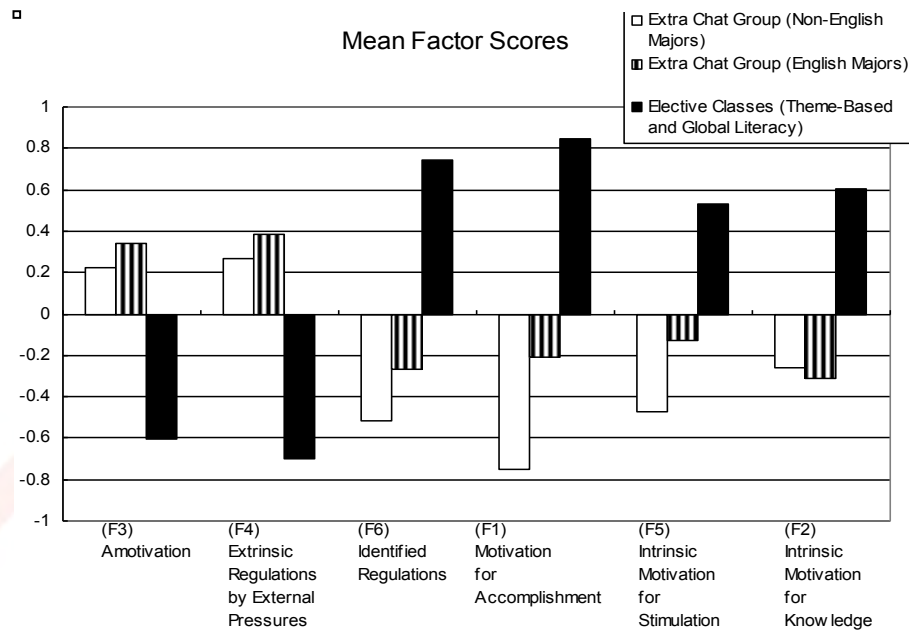


Figure 6: Results of the survey in 2008

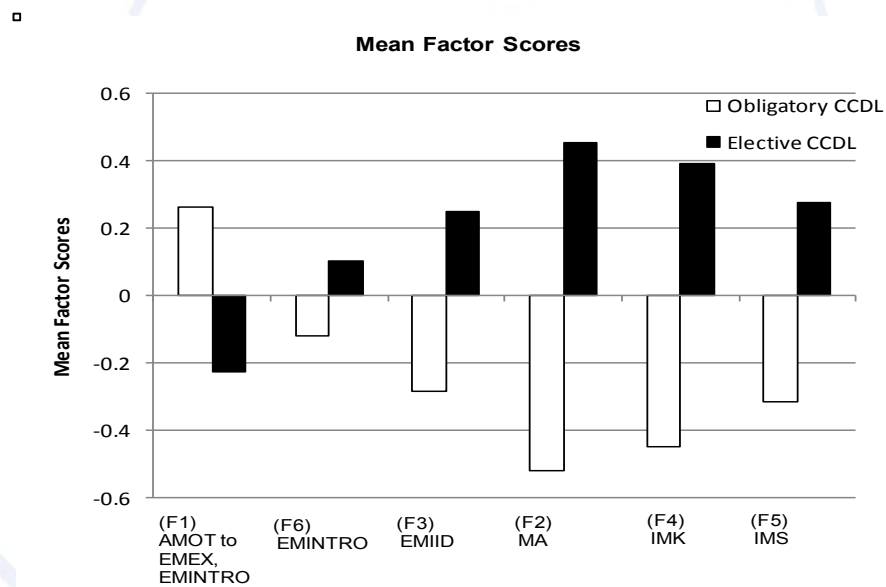
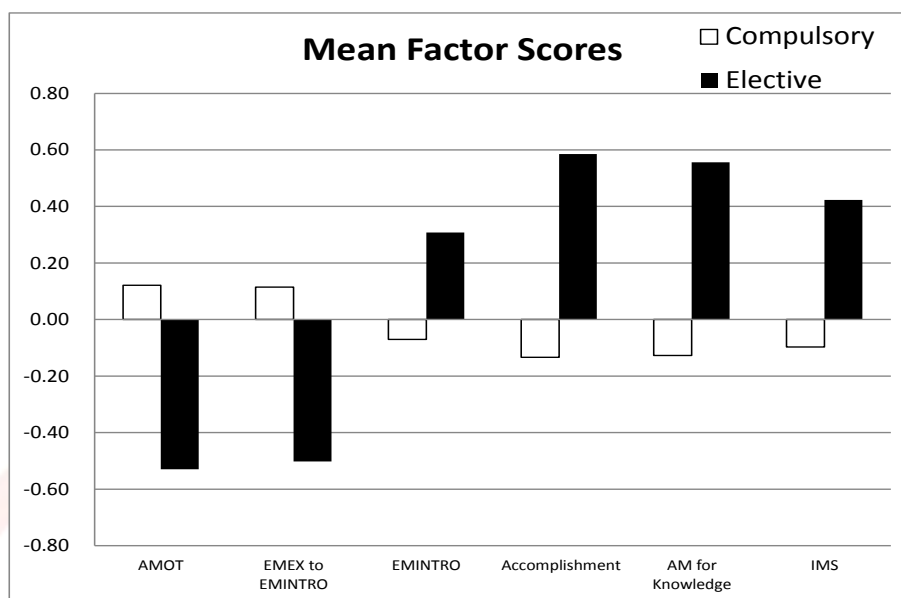


Figure 7: Results of the survey in 2010



*Figure 8: Results of the survey in 2011*

The results in Figures 6-8 show the similar scoring patterns in the three surveys; the students in the elective classes scored highly on the autonomous types of motivation, whereas they scored less than grand mean (i.e., 0 in each of comparisons) on the controlled types of motivation; on the other hand, those who in the compulsory scored less than grand mean on the autonomous motivation, whereas they scored highly on the controlled types of motivation.

#### 4.6 Summary

The results in the surveys supported Nakano's (2006) assumption, indicating that the students in the elective classes had motivational predisposition toward autonomous learners, whereas those in the compulsory classes had the predisposition toward externally regulated learners. The results also implied that the students in the compulsory courses were demotivated by such external pressures (or forces) from their instructors, and that some were to be amotivated in the long run (Nakano & Yoshida, 2008).

In order to prevent the students from being demotivated, therefore, it was necessary to look for some effective motivating strategies. To address this issue, Yoshida and Nakano (2011) investigated the relationship between learning environment and students' motivation, drawing on the concepts of autonomy and competence discussed in SDT. The findings in the survey indicated that the hypothesized causal relationships between autonomy supportive environment, where students could perceive optimal level of autonomy and competence, and the student's

motivational enhancement could hold true within the context of CCDL English classes.

These findings implied the possibility that creating the autonomy supportive climate could be one of the effective motivating strategies to encourage the students who were found to be externally motivated, to be more autonomous learners. As a first step to enhance the students' motivation, therefore, we believe that it will be necessary to conduct needs analysis among the students so as to make the learning environment as autonomy supportive as possible. It will be also important to reconsider the tasks assigned in the classes and make them optimally challenging to the students so as to promote their sense of accomplishment and competence.

## **5. Designing automated scoring system for L2 speech**

### **5.1 Backgrounds**

As mentioned in the previous section, there are four purposes in CCDL. To achieve these goals, speaking ability and skills are one of the foundations, and it is an important issue to grasp the change of students speaking ability through CCDL. However, a speaking test has not been adopted for a couple of reasons. Performance assessment requires expert rating, which is a major limitation for the large scale implementation. The use of rater will introduce another problem to the assessment: Inconsistency of assessment and investment of time. The oral performance is assessed manually by trained raters based on the respective criteria of proficiency standards. Before conducting speaking tests, test designers discuss and determine a set of evaluation criteria and the procedure of rating, and raters receive some training to arrive at good inter-rater agreement. After the test, the raters sometimes watch the video or listen to the recorded speech of the examinees', and the evaluation scores given by the raters are analyzed based on some statistical model. It is often hoped that as a solution, automated scoring of second language (L2) speech be built to predict the evaluations by human raters.

In the assessment of L2 speaking skills in general, examinees are asked to introduce themselves, to describe some pictures, or to discuss general issues, and raters evaluate the examinees' speech. The speech elicitation tasks can be selected based on the purpose and the practicality of the assessment. However, the selection of tasks is limited in automated L2 speech scoring because of speech recognition technology. Figure 9 shows the degree of freedom and predictability of speaking.

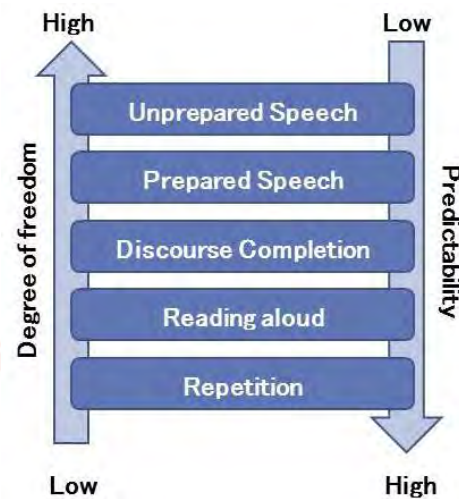


Figure 9: The degree of freedom and predictability of speaking

The degree of freedom of speaking goes up from the bottom to the top, while the difficulty in predicting the utterances increases from the top to the bottom. In the repetition task, for example, examinees just repeat a sentence or a word as they hear. The words to be recognized are already presented. In unprepared speech, on the other hand, examinees will talk about a certain theme or topic. It is difficult, in this case, to predict the words. Practically speaking, perfect recognition is totally impossible in unprepared speech. We have to choose a task to use according to the limitation of speech recognition technology in order to construct an automated speech scoring system.

## 5.2 Procedure

### 5.2.1 Elicitation task

In the present study, Discourse Completion Test (DCT) was chosen as elicitation task. In DCT, examinees are given a certain situation and are supposed to say something appropriate to the situation. Examinees' utterances are not fixed, but the words they use are limited. Speech recognition is more difficult than in read-aloud speech for speech recognition, but easier than in unprepared speech

For the present study, an item writing committee was comprised and composed the DCTs according to the textbooks used in Tutorial English provided by Waseda University. Tutorial English is highly structured course and designed referring to the levels of Common European Frameworks of Reference (CEFR: Council of Europe, 2001). The textbook is divided into seventeen units according to topics. Our DCT requires examinees to use the expressions in each

unit. We composed eight to ten DCTs for each unit (132 items in total).

### 5.2.2 Data

A website was created for the data collection. The speakers access the website, enter their names, are given the instruction, and then start their recording. In the data collection in 2011, students at Waseda University provide their speech for DCTs at A2 level of CEFR. About a hundred speakers furnished their speech data. A hidden Markov model based speech recognizer was constructed by using Hidden Markov Model Toolkit (HTK: Young, Evermann, Gales, Hain, Kershaw, Liu, Moore, Odell, Ollason, Povey, Valtchev, and Woodland, 2006). The native speakers' speeches from TIMIT Acoustic-Phonetic Continuous Speech Corpus (Garofolo, Lamel, Fisher, Fiscus, Pallett, Dahlgren, and Zue, 1993) were used for training the acoustic model in addition to the L2 speeches from English Speech Database Read by Japanese Students (Minematsu, Tomiyama, Yoshimoto, Shimizu, Nakagawa, Dantsuji, and Makino, 2002). Using HTK, bigram language models were constructed for each task.

### 5.3 Results and Discussion

The result of word recognition of the first item in Unit 3 is shown in Figure 10. The recognition at phone level is not good, but this is the perfect word recognition. The speaker actually said "I always walk around the park".

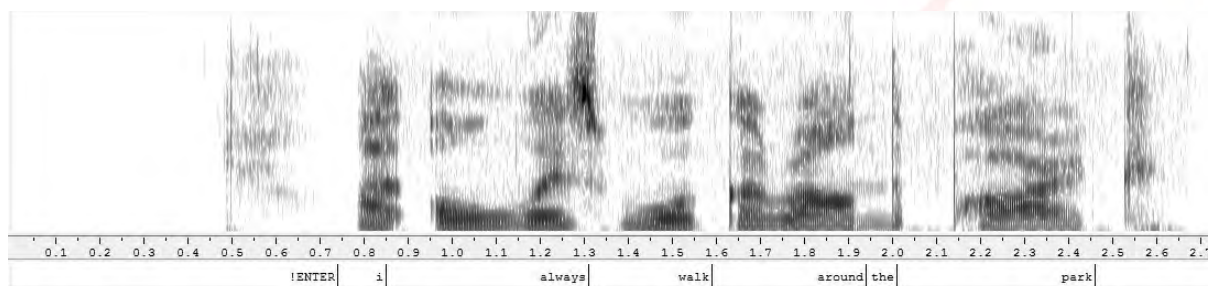


Figure 10: The Result of Word Recognition of the First Item in Unit 3

The result of word recognition of the first item in Unit 17 is shown in Figure 11. Again, the word recognition is perfect, but it's not so good at the phone level. The utterance, probably started with the aspiration of the k sound of can, but the recognizer does not do well with the plosives.

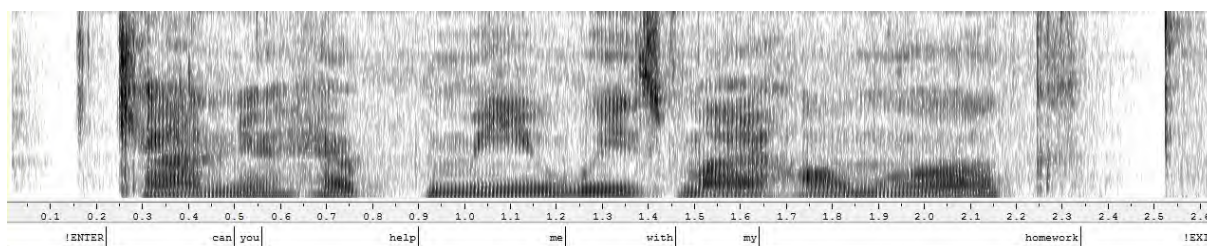


Figure 11: The Result of Word Recognition of the First Item in Unit 17

Table 1 shows a part of the results in the word recognition. It shows the results of the word recognition of the first 6 items in Unit 3. Around 80% of correct word recognition rates we can find in every item.

Table 6: The results in the word recognition of the first 6 items in Unit 3

Item	N	H	D	S	I	C	A
3-1	688	602	44	42	20	.87	.84
3-2	656	656	28	40	43	.89	.83
3-3	740	603	45	92	36	.81	.76
3-4	604	468	61	75	48	.77	.70
3-5	600	514	46	40	37	.86	.80
3-6	511	426	39	46	14	.83	.81

Notes. N: the total number of labels H: the number of correct labels D: the number of deletions S: the number of substitutions I: the number of insertions C: H/N A: (H-I)/N

Accurate recognition at phone level is difficult, but word accuracy rate of around 80% is acceptable in DCT. Based on the DCTs with 80%, the correct word recognition rate, we will be able to assess grammatical accuracy, appropriateness, and politeness of utterances. If we use the two tasks, reading aloud and DCT, we can assess several aspects of learners' speaking ability.

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*Stylistic Analysis of Barack H. Obama's Inaugural Address 2009*

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Abstracts

This study takes up the 2009 Inaugural Speech by President Barack Obama (or Obama Speech) as the target of stylistic analysis. The main concern of the study is to find out the content of his speech as well as how it was carried out. In order to identify the WHAT and HOW questions, I employ a stylistic analysis, in which both content and linguistic analyses are combined. More specifically, research questions included: (1) What promises and requests are made and how they are made?, (2) How does intertextuality (quotations from other sources) strengthen Obama speech?, (3) What are the lexical features of Obama speech? (4) Are there structural resemblances between Obama speech and other presidents' speeches?, (5) What are the referents of politically loaded pronouns (we, they, you) in the speech? Questions (1)-(2) are the target of content analysis, and questions (3)-(5) were the target of linguistic analysis. Among other things, the study reveals the following: (1) Obama's promises were made in the form of "we will do such and such to do" in the same paragraph; (2) Obama quoted passages from the Bible, Musical *Swing Time*, and Thomas Pain's *the Crisis* in the right places; (3) Obama used structural patterns derived from FDR speech. Most interestingly, Obama strategically used ambiguous pronouns like "they" and "we" in order to let the concept of "E pluribus unum" govern the flow of his whole speech.

**Key Words**

1. Obama Inaugural Address 2. stylistic analysis 3. intertextuality 4. structural resemblance

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## 1. Introduction and Background of the Study

This study takes up the Inaugural Address of Barack Hussein Obama II, the 44th President of the United States (Jan.20th 2009) as the target of stylistic analysis, in order to identify WHAT is talked about and HOW it is delivered.

US Presidential Inaugural Addresses have been researched in various fields. Leadership has been the main issue in Political Studies and Business studies, whereas American Studies have observed historic moves chronically (Erickson 1997). In addition, Inaugural addresses have been researched in the field of rhetoric. However, the research focus in that direction has been again mostly on how presidents' leadership and charisma were shown (Matsuo 2002). Due to their high recognition of leadership and charisma, the following are among the most researched presidents' speeches: inaugural addresses of President Franklin Delano Roosevelt a.k.a. FDR and President John Fitzgerald Kennedy a.k.a. JFK, and the Gettysburg Address of President Abraham Lincoln (Houk 2002).

Matsuo (2002) points out the 'paradoxical presence' of U.S. presidents. On the one hand, they are 'common man' (unlike European kings); on the other, they are the commanders-in-chief and they are the achievers of the American dream, which makes them special. Matsuo also points out that the 'target' of presidential inaugural speech is inevitably 'US citizens'; thereby every inaugural speech has two missions: 1) to ask requests; 2) to give promises on his administration.

This study imbibes Matsuo's suggestions while utilizing linguistic stylistic analysis. Though I draw on *Investigating English Style* (Crystal and Davy. 1969) as stylistics classic, 'stylistic analysis' in this paper means the combination of lexical (structural) analysis and content analysis.

All texts can be resolved into lexicons. Expressions are weaved by construction/syntax, and messages are delivered. Thus, all texts share two dimensions: WHAT and HOW, meaning WHAT is talked about and HOW it is delivered. WHAT and HOW cannot be divided, but rather co-related; therefore, I will focus on HOW —language use— to

clarify WHAT.

## 2. Objectives of the Study

Obama has been emphasizing the concept of 'One America'; THE United States of America, during his first presidential election campaign 2008. Or, even before.

In 2004, at the Democratic National Convention (DNC), he directly quoted the U.S. fundamental philosophy: 'E pluribus unum (One out of many)'. This Latin expression is incused on U.S. coins as well.

E pluribus unum was the solution, the creation of a brand-new national identity. US ideal is not functioning anymore; Schlesinger (1992) raised an alarm, pointing out:

"The Europeans who had torn up their roots to brave the wild Atlantic wanted to forget a horrid past and to embrace a hopeful future. Their goals were escape, deliverance, assimilation." And he went on, "The escape from origins yields to the search for roots. It belittles *unum* and glorifies *pluribus*."

With this social background in mind, Obama left the following words at DNC: "There is not a white America, there is not a black America, there is not a Latino America, there is not an Asian America; There is the United States of America."

This was the speech glorifying the spirit of E pluribus unum, with an emphasis on *unum* = ONE.

Did Obama carry on this message / spirit in his inaugural address as well? If so, HOW did he deliver it?

## 3. Research Questions

This study aims to identify and analyze the stylistic characteristics of Obama speech by

addressing the following research questions:

- (1) What promises and requests are made and how they are made?
- (2) How does intertextuality (quotations from other sources) strengthen the Obama speech?
- (3) What are the lexical features of the Obama speech?
- (4) Are there structural resemblances between the Obama speech and other presidents' speeches?
- (5) What are the referents of politically loaded pronouns (i.e. we, they, you) in the speech?

#### **4. Research Methodology**

The target of this study is Obama's inaugural speech full text (2400 words). For comparison, I refer to 60-year-length of all presidential inaugural speeches, from JFK (1962) to Obama including reelected president's speeches: Nixon, Reagan, Clinton, and G.W. Bush. Though Ford's speech has not been researched much due to his irregular inauguration—he is the only president who was not elected by the citizens, this study includes his speech as well.

First, I employ content analysis, which enable us to clarify the flow or the picture of the speech. Secondly, I focus on intertextuality as reference to U.S. history ——'speaking to ages'—— is one of the requirements of U.S. inaugural addresses. They are usually unsourced. Third, from token meaning raw data, I analyze type and frequency counts: so-called, quantitative analysis. Forth, I employ structural analysis where I analyze both intra / inter syntax. Related with intertextuality, I focus on structural relevance between other presidents' speeches. Lastly, I observe distinct usages of pronouns, and then clarify ways Obama adopts to address people.

#### **5. Analysis**

##### **5-1: Promises and Requests**

In the Obama speech, promises are made in a certain fixed pattern. As underlined and numbered, he uses the same construction pattern, ‘will do such and such to do something’ repeatedly and presents five promises in a row. By using the modal auxiliary ‘will’, he expresses the determination of Obama ministration, while describing the purposes of those actions with the infinitive ‘to do’.

- (1) We will act not only to create new jobs, but to lay a new foundation for growth.
- (2) We will build the roads and bridges, the electric grids and digital lines that feed our commerce and bind us together.
- (3) We will restore science to its rightful place, and wield technology's wonders to raise health care's quality and lower its cost.
- (4) We will harness the sun and the winds and the soil to fuel our cars and run our factories.
- (5) And we will transform our schools and colleges and universities to meet the demands of a new age.

Obama’s requests are made as follows:

“What is required of us now is a new era of responsibility - a recognition, on the part of every American, that we have duties to ourselves, our nation, and the world, duties that we do not grudgingly accept but rather seize gladly, firm in the knowledge that there is nothing so satisfying to the spirit, so defining of our character, than giving our all to a difficult task. This is the price and the promise of citizenship. This is the source of our confidence - the knowledge that God calls on us to shape an uncertain destiny.”

The core message is to ask the citizens to be aware of their duties and responsibilities and get over the difficult time.

## **5-2: Intertextuality**

Quotations from U.S. history—‘speaking to ages’ —is one of the requirements of U.S. presidential inaugural addresses. Let us observe what and how Obama quotes in his own speech.

### 5-2-1: Quotations from Scripture

Obama: “We remain a young nation, but in the words of Scripture, the time has come to set aside childish things.”

This is an indirect quote from Corinthians, The Testament.

“When I was a child, I talked like a child, I reasoned like a child. When I became a man, I put childish ways behind me. Now I know in part; then I shall know fully, even as I am fully known.”

(c.f. : New International Version.13.11)

Obama’s ‘childish things’ refers to “the petty grievances and false promises, the recriminations and worn out dogmas, that for far too long have strangled our politics” in his inaugural address.

### 5-2-2: Quotations from Swing Time

One of the sound bites of Obama speech is “We must pick ourselves up and dust ourselves off and begin again the task of remaking America”. But why ‘dust ourselves off’?

There was a musical named *Swing Time* (lyrics by Dorothy Fields, music by Jerome Kern) in 1936. It was played to lift up the U.S. citizens’ spirit during the Great Depression era.

*Swing Time:*

Nothing’s impossible, I have found.

For when my chin is on the ground,

I pick myself up, dust myself off,

Start all over again.

Don’t lose your confidence if you slip.

Be grateful for a pleasant trip,  
And pick yourself up; dust yourself off;  
Start all over again.

Through its lyrics, especially from the first phrase “For when my chin is on the ground”, we can tell now that the original character’s situation and the reason of Obama’s expression.

### **5-2-3: Quotations from Thomas Pain**

Obama directly quoted from Thomas Pain’s booklet, *The Crisis* (distributed on Dec.23, 1776). Underlined in the extract below are Pain’s words.

Obama:

“At a moment when the outcome of our revolution was most in doubt, the father of our nation ordered these words be read to the people:

"Let it be told to the future world...that in the depth of winter, when nothing but hope and virtue could survive...that the city and the country, alarmed at one common danger, came forth to meet [it]."

Pain’s work is known as the first president George Washington’s favorite. Obama’s “the father of our nation” refers to President Washington, who read these words to the soldiers in Valley Forge to lift up their spirit during the Independence War.

From those three quotes, we can see how Obama follows predecessors’ (former presidents’) inaugural style, but also stands out or attains his originality by letting the nuance of ‘lifting up spirit’ link two historically significant moments.

### **5-3:Lexial features**

In this section, I will explain Obama’s main characteristic terms or lexical items. Below are the top 12 most frequently used terms in Obama inaugural speech.

Nation 15  
America 14  
people 8  
generation 8  
now 7  
today 7  
time 6  
spirit 5  
crisis 4  
peace 4  
Americans 3  
journey 3

On the basis of the frequency counts, it turned out that 880 different words were used in the speech with 2400 token words. Out of these 880 words, basic words (verbs) such as 'carry', 'remain' and 'meet' were repeatedly used to make his speech lucid. 'America' and 'Americans' are among the 'buzz words' frequently used in U.S. presidential inaugural speeches. 'Buzz words' mean "the terms which arouse U.S. citizens' patriotism" (Matsuo 2002). Other examples of such expressions are 'peace', 'hero', 'unity', 'believe' and so on.

Obama uses a larger number of buzz words usually in his speeches (notably, the 2008 election campaign slogan was 'change we can believe in'). But in this inaugural address, he used few buzz words. Instead, he managed to arouse patriotic feelings in context and with the strategic usage of pronouns. In the sections 5-5-1 to 5-5-3, let us see how Obama replaced the terms 'American/ Americans'.

#### **5-4:Structual Resemblance**

Here, let us consider whether we can see any structural resemblance between the

Obama speech and FDR's first inaugural address. Franklin Delano Roosevelt made his first presidential oath during the Great Depression era (1933). In the beginning of his inaugural speech, Roosevelt noted "the only thing we have to fear is fear itself" and recited the critical economic crisis those days in parataxis without using discourse markers.

Roosevelt (1933) :

In such a spirit on my part and on yours we face our common difficulties.

- 1) Values have shrunk to fantastic levels;
- 2) taxes have risen;
- 3) our ability to pay has fallen;
- 4) government of all kinds is faced by serious curtailment of income;
- 5) the means of exchange are frozen in the currents of trade;
- 6) the withered leaves of industrial enterprise lie on every side;
- 7) farmers find no markets for their produce;
- 8) the savings of many years in thousands of families are gone.

(numbers added by the author)

This style is also found in the Obama speech.

Obama:

That we are in the midst of crisis is now well understood. Our nation is at war against a far-reaching network of violence and hatred. Our economy is badly weakened, a consequence of greed and irresponsibility on the part of some, but also our collective failure to make hard choices and prepare the nation for a new age.

- 1) Homes have been lost,
- 2) jobs shed,
- 3) businesses shuttered.
- 4) Our health care is too costly,
- 5) our schools fail too many—
- 6) and each day brings further evidence that the ways we use energy strengthen our adversaries and threaten our planet.

(numbers added by the author)

This commonality can be described as 'structural resemblance'. This structural resemblance contributes to a heightened persuasion of the Obama speech since the Obama administration faced the severest economic crisis since the Great Depression in the days of the FDR administration.

### **5-5:Pronoun Usage**

The way pronouns are used in a given text is well worth examining for the sake of stylistic analysis; namely, who or what is referred to by which pronouns in what kind of context. According to Brown and Gilman (1960), pronouns suggest power and solidarity. Pronouns in this study include 'I' 'you' 'we' and 'they'. You and I share a correspondence relationship dialogically while they and we share another type of correspondence relationship. In addition, pronouns reflect the speaker's (in this study, president's) stance. 'I' means the speaker him/herself, yet which does not count much in this study, as the speaker in U.S. inaugural addresses is evidently, the president himself.

Postulating Obama's pronoun usage is related to "E pluribus unum" spirit with the emphasis on 'unum (One)'. This is one of the points to be verified in the following section.

#### **5-5-1: THEY**

'They' is classified mainly into two groups: suggesting human e.g. men and people in general or NOT human e.g. trees and organizations. It makes distinct difference between other pronouns 'I' 'you' 'we' as the rest can only suggest human. Furthermore, 'they' has a function to 'group up individuals and bind as a whole' (Ito 2010) like 'we', still we need to observe its referents by context.

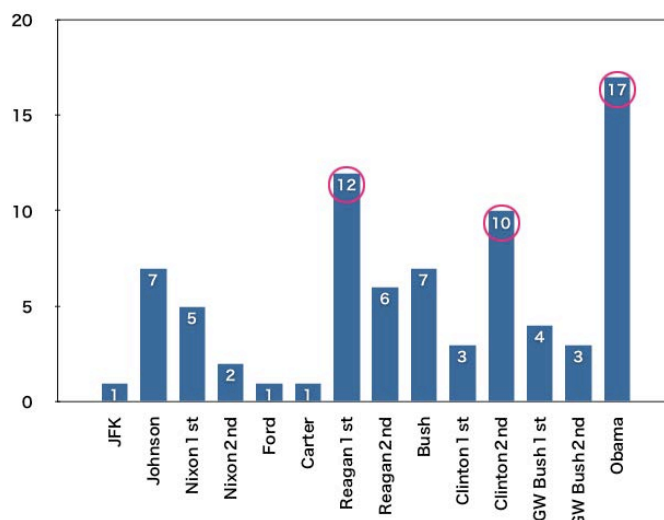


Fig.1 Frequency of 'they' in inaugural addresses from JFK to Obama

Obama used 'they' 17 times in his inaugural speech. Compared with all the other presidents from JFK, Obama's 'they' use was by far the top. Second most they-user is Reagan the 1st (12 times) and Clinton the 2nd follows (10 times). However, frequency won't tell enough, so qualitative analysis must be pursued. To focus on the connection of pronoun usage and "E pluribus unum" spirit, consider the following.

Obama:

For us, they packed up their few worldly possessions and traveled across oceans in search of a new life.

For us, they toiled in sweatshops and settled the West; endured the lash of the whip and plowed the hard earth.

For us, they fought and died, in places like Concord and Gettysburg; Normandy and Khe Sahn.

As underlined above, there are three times of appearance of 'they'. The first use of 'they' reminds us of Puritans (Whites) who immigrated to America by the Mayflower. However, the second 'they' evokes slaves (Blacks) from Africa. The third 'they' superficially hints at all Americans, yet if we take a closer look, there can be a deeper interpretation. Concord suggests the War of Independence, Normandy suggests World War II and Khe Sahn suggests the Vietnam War. Thus 'they' refers to Americans. But

Gettysburg is the Civil War, meaning this was the battle among Americans. Gettysburg is the symbolic place for President Lincoln's Emancipation Proclamation (1862) and the Gettysburg Address (1863), which lead us to the idea that 'they' implicates more of Blacks. Historical facts show there were more black war victims at that time.

In this paragraph, Obama repeatedly used the expression, "For us, they...". The next section is dedicated to an analysis of the use of this 'us'.

### 5-5-2: WE & I

'I' means the president himself in the inaugural address. Impression changes by frequency, placing, and usage. Obama was the second least 'I' user (3 times) in 60 years next to Clinton the 2nd (2 times), whereas Obama was the third most 'we' user (62 times).

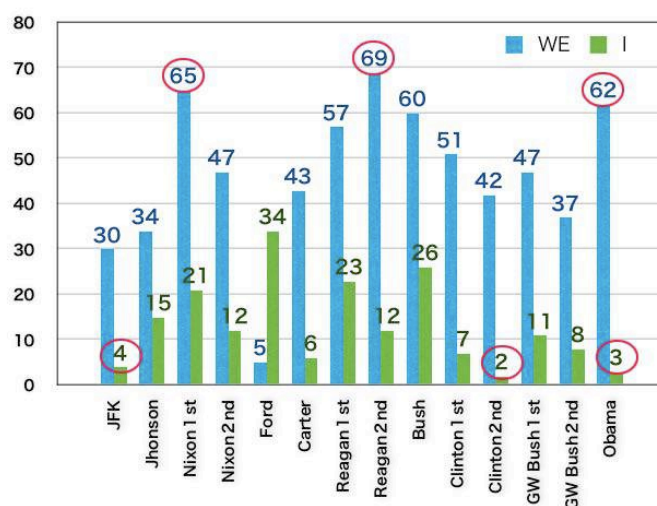


Fig.2 Frequency of 'we' and 'I' in inaugural addresses from JFK to Obama

'We' has a function to 'arouse sense of unity by grouping up individuals and bind as a whole' (Ito 2010). When observing the pronoun 'we', there are two essential points: First, is 'we' inclusive or exclusive? Second, is there 'a basis of sense sharing' or not (Tanaka and Fukaya 1998)?

Before analyzing the Obama speech with these two points, considering everyday utterance examples would be meaningful.

(1) “Sorry we are already closed”

Situation: A CVS manager says to customers after he closed the store with his colleagues.

This ‘we’ usage is exclusive, as it is not including customers (=‘you’).

(2) “I trust you just as much as you trust me. We are one and the same.”

This ‘we’ includes the listener therefore it is an inclusive ‘we’ usage.

(3) “We are Americans”

Situation: A speaker, born and raised in U.S., utters to someone that has the same background as the speaker.

This is inclusive ‘we’. Also ‘a basis of sense sharing’ is assured. For it is a fact that they share the same background and U.S. citizenship.

(4) “As we both know, men can't take that kind of things.”

Situation: A girl (a listener) had a fight with her boyfriend and got heart-broken. Her female friend speaker talked to the listener above to comfort her.

This ‘we’ includes the listener and excludes men in general. However, here, something interesting happens. Since ‘men can't take that kind of things’ is not at all a universal fact (this is a statement which relies on the speaker's subjective opinion), whether ‘a basis of sense-sharing’ is secured in this usage of ‘we’ seems to be up in the air. There is not yet that sort of sense-sharing established, but rather, the speaker herself is now attempting to make a new basis of sense-sharing. So if the listener agrees to the idea ‘men can't take that kind of things’, a feeling of sense-sharing occurs such that ‘we’ can function as the speaker's strategic intention. However, if the listener rejects the speaker's idea, feeling e.g. “You've got some problem. Not every man is like that”, the speaker's intention fails and there won't be ‘a basis of sense sharing’.

So why does this phenomenon happen? This is because ‘we’ does NOT exist in the first place. The component of ‘we’ is ‘you’ & ‘I’. Hence, even the example (1) excluding

customers has 'a basis of sense sharing' of 'we'; in other words, CVS clerks themselves have the premise as a collective or community within a store. This is the rationale for setting the function of 'we' as to 'arouse sense of unity by grouping up individuals and bind as a whole.'

With the analysis above in mind, let us go on to the analysis of Obama's usage of 'we'.

Obama:

We are shaped by every language and culture, drawn from every end of this Earth; and because we have tasted the bitter swill of civil war and segregation, and emerged from that dark chapter stronger and more united, we cannot help but believe that the old hatreds shall someday pass; that the lines of tribe shall soon dissolve; that as the world grows smaller, our common humanity shall reveal itself; and that America must play its role in ushering in a new era of peace.

First 'we' evidently refers to Americans. However, the question is the second 'we'. People suffered from Segregation are Blacks, not Whites that this 'we' implicates Blacks. Therefore, this is superficially an exclusive 'we' usage (against White people). Yet the third 'we' suggests 'we the Americans' or 'one people', meaning an inclusive 'we'. Was the second 'we' originally intended to be an exclusive usage and interpretation, addressing only from Blacks' viewpoints? My answer is no.

Compared to all the inaugural addresses from JFK, Obama is the first president that used both 'they' and 'we' to mention racial issues. Former white presidents avoided the use of 'we' for the topics of segregation and slavery—they quoted or hinted at Lincoln and Martin Luther King Jr. instead, whereas half-Black Obama had the right to use 'we'. Yet, Obama has been appealing himself as 'American' (not Black) since his first election campaign and had the ideal of 'One America'. This usage of 'they' and 'we' was his way of meeting high expectations from U.S. citizens and the world on his epoch-making inauguration—to complete a historic turn.

Rather, by fusing exclusive 'we' and inclusive 'we' together and by making the best of the functions of 'we' and 'they', Obama stylistically accomplished to encode the

concept of 'One America', the fundamental philosophy of U.S., 'E pluribus unum' in his first symbolic inaugural address.

## Conclusion

This study was motivated by the question 'WHAT was talked about and HOW it was delivered' in President Barack H. Obama's Inaugural Address 2009. In order to clarify the stylistic characteristics of this speech, I employed a method of stylistic analysis that combined content analysis and linguistic (lexical, structural and pronoun) analysis. With the notions of WHAT and HOW being inseparable, I placed a high priority on HOW; linguistic analysis. The focus of this study was on how the concept of intertextuality and the idea of "E pluribus unum" were represented.

As of intertextuality, I clarified Obama's both direct and indirect quotations from the Bible, a musical *Swing Time*, and Thomas Paine's work. Content analysis made in this study revealed that Obama's promises were made in the form of "we will do such and such to do something". Linguistic analysis showed that Obama speech and that of FDR (the Great Depression era) share a structural resemblance. Pronoun analysis revealed Obama's stylistic realization of "E pluribus unum" spirit by adjusting referents of pronouns.

Analyzing 200-year-long U.S. presidential addresses was beyond the scope of this study. I would like to go for that starting with another stylistic analysis of the up-coming Obama's second term inaugural address.

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## *Intergeneration Educational Mobility in Russia and the USSR*

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Official Conference Proceedings 2012

### Abstracts

The objective of this paper is to estimate the factors of intergeneration educational mobility in Russia and Soviet Union, that is to test the equality in accessing the continuation of education at the next level for children from different social groups (families with various levels of the family capital), estimated for different cohorts. The data source is Russian Longitudinal Monitoring Survey (RLMS-HSE) in 2006-11. There are panel data collected in 1994-2011. The sample is representative for Russia population as a whole. In 2006 there were some questions about respondent parents, that allow us to test if there is the dependence between educational level of respondent and some parameters of his/her parents, including their educational level, Communist Party membership and several other.

We estimated the model of probability to get the education of the given level depending on gender, age, nationality, characteristics of parents and birthplace for Russian people born in 1946-1990. Data about respondents' education are collected in 2006-11, about their parents - in 2006. The method of this model estimation is multinomial regression. The model was estimated for the pooled sample, as well as for three cohorts separately: born in 1946-60, 1961-75, 1976-90. It was found out that the family capital (first of all, the educational level of parents and urbanization level) represent an essential obstacle for educational opportunities of Russian high schools graduates. Regression estimation for the pooled sample demonstrates the significant level of dependence of respondents' education on that of their parents.

The main conclusion is that the inequity in access to professional education was strong for all three cohorts. The following factors have positive impact on the child's chances of having educational level lower than university diploma: parents' human capital is low; respondent was born in a village; father wasn't a member of the Communist Party of the USSR; respondent's gender is male (excluding secondary professional education). The inequity in accessing professional education was strong for cohorts born in 1946-60 as well as in 1976-90. Parents' human capital always had the greatest effect on educational chances compared to all other factors.

The negative impact of parents' low human capital was stronger for younger cohort (born in 1976-90) than for the older one (born in 1946-60). That is why although the absolute accessibility of professional education in modern Russia increased, the relative accessibility of professional education (i.e. their dependence on parents' education) decreased. The intergenerational educational mobility (percentage of children who are more educated than their parents) decreased.

**Keywords:** education, intergenerational mobility, educational chances

JEL classification: F22, I20, J62.

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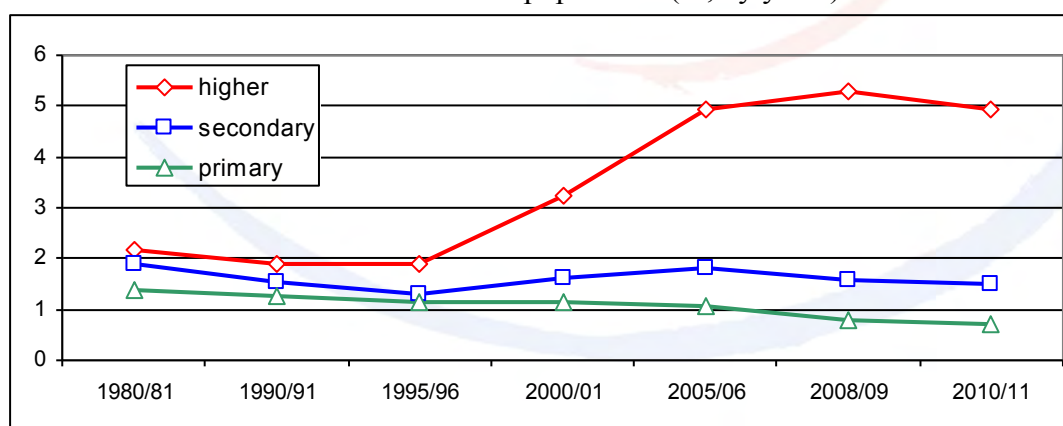
## 1. Introduction

During the last 10 years the problem of the accessibility of education in Russia has attracted an increasing attention of researchers and policymakers. It is believed that high educational level of the population, on the one hand, increases the economic potential of the society, and on the other hand it raises the well-being of people, their social status, helps to overcome inequality. However, education could be a factor of social mobility only if children of poorer and low educated parents have the opportunity to get education and income higher than those of their parents. Some problems in education have become more transparent in post communist Russia thanks to the social structures demolition and the intensive mobility of people in the social hierarchy. Besides, in the middle of the 1990s the dependence of incomes on educational level decreased, some social strata with high level of education but low incomes have appeared, rate of returns on the "old" (soviet) and "new" (post-soviet) education are different.

Besides, during the last 15 years the number of students and their proportion in Russian population has grown, which promotes the absolute accessibility to education. This happened mostly due to the investments into education made by the population but not by the government. Thus, the number of students who pay for their education has grown and in 2003 their percentage reached 50% of those who have entered Universities that year. It seems natural that fees for education raise the educational accessibility for rich and reduce it for poor families. Certainly, besides incomes, many other factors can influence the probability to obtain a particular level of education for a boy or a girl – their success in school, quality of training in school, parents' education, social networks of family, urbanization level, etc.

Since the end of the 1990s Russia has seen the boom in demand for higher education. Between 1995/96 and 2009/10 academic years the number of students in Universities has grown from 2,7 to 7 millions, in professional colleges (secondary professional education) from 1,9 to 2,1 millions, and in vocational schools (primary professional education) has fallen from 1,7 to 1 millions.<sup>1</sup> We should note that the decrease in birth rate in Russia started only after 1991 and it has not affected the cohorts who entered schools of professional education in 1995-2005. Thus, the percentage of students (at all levels of professional education) in Russian population was 4,3% in 1995/96 and 7,1% in 2010/11 (figure 1).

**Figure 1.** Percentage of students (higher, secondary and primary professional education) in the Russian population (% , by years)



Sources: Russian Federal State Statistic Service - RFSSS.

So, we can conclude that the absolute accessibility of professional education has grown in comparison to 1991, first of all thanks to the increase in the overall number of students in

<sup>1</sup> Russian Federal State Statistic Service - RFSSS

<http://www.gks.ru/wps/wcm/connect/rosstat/rosstatsite.eng/figures/education/>

Universities. At the same time, since this growth is mostly explained by increase in the enrollment of students whose tuition is not paid by the government, the accessibility of professional education for poor groups of the population should have decreased. As Konstantinovskiy (1999) has shown, there was a considerable social differentiation in the Soviet Union in professional education accessibility (first of all in the higher education) which has even grown in the middle of the 1990s. Children who have graduated from schools in small towns and villages, and children whose parents were workers or agricultural workers had less opportunity for get higher education. Similar results were found by Cherednichenko (2004) for 1998-2001, and by Roshchina (2005) for 2000-2004.

Despite the variety of recent works on inequality in education in Russia we still have no good reason for saying whether professional education nowadays strengthens social inequality or helps to alleviate it. The other question is whether the intergenerational educational mobility is higher in modern Russia than it was in the former Soviet Union.

**The research objective** of this paper is an estimation of intergenerational educational mobility in Russia for 3 cohorts: born in 1946-60, 1960-75, 1976-90 (or, in other words, an estimation of the equality in access to an extra level of education for children from families with different levels of parents' education).

## 2. Theoretical background

The high educational level of the population is a blessing for a society. First, education is one of the tools of the economic growth due to the increase in scientific and technical potential of people. Second, any increase in the educational level causes income growth which is the factor of increase in a consumer demand and thus it would be an accelerator of the economy. Third, education is one of the few channels of ascending social mobility.

That is why the question of equality in access to education and of equity in education in general is very important. The absence of equal access to education means growing of an economic, social and cultural inequality, closing a way into the top class for people from the bottom strata of the society. To estimate whether there is some unjust inequity in education it is necessary to find factors of this inequality. As a rule, inequality is considered as equitable if it is the consequence of unequal efforts and abilities of people. On the contrary, if the inequality of chances is due to the differences in social status, incomes, gender, race, etc., it is judged by society as unjust.

From the point of view of the economic theory, education is an investment into the human capital (Becker, 1964; Mincer, 1958). People decide to invest because they expect a certain return to this investment in human capital due to the future increase in their productivity and incomes. When an individual is choosing the amount of this investment he/she compares this expected return with direct and opportunity costs (the first should be higher). According to Becker's hypothesis the amounts of investments in the children human capital differ because of the differences in families' resources (money, time, human capital of parents). The income influences investments in education of children positively, while the number of children – negatively. The higher the human capital of parents is, the more knowledge and skills they can pass to their children, the more is the investment of parents into the human capital of children. Thus, the social differentiation in education is influenced by the differences of students' families in their families' capitals.

The theoretical explanation of dependence of children income, education and status from those of their parents were proposed by Becker and Tomes (1979, 1986) using the idea of the allocation of resources within the family. First of all children have to do some investment in human capital facing the borrowing constraints. Second, parents' educational level influences the skills and knowledge of children and their ability to produce incomes. The other source of ideas about social (including educational) mobility are sociological researches of Sorokin (1927) and Goldthorpe (1992).

In the theoretical model of Becker and Tomes (1979, 1986) the intergenerational income mobility is modeled as follows:

$$\ln Y_{i,t} = \beta_0 + \beta_1 \ln Y_{i,t-1} + \beta_2 X_{i,t-1} + \varepsilon_{i,t}$$

where  $t$  is index of the generation and  $i$  is index of the family,  $\beta_0$  is the average income of the children in generation  $t$  and  $Y_{i,t}$  is the children's income (when they are adults),  $Y_{i,t-1}$  is the income of parents (generation  $t-1$ ),  $X_{i,t-1}$  is the vector of control variables, and  $\varepsilon_{i,t}$  is unobserved components. Here  $\beta_1$  measures the relation between the income of individuals and the income of their parents.

The same model is used to measure the correlation between education levels (it could be measured by years of schooling), occupational status, social status of children and of their parents. It can be interpreted as an estimation of inequality in education, if the educational level of child depends on family capital, including parents' education. Intergenerational mobility is higher if the link between probability to get a diploma and the social factors is weaker. At the same time the higher is the percent of educated people the lower could be level of ascending intergenerational mobility in the future.

Empirical research of Jencks *et al.* (1972), Featherman and Hauser (1978), Mare (1981, 2001) have shown the high level of dependence between education and incomes of children and their parents. Intergenerational mobility during the last 30 years was studied in different countries: by Atkinson (1981) and Atkinson, Maynard and Trinder (1983), Dearden *et al.* (1997) in the UK; by Rauum *et al.* (2003, 2005) in Norway; by Checchi and Flabbi (2005) in Italy; by Card (2005) in the USA. Solon (1999) made the review of the intergenerational mobility in the labor market; d'Addio (2007) has found some evidence for the OECD Countries in intergenerational transmission of disadvantage.

Empirical research analyzed the probability of the transition to the next educational level in different countries in the context of family status and social factors: an educational level of parents, cultural level of a family, parents' occupation and so forth. Robert and Bukodi (2000) have carried out research on data for Hungary, De Graaf (1988) for Germany, De Graaf (1986) for the Netherlands, Sin-Kwonk (1998) for Czechoslovakia. Comparisons between some countries have been made by Shavit and Blossfeld (1993) and Rijken and Ganzeboom (2000). Results have shown that social origin influence becomes much lower with the increase of the educational level; the inequality in the access to education decreased throughout the 20th century. Konstantinovskiy (1999) was among the first to analyze the inequality of the access to education in Russia and the former USSR. He studied educational plans of pupils in high school, their relation with families' characteristics, estimated the dependence of chances to be enrolled in higher school on social origin. Some projects of Independent institute of the social policy were devoted to the analysis of inequality in the higher education in Russia (Roshchina, 2005). The high dependence of social status of children on those of their parents' was found by Burlutskay (2000) and Reutova (2004) for Russia and by Oksamitnaya (1999) for Ukraine.

### 3. Research methodology and database

The model tests the probability to get the education of a given level depending on parents' education and some other variables. The main tool of the analysis is regression estimation. In this model the dependent variable is the probability of a child to obtain a certain educational level (or to be studying at this level of education). The dependent variable measures the educational level of a respondent (has the Diploma or is studying now) and has 5 levels:

- University (base outcome);
- Secondary professional school;
- Primary professional school;

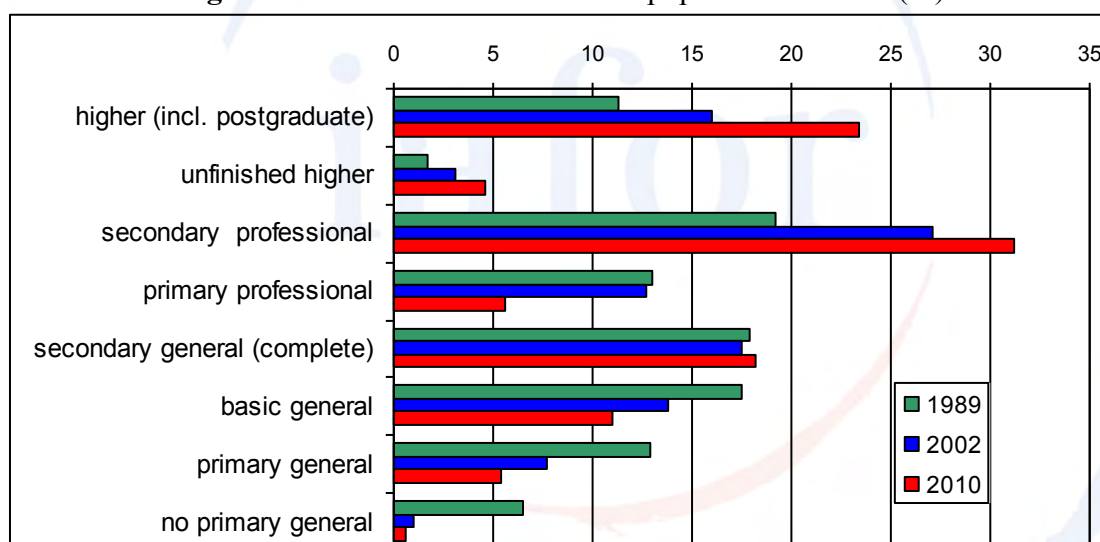
- High school;
- No high school diploma.

Independent variables are characteristics of a respondent (gender, age, place of birth, ethnicity) and of his/her parents (educational level, professional status, Communist Party membership) when respondent was 15. The data source is Russian Longitudinal Monitoring Survey (RLMS-HSE)<sup>2</sup> in 2006-2011. The main data about respondents and their parents were collected in 2006, but the information about respondents' education was found in all following rounds due to the panel nature of data. The sample of RLMS-HSE is representative for the Russian population as a whole.

#### 4. Stylized facts

During the past 20 years the educational level of the Russian population has significantly increased. According to Russian population census of 1989 only 45,2% of people had diploma on some professional education (including 11,3 % - university diploma or unfinished higher education), and the educational level of 19,4% was only high school or even lower. By 2010 the percentage of people who has graduated from professional school has grown to 64,8 % (including 28% - University diploma), and the percentage of those who had an educational level of primary school and less has declined to 6 % (figure 2).

**Figure 2.** Educational attainment of population over 15 (%)



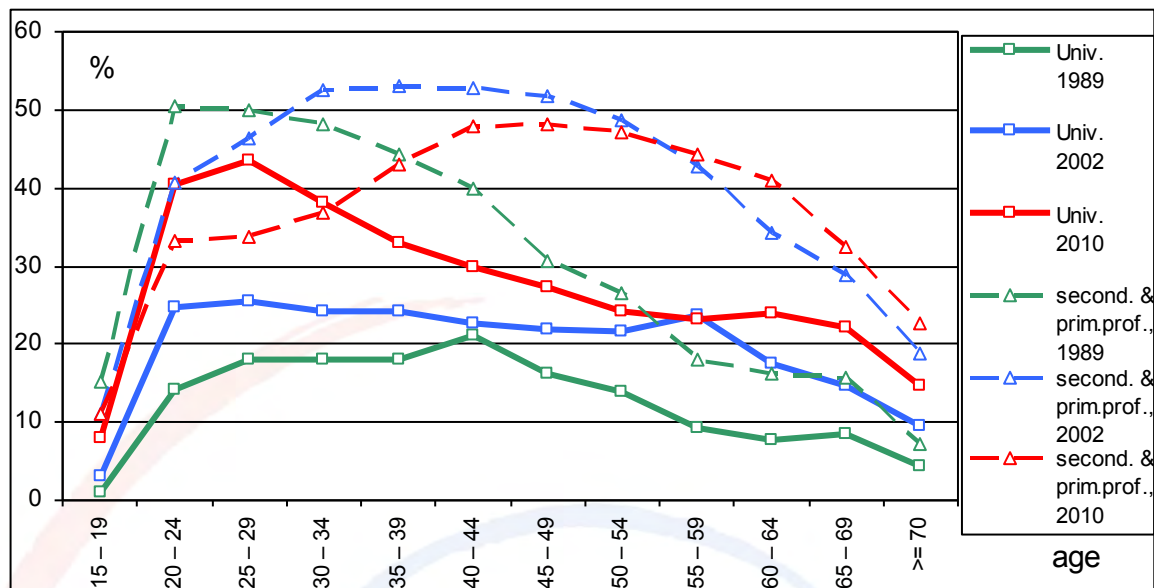
Sources: *Population censuses data*, Russian Federal State Statistic Service - RFSSS.<sup>3</sup>

The comparison of profiles age-education for 1989, 2002 and 2010 shows a solid growth of the proportion of population with primary and secondary professional education of the cohort over 35. These profiles also imply that the educational level of the cohort over 50 is significantly lower. The percentage of people with higher or unfinished higher education of all ages has grown by 1,3 – 1,8 times, and for the people older than 55 – by 1,8 – 2,6 times (figure 3).

<sup>2</sup> «The Russia Longitudinal Monitoring Survey (RLMS-HSE)» is conducted by National Research University - Higher school of economics and research center "Demoscope" with the participation the Carolina Population Center at the University of North Carolina at Chapel Hill and Institute of Sociology, Russian Academy of Sciences. (See <http://www.hse.ru/rlms>, <http://www.cpc.unc.edu/projects/rlms>)».

<sup>3</sup> [http://www.gks.ru/free\\_doc/new\\_site/perepis2010/croc/perepis\\_itogi1612.htm](http://www.gks.ru/free_doc/new_site/perepis2010/croc/perepis_itogi1612.htm)

**Figure 3.** Educational attainment of population (% of age groups)



Sources: *Population censuses data*, Russian Federal State Statistic Service - RFSSS. <sup>4</sup>

As it was mentioned above, in Russia in 1995-2010 there was a restructuring of professional education. Between 1996 and 2010 the number of Universities has grown by 1,5 times, and the number of their students – by 2,5 times. The percentage of students in higher schools among all students of the professional education has grown from 43,5% to 69,2%, and the percentage of students in primary schools among all students of the professional education decreased from 26,4% to 9,9%.<sup>5</sup>

RLMS-HSE data demonstrate similar dynamics. In 1994 among all respondents of the age over 15 only 16,7% had university diploma, 39,8% - primary professional or secondary professional education diploma, and 43,5% - the high school diploma or lower. However in 2010 these figures have grown to 25,5%, 37,4% and 37,1% accordingly. The survey also confirms the conclusion based on the RFSSS (Russian Federal State Statistic Service) data: the educational level in the older age groups is significantly lower (table 1 in Appendix).

Thus, it is quite obvious that during the recent 15 years the absolute accessibility of education (mainly of higher education) has grown. However it should be pointed out that here the absolute accessibility is considered as chances of an individual to enter the professional school that depends directly on the increased relative capacities of the universities and other educational institutions (ratio of number of places to number of the young of corresponding age). But such a concept of accessibility seems to be too simplified. As it was argued above, the inequality in access to education of a certain level is due to differentiation between individuals (excluding his/her own abilities and effort) and to social and economic distinction between their families. Therefore, the rise in the number of students because of the enrollment of those who pay tuition fees themselves (as opposed to government-paid spots) can increase accessibility of education only for rich social groups, but not for the whole population.

The high correlation between parents' educational levels and those of their children confirm the hypothesis that the strong inequality in the accessibility to education is still present. The RLMS-HSE data for the year 2006 contain information on parents' level of education when respondent was 15. The other questions were about whether respondent's parents were members of the Soviet Union Communist Party before 1991. Under socialism in Russia and in some other countries of Eastern Europe parents' membership in the Communist Party was a substantial part

<sup>4</sup> [http://www.gks.ru/free\\_doc/new\\_site/perepis2010/croc/perepis\\_itogi1612.htm](http://www.gks.ru/free_doc/new_site/perepis2010/croc/perepis_itogi1612.htm)

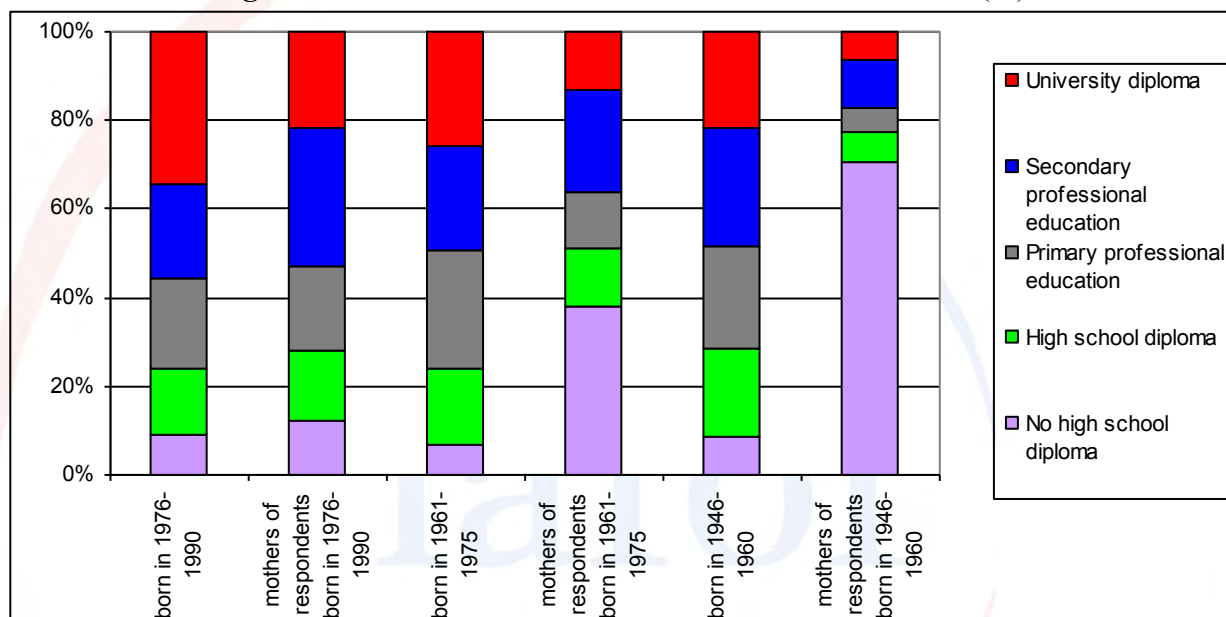
<sup>5</sup> Russian Federal State Statistic Service - RFSSS

<http://www.gks.ru/wps/wcm/connect/rosstat/rosstatsite/main/population/education/>

of social capital, and several researches have shown that membership in the party was a significant factor of children's chances to obtain an university diploma.

According to the tables 1-2 in the Appendix, for the three given cohorts of Russian population in 2006-2011 we can see the strong dependence of the educational level of a respondent on parents' education. Thus, among all respondents born in 1946-60 only 22% have graduated from a higher school. But the percentage of children born in 1946-60 with higher education rose to 67,4% if mother had an university diploma, to 40,4% if she had secondary professional education, and to 31,1% if she had the high school diploma. Therefore, for those who were born in 1946-1960, any next level of parents' education, in comparison with unfinished high school, raised chances of a child to have university diploma (see table 2 in the Appendix).

**Figure 4.** Educational level of cohorts and of their mothers (%).



Sources: RLMS-HSE 2006-11. Computations from the author.

In contrast, for cohorts born in 1961-1975 and in 1976-1990 only secondary or higher professional education of parents did have positive influence on the probability for a child to be enrolled into a University. For those whose father or mother had diploma of primary professional school, of high school or lower, this probability was smaller, than for the whole population (table 1 and 2). This implies that since the second half of the 1970s, educational mobility has decreased: it became more difficult for children from families with lower level of education to move to a more educated group. The strengthening of educational inequality is also confirmed by the evidence that in two older cohorts only about 10% of children, whose parents had no high education, got the same level of education, and in younger cohort this share is 25%.

As fig. 4 shows, the rising intergenerational educational mobility was lower for the younger cohorts. In some part it is due to the increased educational level of parents: the higher is the education the lower could be level of rising intergenerational mobility. So, 76,1% of children born in 1946-60 had the educational level higher than those of their mother, and only 42,5% of children born in 1976-90.

According to RLMS-HSE data the membership of parents in the Communist Party raised chances for their children to obtain higher education, but it didn't influence the access to other levels of professional education (see table 4 of the Appendix). For those who were born after 1976, the father's party status was more important than the mother's one. The educational chances always were worse for people born in villages. So, 29,1% of children born in 1946-60 in towns had university diploma and only 15,2% among those born in villages. For cohort born in 1976-90 the corresponding shares were 41,2% and 23,9%.

## 5. Regression estimation

Let us now estimate the model of probability to obtain the education of a given level depending on characteristics of individual and his/her parents for Russian people born in 1946-1990. Independent variables are:

- educational level of mother and father;
- whether mother and father were not members of Soviet Union Communist Party;
- whether respondent was born in the village;
- region where respondent was born;
- age of the parents when respondent was born;
- gender, age and ethnicity of respondent.

The method of this model estimation is a multinomial regression; base outcome is «respondent has university diploma or he/she is studying in university». Model was estimated for all three cohorts together (Appendix, table 4), and also for each cohort separately (Appendix, table 5).

Regression estimation for the whole sample demonstrates the significant level of dependence of respondent's education on his/her parents' one. If the father does not have high school diploma (in comparison with the case of father's University diploma), the probability for his child to obtain the secondary professional education is more than 2,7 time greater than to have university diploma; and the probability to not have any diploma is more than 7,7 time greater. If father's education is lower than secondary professional, it is most likely that his child would have primary professional education or would have no diploma. However, if father's education is secondary professional, the same level of the child's diploma is anticipated. This probability is more than 1,7 time greater than his child have higher education. So, the greater the father's human capital is the higher are chances of a child to be more educated. The same conclusion could be made about the influence of mother's education, but the impact of the latter is greater.

As the table 4 in the Appendix shows, the following factors have positive impact on the child's chances of having educational level lower than university diploma:

- parents' human capital is low;
- the respondent was born in a village;
- father wasn't a member of the Communist Party of the USSR;
- respondent's gender is male (excluding secondary professional education).

In general, given all other factors equal, compared to the oldest cohorts, the chances of the younger cohort (especially born in 1976-90) of not having any educational certificate are higher, than having a university diploma. But there is no impact of the year of birth on the probability to have diploma of high school in comparison with the university diploma. We could find no influence of the region where the respondent was born, of mother's membership in the Communist Party, very low influence of parents' age, and only some impact of respondent's nationality (in general North Caucasians, Tatars and Bashkirs had better chances in education).

The general conclusion is that there was no equality in access to professional education in the USSR. The most serious barriers were small amount of parents' human capital and parents' political capital (Communist Party membership), and a village as the birthplace (that may appear as low cultural capital, low family income, worse training in high school, great distance to educational institutions, etc.). Unfortunately, there are no data about family incomes (when respondent were 15) and type of school where respondents had studied, as most research insist that these factors are very significant too.

Let's now see if there is a difference in factors of the accessibility in education between different periods of Russian history. We take three cohorts. The youngest one consists of respondents born in 1976-90. They turned 15 during 1991-2005, and so they could be the applicants in the schools of professional education (primary, secondary or higher) in the first decade of post-socialism. The people in the second cohort (born in 1961-75) turned 15 in 1976-90, so, we can measure the difference of chances at that époque of the late socialism. And respondents in the oldest cohort

(born in 1946-60) turned 15 in 1961-1975: this period is the earliest to test the issues of the inequality of educational chances in the USSR (see table 5 in Appendix).

As regressions estimations show during all three periods people suffered from inequality in access to professional education (as there are significant coefficients in all models). Parents' human capital always had the strongest effect on educational chances. But the negative impact of its' low volume as a rule increased from the earlier period (1961-1975) to following ones (1976-1990): for example the child born in 1946-60 whose mother had not any diploma had the chances to remain at the same educational level 6,2 times greater than to graduate from university; but for those who were born in 1961-1975 this ratio was 27,3. For the cohort born in 1976-90 the probability to have no diploma or to graduate from primary professional college if mother has primary or secondary professional education increases in comparison with the cohort born in 1946-60. At the same time father's human capital became more important for child's probability of having secondary professional education, but mother's one became less important. As a rule, the educational level of mother had stronger impact than the father's one.

The influence of respondent's gender is very high for all levels of education excluding secondary professional colleges (in comparison with University). Young men had more chances to remain without any diploma, or to have diploma of high school or of primary professional school than to graduate from the university. Their access to secondary or higher professional education was the highest for people born in 1946-60. Regressions estimation show that to be born in a village resulted in great probability to remain without any professional education for the oldest and the youngest cohort. But the chances to obtain some professional education were the best for those who were born in 1961-75.

As data show if father was not a member of the Communist Party in the Soviet period his child (born in 1946-60 or in 1976-90) had more chances to not have any diploma or to have the high school diploma. There was no dependence of the probability to enter in secondary professional school in comparison with the university from father membership in the Communist Party or in all periods. And the influence of father membership in the Communist Party was the lowest for the cohort born in 1961-75. As data show, 56,7% of the children born in 1976-90 whose fathers were the members of the Soviet Union Communist Party obtained university diploma, and only 32,1% of the same cohort whose fathers were not Party members (Appendix, table 3). The corresponding percentages for people born in 1961-75 were 39,7% and 22,5%. This fact let us conclude that the political capital of parents (Soviet Union Communist Party membership) were transformed in their social and human capital and had positive influence on educational chances of children even after the USSR liquidation.

There is some influence of respondent's nationality and of his/her place of birth on professional education accessibility, but it isn't strong (not significant for most of dummies).

## 6. Conclusion

The main conclusion is that the inequity in access to professional education was strong for all three cohorts. RLMS-HSE data demonstrate that factors of the family capital (first of all an educational level of parents) represent an essential barrier of educational opportunities of high schools graduates. The existing social inequality of children's families is fixed in high school as children of poorer and less educated parents, as a rule, study at bad schools and are less successful in education. Parents' human capital always had the greatest effect on educational chances among all other factors.

The negative impact of parents' low human capital was stronger for younger cohort (born in 1976-90) than for the older one (born in 1946-60). That is why although the absolute accessibility of professional education in modern Russia increased, the relative accessibility of professional education (i.e. their dependence on parents' education) decreased. The ascending intergenerational educational mobility became lower.

Today the system of the Russian professional education is, to the great extent, the mechanism of fastening the existing social inequality rather than of social mobility. Students of the primary professional education are children who have graduated from bad schools, whose parents have a low social status; they have humble expectations about their future employment. Students of the universities are children of parents with a high social status; they graduated from much better schools, and have aspirations about their future job. Students of the secondary professional education were raised in the families with the moderate social positions, they graduated from medium range schools, their plans for the near future are connected with universities enrollment rather than with work-related issues.

Thus, in the Russian social hierarchy the primary professional schools and the universities represent the bottom and the top levels where it is possible to move aside, but not upwards, on other words, they allow only horizontal social mobility. Moreover, only the secondary professional schools look like a ladder to the next «social level» giving their students the possibility to be enrolled in the universities and then to get good employment.

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## Appendix.

**Table 1.** Education of respondents, their fathers and mothers by cohorts, Vert% (RLMS, 2006-11)

	Respondents year of birth			Total
	1976-90	1961-75	1946-60	
<i>Education of the respondent</i>				
No high school diploma and not studying now	9,2	6,8	8,5	8,2
High school diploma	14,9	17,4	20,0	17,3
Primary professional education (studying now or has the diploma)	20,4	26,4	23,3	23,3
Secondary professional education (studying now or has the diploma)	20,9	23,6	26,3	23,5
University (studying now or has the diploma)	34,6	25,8	21,9	27,7
<i>Education of father when a respondent was 15</i>				
No high school diploma	17,5	41,1	69,3	40,6
High school diploma	15,7	10,3	4,1	10,5
Primary professional education	28,1	18,2	9,2	19,2
Secondary professional education	18,4	13,9	8,0	13,8
University diploma	20,3	16,5	9,4	15,8
<i>Education of mother when a respondent was 15</i>				
No high school diploma	12,4	38,0	70,7	38,2
High school diploma	15,8	12,9	6,7	12,1
Primary professional education	18,6	12,7	5,4	12,8
Secondary professional education	31,2	23,2	10,8	22,5
University diploma	21,9	13,0	6,4	14,4

**Table 2.** Respondents' and their mothers' education level by cohorts, Vert% (RLMS, 2006-11).

Cohorts	Educational level of respondent	Mother's education when the respondent was 15				
		No high school diploma	High school diploma	Prim.prof. education	Second.prof. education	University diploma
1976-90	No high school diploma	24,7	11,1	8,4	5,4	2,1
	High school diploma	15,3	20,4	16,2	12,2	11,2
	Primary prof.education	25,7	23,5	31,4	16,4	9,1
	Secondary prof.education	16,7	25,4	21,4	24,9	13,0
	University diploma	17,7	19,7	22,6	41,1	64,6
1961-75	No high school diploma	9,6	7,8	5,8	3,1	,8
	High school diploma	21,7	18,3	13,4	14,3	11,8
	Primary prof.education	32,5	26,9	33,2	20,4	8,9
	Secondary prof.education	23,3	25,5	24,7	27,7	16,6
	University diploma	12,9	21,5	23,0	34,5	61,8
1946-60	No high school diploma	10,6	2,7	3,4	1,3	2,3
	High school diploma	21,9	15,8	13,5	16,2	10,3

	Primary prof.education	26,7	14,8	25,0	11,4	7,4
	Secondary prof.education	26,1	35,5	31,8	30,6	12,6
	University diploma	14,7	31,1	26,4	40,4	67,4

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**Table 3.** Respondents' education depending on parents' membership in the Communist Party before 1991 and place of birth, by respondents' cohorts, Vert% (RLMS, 2006-11).

Respondent s' years of birth	Education of respondent	Father was member		Mother was member		Respondent was born in	
		no	yes	no	yes	town	village
1976-90	No high school diploma	9,6	3,7	9,4	6,0	6,9	13,4
	High school diploma	15,6	9,2	15,2	11,7	12,3	19,3
	Primary prof.education	21,1	13,7	20,2	17,3	19,3	22,2
	Secondary prof.education	21,6	16,7	21,2	16,6	20,3	21,2
	University diploma	32,1	56,7	34,0	48,4	41,2	23,9
1961-75	No high school diploma	7,4	3,3	6,7	5,9	5,8	8,3
	High school diploma	18,2	14,6	17,7	12,5	13,3	23,2
	Primary prof.education	27,6	20,2	26,6	21,6	25,2	28,5
	Secondary prof.education	24,3	22,2	23,8	24,5	24,9	21,8
	University diploma	22,5	39,7	25,2	35,5	30,8	18,2
1946-60	No high school diploma	9,6	4,0	8,8	4,0	5,9	11,0
	High school diploma	21,4	15,6	20,3	16,8	19,5	20,3
	Primary prof.education	25,3	16,6	23,4	17,3	18,7	27,4
	Secondary prof.education	26,1	27,9	26,6	24,8	26,9	26,1
	University diploma	17,6	35,8	20,9	37,1	29,1	15,2

**Table 4.** Multinomial logistic regression (rrr - relative-risk ratios, or exp(b); if  $RRR < 1$ , than  $b < 0$ ), dependent variable is educational level of respondent. "Higher education (has the diploma or is studying in University now)" is the base outcome. Sample: Russian population born in 1946-1990. (RLMS-HSE, 2006-2011)

<i>Dependent variable outcomes</i>	No high school diploma	High school diploma	Primary professional education	Secondary professional education
<i>Years of birth (1946-60 is base outcome)</i>				
1976-90	<b>2,440***</b>	0,835	1,243*	<b>0,711***</b>
1961-75	<b>1,521***</b>	1,123	<b>1,727***</b>	1,048
Male	<b>2,612***</b>	<b>2,617***</b>	<b>3,102***</b>	1,075
<i>Ethnicity (Russian is base outcome)</i>				
Ukrainian, Byelorussian, Moldavian nationalities of the North Caucasus small nationalities of the Volga region and the North of Russia	0,801	0,522	0,972	0,588*
Tatars, Bashkirs	<b>0,521**</b>	<b>1,854***</b>	<b>0,209***</b>	0,700*
other	0,590	1,347	1,314	1,018
<i>Father wasn't a member of the CPSU</i>	<b>0,431**</b>	0,871	0,740	<b>0,633**</b>
<i>Mother wasn't a member of the CPSU</i>	1,246	1,114	0,643	0,979
<i>Father's education (Higher education is base outcome)</i>	<b>1,953***</b>	<b>1,392***</b>	<b>1,291**</b>	<b>1,231**</b>
No high school diploma	0,792	1,077	0,809	0,899
High school diploma	<b>7,716***</b>	<b>3,741***</b>	<b>6,086***</b>	<b>2,750***</b>
Primary professional education	<b>3,943***</b>	<b>2,167***</b>	<b>3,526***</b>	<b>2,524***</b>
Secondary professional education	<b>4,752***</b>	<b>1,901***</b>	<b>4,060***</b>	<b>2,491***</b>
<i>Mother's education (Higher education is base outcome)</i>	1,626	<b>1,547***</b>	<b>1,564**</b>	<b>1,756***</b>
No high school diploma	<b>15,563***</b>	<b>3,490***</b>	<b>5,882***</b>	<b>3,916***</b>
High school diploma	<b>8,224***</b>	<b>3,185***</b>	<b>4,269***</b>	<b>3,808***</b>
Primary professional education	<b>5,252***</b>	<b>2,624***</b>	<b>4,907***</b>	<b>2,930***</b>
Secondary professional education	<b>2,771***</b>	<b>1,600***</b>	<b>2,011***</b>	<b>2,288***</b>
<i>Age of father at a birth of a respondent</i>	0,986	<b>0,978**</b>	0,982*	1,006
<i>Age of mother at a birth of a respondent</i>	1,006	1,012	1,016	0,981*
<i>Respondent was born in the village</i>	<b>2,008***</b>	<b>1,558***</b>	<b>1,482***</b>	<b>1,320***</b>
<i>In what republic of USSR respondent was born (Russia is base outcome)</i>				
Ukraine, Belarus, Moldova	0,826	0,730	0,798	1,226
Transcaucasia	1,549	1,562	1,787	1,679
Baltic	1,198	2,816*	1,603	0,740
Asia	0,916	0,863	0,734	1,049
Other republic	0,000	0,188	0,291	0,475
<i>Number of obs</i>		6916		
<i>LR chi2(104)</i>		2221.54		
<i>Prob &gt; chi2</i>		0.0000		
<i>Pseudo R2</i>		0.105		

*Coefficients' significance: \*\*\* - 1%, \*\* - 5%, \* - 10%.*

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**Table 5.** Multinomial logistic regression (rrr - relative-risk ratios, or exp(b); if RRR< 1, than b < 0), dependent variable is educational level of respondent. "Higher education (has the diploma or is studying in University now)" is the base outcome. Sample: Russian population born in 1946-1990. (RLMS-HSE, 2006-2011). Regressions are made by cohorts.

	Born in 1976-90	Born in 1961-75	Born in 1946-60	Born in 1976-90	Born in 1961-75	Born in 1946-60
	<b>No high school diploma</b>			<b>High school diploma</b>		
<i>Age</i>	0,987	<b>0,847***</b>	<b>1,083***</b>	1,011	0,974	<b>0,958**</b>
<i>Male</i>	<b>2,862***</b>	<b>3,536***</b>	<b>1,865***</b>	<b>2,789***</b>	<b>3,058***</b>	<b>2,120***</b>
<i>Ethnicity (Russian is base outcome)</i>						
Ukrainian, Byelorussian, Moldavian	4,820*	0,423	0,647	0,594	<b>0,131**</b>	1,408
nationalities of the North Caucasus	<b>0,283**</b>	0,441	1,226	<b>1,869**</b>	1,792*	1,583
small nationalities of the Volga region and the North of Russia	0,559	0,320	1,108	0,692	0,978	<b>2,274**</b>
Tatars, Bashkirs	0,282	0,601	0,695	0,617	1,311	0,838
other	1,117	1,317	0,818	1,151	1,062	0,940
<i>Father wasn't a member of the CPSU</i>	1,851*	1,440	<b>2,580***</b>	<b>1,710**</b>	1,092	<b>1,535**</b>
<i>Mother wasn't a member of the CPSU</i>	0,925	0,668	0,888	0,981	1,157	1,069
<i>Father's education (Higher education is base outcome)</i>						
No high school diploma	<b>7,240***</b>	<b>10,966***</b>	<b>6,877**</b>	<b>3,781***</b>	<b>3,752***</b>	<b>3,320***</b>
High school diploma	<b>3,869***</b>	<b>4,955**</b>	3,158	<b>2,452***</b>	<b>2,495***</b>	1,231
Primary professional education	<b>4,365***</b>	<b>9,256***</b>	2,404	<b>2,276***</b>	<b>1,992**</b>	1,239
Secondary professional education	1,315	2,349	1,940	1,463	1,489	1,777*
<i>Mother's education (Higher education is base outcome)</i>						
No high school diploma	<b>18,335***</b>	<b>27,333***</b>	<b>6,160**</b>	<b>2,216***</b>	<b>4,100***</b>	<b>4,291***</b>
High school diploma	<b>10,950***</b>	<b>10,033***</b>	1,972	<b>3,422***</b>	<b>2,779***</b>	<b>3,501***</b>
Primary professional education	<b>6,324***</b>	<b>4,796**</b>	3,142	<b>3,111***</b>	<b>2,245**</b>	2,144
Secondary professional education	<b>2,719**</b>	3,491*	1,190	1,330	<b>1,701**</b>	2,061*
<i>Age of father at a birth of a respondent</i>	1,015	<b>0,942**</b>	0,980	0,990	0,963*	0,981
<i>Age of mother at a birth of a respondent</i>	0,995	1,004	1,039	1,007	1,003	1,026
<i>Respondent was born in the village</i>	<b>2,486***</b>	1,296	<b>2,514***</b>	<b>1,836***</b>	<b>1,785***</b>	1,206
<i>In what republic of URSS respondent was born (Russia is base outcome)</i>						
Ukraine, Belarus, Moldova	0,318	1,659	0,701	1,514	1,188	<b>0,342**</b>
Transcaucasia	4,095	1,008	1,657	2,738	1,418	1,613
Baltic	4,724	0,000	0,000	4,660	0,853	2,545
Asia	0,858	0,823	1,237	1,179	0,982	0,609
Other republic	0,000	0,000	0,000	0,000	0,000	0,787

<i>Number of obs</i>	2227	2419	2270
<i>LR chi2(100)</i>	817.14	863.58	725.75
<i>Prob &gt; chi2</i>	0.000	0.000	0.000
<i>Pseudo R2</i>	0.124	0.118	0.104

*Coefficients' significance: \*\*\* - 1%, \*\* - 5%, \* - 10%.*

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**Table 5.** Continued.

	Born in 1976-90	Born in 1961-75	Born in 1946-60	Born in 1976-90	Born in 1961-75	Born in 1946-60
	<b>Primary professional education</b>			<b>Secondary professional education</b>		
<i>Age</i>	1,005	0,992	<b>0,939***</b>	<b>0,966**</b>	1,006	0,979
<i>Male</i>	<b>3,528***</b>	<b>2,849***</b>	<b>3,020***</b>	<b>1,351**</b>	0,960	0,939
<i>Ethnicity (Russian is base outcome)</i>						
Ukrainian, Byelorussian, Moldavian	0,670	0,561	2,238	0,622	<b>0,226***</b>	1,081
nationalities of the North Caucasus	<b>0,179***</b>	<b>0,236***</b>	<b>0,186***</b>	0,876	0,747	<b>0,383**</b>
small nationalities of the Volga region and the North of Russia	1,277	1,190	1,450	1,041	0,802	1,363
Tatars, Bashkirs	<b>0,230***</b>	1,132	0,947	0,510*	0,640	0,812
other	0,598	0,843	<b>0,262**</b>	1,414	1,126	0,623
<i>Father wasn't a member of the CPSU</i>	1,494*	1,024	1,359*	1,251	1,239	1,150
<i>Mother wasn't a member of the CPSU</i>	0,815	0,786	0,751	1,021	0,753	0,870
<i>Father's education (Higher education is base outcome)</i>						
No high school diploma	<b>4,690***</b>	<b>6,416***</b>	<b>7,363***</b>	<b>2,534***</b>	<b>2,356***</b>	<b>3,364***</b>
High school diploma	<b>3,605***</b>	<b>3,875***</b>	2,589*	<b>2,320***</b>	<b>2,742***</b>	1,933*
Primary professional education	<b>4,364***</b>	<b>4,300***</b>	<b>3,404***</b>	<b>2,462***</b>	<b>2,389***</b>	<b>2,210***</b>
Secondary professional education	1,525	<b>1,749**</b>	1,235	<b>1,719**</b>	<b>1,656**</b>	<b>2,003**</b>
<i>Mother's education (Higher education is base outcome)</i>						
No high school diploma	<b>5,772***</b>	<b>6,259***</b>	<b>5,947***</b>	<b>2,886***</b>	<b>4,706***</b>	<b>4,278***</b>
High school diploma	<b>5,409***</b>	<b>3,988***</b>	<b>3,831***</b>	<b>4,884***</b>	<b>2,998***</b>	<b>4,639***</b>
Primary professional education	<b>6,252***</b>	<b>4,221***</b>	<b>4,954***</b>	<b>3,103***</b>	<b>2,771***</b>	<b>3,840***</b>
Secondary professional education	<b>1,934***</b>	<b>2,291***</b>	1,753	<b>2,335***</b>	<b>2,257***</b>	<b>2,689***</b>
<i>Age of father at a birth of a respondent</i>	0,999	0,988	0,973	0,997	1,016	1,000
<i>Age of mother at a birth of a respondent</i>	1,007	0,997	1,038*	0,976	<b>0,963**</b>	1,002
<i>Respondent was born in the village</i>	<b>1,490***</b>	1,075	<b>1,935***</b>	<b>1,490***</b>	0,996	<b>1,456***</b>
<i>In what republic of URSS respondent was born (Russia is base outcome)</i>						
Ukraine, Belarus, Moldova	0,901	1,593	<b>0,312**</b>	1,045	1,283	1,142
Transcaucasia	3,892*	1,256	2,416	0,790	1,029	<b>3,805**</b>
Baltic	1,489	0,000	3,836*	1,075	0,748	0,686
Asia	0,879	0,953	<b>0,313**</b>	0,950	0,948	1,294
Other republic	0,000	0,497	0,845	0,381	0,000	1,368

**Table 6.** Means of dependent and independent variables by cohorts. Sample: Russian population born in 1946-1990. (RLMS-HSE, 2006-2011).

	<i>Born in 1976- 1990</i>	<i>Born in 1961- 1975</i>	<i>Born in 1946- 1960</i>	<i>All simple</i>
<b><i>Dependent variable</i></b>				
No high school diploma	0,09	0,07	0,09	0,08
High school diploma	0,15	0,17	0,20	0,17
Primary professional education	0,20	0,26	0,23	0,23
Secondary professional education	0,21	0,24	0,26	0,23
University diploma	0,35	0,26	0,22	0,28
<b><i>Independent variables</i></b>				
<i>Age (in 2006)</i>	23,3	37,8	52,2	37,0
<i>Male</i>	0,47	0,47	0,41	0,45
<i>Ethnicity</i>				
Russian	0,88	0,84	0,84	0,85
Ukrainian, Byelorussian, Moldavian	0,009	0,023	0,031	0,021
nationalities of the North Caucasus	0,039	0,043	0,029	0,040
small nationalities of the Volga region and the North of Russia	0,028	0,037	0,046	0,036
Tatars, Bashkirs	0,025	0,028	0,031	0,028
other	0,017	0,024	0,020	0,021
<i>Father wasn't a member of the CPSU</i>	0,86	0,79	0,74	0,80
<i>Mother wasn't a member of the CPSU</i>	0,90	0,91	0,93	0,91
<i>Father's education</i>				
No high school diploma	0,17	0,41	0,69	0,41
High school diploma	0,15	0,10	0,03	0,10
Primary professional education	0,28	0,18	0,09	0,19
Secondary professional education	0,18	0,13	0,08	0,14
Higher education	0,20	0,16	0,09	0,16
<i>Mother's education</i>				
No high school diploma	0,12	0,37	0,70	0,39
High school diploma	0,15	0,13	0,06	0,12
Primary professional education	0,18	0,12	0,05	0,12
Secondary professional education	0,31	0,23	0,11	0,22
Higher education	0,22	0,13	0,06	0,15
<i>Age of father at a birth of a respondent</i>	27,5	28,7	30,1	28,7
<i>Age of mother at a birth of a respondent</i>	25,5	26,8	27,7	26,6
<i>Respondent was born in the village</i>	0,35	0,40	0,51	0,42
<i>In what republic of URSS respondent was born</i>				
Russia	0,95	0,91	0,91	0,92
Ukraine, Belarus, Moldova	0,016	0,031	0,039	0,029
Transcaucasia	0,009	0,015	0,015	0,013
Baltic	0,002	0,001	0,006	0,003
Asia	0,025	0,044	0,028	0,033
Other republic	0,003	0,001	0,002	0,003
<i>Number of obs</i>	2227	2419	2270	6916

*Learning and Teaching Through Music*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

A lack of music teaching in early years education across the globe stimulated the creation of the Bonkers Beat® Music Program, enabling more children to benefit from music. The program is designed for young children from 15 months to 8 years of age and features music as an integral part in all lessons, including physical movement, languages, literacy and numeracy. The program makes learning a joy, but above all else it enhances children's multiple intelligences, helping them become better learners in the early years of their primary schooling. Music is the key element of the program. Daily music sessions are based on both traditional songs and original compositions. They incorporate singing, dancing, creative movement and the playing of instruments. The music program was based on the internationally recognised Kodaly and Orff methods of pedagogy to stimulate children's social, intellectual and emotional growth. The program also uses songs and rhythms to encourage children to follow daily routines. Spontaneous and intentional art and craft ideas are linked to themes covered in songs and are used to support the integrated curriculum and help children learn visually. This paper is based on a number of case studies of selected students who attended the Bonkers Beat Music Kinder in Brighton East, Victoria, Australia, during a period of five years, between 2007 and 2011. Individual case studies are not included in this paper.

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## **Introduction / Overview**

The need for music for every child, every day, is an international issue and transcends the boundaries of language and culture. In June 2010, Bonkers Beat Music Kinder at Brighton was included in the E4Kids study run by The University of Melbourne and on 10 May 2010, the Bonkers Beat Music Program was selected to be presented at The 2010 DEECD Innovation Showcase, Victoria. Since 2004, more than 160 children attended the kinder and on 4 May 2009, a second kinder was opened in Aspendale, Melbourne. The Bonkers Beat Music Kinder Aspendale became a pilot centre for the Australian National Quality Standard and in September 2012 went through the Assessment process receiving an outstanding rating of Exceeding NQS.

## **Research Aims**

The main focus of this research is to analyse and identify the direct and indirect impact of music on children's development and behaviour. The main focus of the music program is to improve Social, Physical, Intellectual, Creative & Emotional Developmental domains in children from 0 to 8 years through a consistent approach and the use of daily music practices. From 2007 to 2010 more than twenty children with special needs attended the kinder and showed a dramatic progress in their development due to being in a mainstream environment and having music as a foundation for their learning.

## **How does Music Change the Brain?**

According to Schlaug, G., Jancke, L., Huang, Y., and Steinmetz, H., "...brain scans of musicians showed larger planum temporale (a brain region related to some reading skills) than those of non-musicians. They also found that musicians had a thicker corpus callosum (the bundle of nerve fibers that connects the two halves of the brain) than those of non-musicians, especially for those who had begun their training before the age of seven." If this is the case and music can physically change the architecture of the brain, then we should look at when the best time to introduce music is and why.

In 1994, Rauscher, Shaw, Levine, Ky and Wright, wrote in the "Music and Spatial Task Performance: A Causal Relationship," - "After eight months of keyboard lessons, preschoolers showed a 46% boost in their spatial reasoning IQ." Rauscher, F.H., and Zupan, M.A. highlighted that "Kindergarten children who were given music instruction scored 48 percent higher on spatial-temporal skill tests than those who did not receive music training."

When we listen to music, it is processed in many areas of our brain. The extent of the brain's involvement was scarcely imagined until the early nineties, when functional brain imaging became possible. Since then, many brain scans of musicians have shown that musical training physically develops part of the left side of the brain and makes an enormous impact on the development of language, reasoning, math, science, concentration, memory, self-expression, stress release and many other areas.

There are many powerful reasons why children benefit from music education. One of them is that playing music improves children's reading, verbal skills as well as increases their level of concentration, memory and self-expression. Music is powerful in helping children to develop social and emotional skills, become less stressed and enjoy learning. Playing music also builds or modifies neural pathways related to spatial reasoning tasks which are crucial for math, science, chess and so on. In 1993, there were some studies conducted comparing four groups of children. Some children had computer lessons, some had singing lessons or playing lessons (keyboard) and one group had no classes at all. The result was the following: the children who had the music classes scored significantly higher – up to 35% – than the children who did nothing additional and surprisingly, also 35% higher than children who had the computer classes. Another important

question is when is the best time to start music education or introduce music to a child? Accordingly to Tamara Koehler, Scripps Howard News Service, May 25, 2003, the "First five years of life are a crucial period for learning - a short but spectacular window of time when experiences can change the architecture of the developing brain." Long before their school years, the groundwork for whether a child will succeed and thrive is already being laid. "But what we do know is this is a critical time when you can help a child be ready for school, be at the highest level of development he or she can be" admits Dr. Harry Chugani, Professor of Pediatrics, Neurology and Radiology from the Children's Hospital of Michigan in Detroit. He also says: "We now have concrete images of the way the brain is hooked up early in life, and it is truly a remarkable period like no other in life. He also believes that 'this is a critical time when you can help a child be ready for school, be at the highest level of development he or she can be.'" Accordingly to Michael E. DeBakey, M.D., Leading Heart Surgeon from Baylor College of Medicine., "Studying music encourages self-discipline and diligence... leads to effective study and work habits. Creating and performing music promotes self-expression and provides self-gratification. Music deserves strong support in all educational systems."

### **Theoretical Framework**

The Bonkers Beat® Program features music as an integral part in all lessons, including physical movement, languages, literacy and numeracy, using the highly-regarded teaching approach of Kodaly and Orff. The main focus is on learning through music, therefore enhancing every child's development.

### **Paradigm and Methods**

Daily 30 min music sessions are based on original compositions and are integrated into the kinder curriculum. The Bonkers Beat Music Program is based on the highly-regarded teaching approach of Kodaly and Orff, including singing, dancing and playing instruments, incorporating learning stories, art and craft activities, as well as consistently using traditional songs and rhymes. All educators are trained to deliver the music program to every child, every day. Traditional songs are used for transitional times and parents are encouraged to continue music and transitional routines at home.

### **Ethical Considerations**

Children of different backgrounds, socio-economic groups and varying abilities attended Bonkers Beat Music Kinder, therefore special considerations were taken to accommodate their unique needs. A variety of interviews, surveys and observations demonstrated a wide range of multicultural communities involved in this research and continuous practice.

### **Main Findings**

Children developed an appreciation and love of music, multicultural and social identity. Furthermore, improved social skills, concentration, focus, listening skills, speech, language, gross and fine motor skills, flexibility, co-ordination, co-operation, team work, patience, imagination, self-esteem, acceptance, memory, spatial intelligence, well-being, health, self-control, sense of beat, rhythm, singing and playing instruments are all evident. Outcomes for gifted children, children with Autism Spectrum Disorder (ASD) or children with additional needs include: task focus, increased attention span, better communication skills, interaction with other children, improved speech, language skills, coordination, fine and gross motor skills, emotional responses

to music, releasing laughter or joy, cooperation, teamwork and turn-taking, confidence, leadership, imagination and motivation in music making.

### **Implications for Practice and/or Policy**

Six years of research and daily practice of music with young children aged two to five years have shown improvement in children's development regardless of their previous experiences and background. Based on facts, numbers, experiences and real life examples, this research underlined the urgency of having more children's services implementing integrated music activities into daily routines.

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*Language and its Relation to Multiracial and Multiethnic Identity Development*

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Official Conference Proceedings 2012



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## **Introduction and Purpose of the Paper**

Multiracial and multiethnic individuals are theorized to have existed since the beginnings of civilization as groups of people have migrated across geographical boundaries. Historically, various cultural, ethnic, and racial groups of people have come into contact with each other over the course of time and have mixed together—even before the discovery of the “New World” when Europeans perceived they had come into contact with other races for the very first time. However, it is beyond the scope and aim of this paper to inquire into physiological, sociological and historical perspectives of how to define ‘race’. Instead, the purpose is to inquire into the ways that language – its acquisition and development, use and usage, and its policy, education and levels of competency in one or more languages, is related to the personal construction of identity of multiracial and multiethnic individuals. The fact remains that multiracial and multiethnic individuals exist in many societies and are continuing to increase in numerous countries around the globe.

A review of the literature on multiracial people and their definition and development of identity has revealed that the majority of studies have focused on the following issues and topics: counseling (Cauce et al. 1992; Wardle 2000), identity development models (Poston 1990; Jacobs 1992; Thornton 1996; Schwartz 1998) historical perspectives on mixed race individuals (Daniel 1992; Nakashima 1992; Spickard 1992), and the significance of physical appearance to identity. While there is a large body of literature that examines the relationship of language to intrapersonal identity and ethnic identity (Fishman 1977; Gudykunst and Schmidt 1987; Clement and Noels 1992; Edwards 1994; and Liebkind 1999), interestingly, however, the author did not find many research studies or writings that focused specifically on the issues of language among multiracial and multiethnic people or the relationship of language in identity development in these two bodies of research. Perhaps, the word ‘language’ needs elaboration before further discussing how language might relate to the multiracial individuals and their identities. ‘Language’ for the purpose of this investigative paper refers to the choice of language, its use and usage, the developmental growth in language proficiency, values, attitudes, practices and policy toward language use as determined by the family, school and community or national context in which it is acquired and employed by a biracial or multiracial individual. ‘Language’ is not limited to being simply, a tool of communication but is also understood as means to develop social relationships, can be highly symbolic, and is utilized to navigate the self

in world.

The goal of this paper is to create an initial framework towards understanding the relationship of language and identity in multiracial and multiethnic individuals. There have been several questions that have guided the research and process of constructing this inquiry. They are: 1) How are the words multiracial and multiethnic defined? 2) How is language related to identity? How is language related to ethnicity? 3) What kinds of factors are involved in how a multiracial or multiethnic identity formation? 4) What is the relation of language to multiracial individuals and to the formation of their identity? This paper will: 1) Examine definitions and terminology relating to multiracial and multiethnic individuals along with bilingualism and the concept of biculturality; 2) Consider how language interrelates to identity; 3) Explore factors involved in multiracial identity formation; 4) Highlight why the topic should be further examined and to make suggestions towards a cohesive body of research in the future.

### **Exploring Terminology:**

In order to properly frame the scope of this paper, it is important to ascertain the basic concepts and to define what is meant by various terms that are relevant to describing people who have multiple cultural, linguistic, social, and racial heritages. Before exploring frameworks of multiracial identity formation and the relationship of language and identity, it is important to clarify the meaning of some of the terminology that is associated with this topic of study. First, it is necessary to describe what is meant by the terms: biracial, multiracial, multiethnic, and mixed-heritage individuals. These words are often used interchangeably but some researchers have preferences for using certain terms because they denote different things to different people. Some terms are more political than others so particular researchers feel that certain terms are more appropriate to use. It is important to remember that there is no general consensus by researchers as to what these terms actually mean, nor are there prescriptions as to the fashion that they should be used. The author's preference is to use the terms biracial and multiracial interchangeably. However, the author will also explore terms such as mixed-heritage and multiethnic because they are helpful in further expanding our knowledge of multiracial individuals and raising awareness of the complexity of the issues involved. The terms 'bilingual' and 'bicultural' will also be explained because they have relevance to investigating how language is specifically related to the identity of multiracial and multiethnic individuals.

**Biracial:** According to Root (1992), the term biracial refers to “someone with two socially and phenotypically distinct racial heritages—one from each parent” (11).

**Multiracial:** A multiracial individual is a person for whom at least one or both of the individual’s parents are biracial or multiracial and whose other parent is monoracial. This term is a more inclusive one because it can be used to describe all people who are racially mixed, whether it may be two, three, or more different racial heritages and in various degrees and combinations. Root (1992) suggests that this definition of the word multiracial possibly extends to include individuals with biracial or multiracial heritage to the grandparents’ generation.

**Mixed Heritage:** According to Stephan (1992), the term race suggests that there are biological divisions of human groups, a distinction that is probably fictional in terms of physiology, but is a real society construct in our societies. The term ‘heritage’ suggests a combination of biological race and cultural factors in distinguishing groups or individuals. A mixed-heritage individual is the offspring of parents that are of two different ethnic/racial heritages. Another term that is used in a similar fashion is “mixed-race,” which describes the genetic background of an individual as a combination between two or more different races. This differs from the term ‘multiethnic’, explained below.

**Multiethnic:** Kerwin and Ponterotto (1995) describe ethnicity as a group of people’s culture that is vital to aspects of the group’s values, attitudes, perception, needs, modes of expression, behavior, and identity. Ethnic identity is significant according to Stephan (1992) because it is the identification of an individual or group of individuals with a specific culture that establishes one’s self-meaning and overrides all other people’s judgments of the self. A multi-ethnic individual is characterized by two or more different distinctive cultural heritages. A bi/multiracial individual will likely be a multiethnic individual as well. However, the converse does not apply, as multi-ethnic individuals are not necessarily multiracial. If a child is born and raised between a Chinese mother and Korean father who are both monoracial, the child will be multiethnic but may not necessarily perceived herself or be perceived as bi/multiracial because both parents are Asians.

**Bilingual:** According to Baetens Beadsmore (1986), bilingualism can be interpreted as, a method allowing someone communicate efficiently, imposed on or chosen by them, between two or more worlds, using two different linguistic systems. Bilingualism might be understood as the ability to use two languages in a manner that will allow the individual to achieve certain goals within his or her life. If a person can communicate verbally with other human beings and use language that entails the activities necessary in their daily life, they are usually thought to be bilingual. Although one can view language as a merely a communicative tool, the author's perception of language is not limited to this purely instrumental view of language as it is deeply inter-related with a person's self and social identity. Through the means of language, we transmit our ideas, knowledge, emotions, and culture to other human beings. Language helps us to create, maintain, and develop relationships not only with other people but also within ourselves. It encompasses every aspect of a person's life and the author believes that the development and use of language is a basic component that characterizes us as human beings. If a person lacks linguistic capabilities, this may inhibit them from gaining access to resources and relationships that might be crucial to their lives. Language, at times, can be utilized as markers of social groups and to distinguish ethnicities of people.

**Bicultural:** La Framboise et al. (1993) described biculturalism as a state where the competencies and sensitivities associated with two cultures inside a single individual became combined and coexist together. This term is relevant to multiracial and mixed-heritage individuals because it has the potential for reframing our perception and thus societal acceptance of these people as "doubles" who have the ability to thrive in more than one culture, within two or more racial or ethnic groups, or in a multicultural society. Although at times, biculturality or the aspect of living in between two worlds is described as a struggle or source of conflict (LaFromboise et al., 1993), there is promise in utilizing this concept in addressing multiracial and multi-heritage individuals because it can help us frame our recognition and validation of these people in terms of duality or multiplicity of identities, abilities, and perspectives. A bicultural framework allows multiracial and multi-heritage individuals to be perceived, understood and accepted as people who are of more than one racial, ethnic, or cultural background rather than in a social rubric where people are categorized, or even castigated, as being a member of a certain race—never being valued as being 'both' or possessing a multiple racial heritage but as being 'either/or' —simply because of the person's physical or superficial appearance.

## **Exploring the Relationship of Language and Identity**

This section will examine two different viewpoints of authors who have explored the relationship of language and identity. The goal is to highlight the complexity and many ways in which the relationship of language and identity can be researched, examined, and understood. Language can be the means to a shared experience and thus a shared identity. It can be the means by which a person expresses and negotiates his own identity, and it can be symbolic of one's group or personal identity. These researchers particularly focus on the relationship of ethnicity and language but do not address how the concept of race might relate to language and identity. This omission may be related how race and ethnicity are commonly understood. Race tends to be viewed as a way of categorizing people according to physical features, their biological genes, and their hereditary ancestors (Spickard, 1992). Ethnicity, however, tends to be defined on the basis of objective characteristics such as national origin, language, culture, religion, geographic boundaries and is often seen as a focal point of identity (Liebkind, 1999). Phinney (1990) suggests that ethnic identity might include aspects of social identity, sense of shared values and attitudes, behaviors, and feelings of belonging and commitment. It is rare for the concept of race to be associated with aspects of language because race is not based upon criteria such as social behavior or cultural knowledge but according to physical appearance and ancestry. Yet, the study of ethnic identity is considered to be related to aspects of social behavior and in the ways that a person communicates and interacts with others who may be similar and dissimilar to whom they are. Therefore, language as the basic means for communicating with and transmitting ideas, values, and knowledge to other human beings is an important component to the inquiry into ethnicity and ethnic identity. Nonetheless, perspectives on the relationship of language and ethnic identity are valuable because multiracial individuals are most likely multiethnic as well.

### *Heller's view of Language and Ethnicity*

Heller (1987) argues that the basis of ethnicity is located in the networks of relationships that individuals form and in the daily activities of a person. In her view, ethnicity is a social construct and in order to examine how ethnic identity develops, she maintains that it is necessary to investigate social interaction, which in turn is the process whereby people communicate these constructs with one another. She states:

Language is important here as a means by which access to networks is regulated: If you do not speak the right language, you do not have access to forming relationships with certain people, or to participate in certain activities. Beyond this basic principle, there is the consequence of continuous interaction over time within social networks: shared experience, shared knowledge, shared ways of looking at the world, and shared ways of talking. Shared language is basic to shared identity, but more than that, identity rests on shared ways of using language that reflect common patterns of thinking and behaving, or shared culture (181).

From this perspective, language is a significant component to establish social relationships with other people. If a person does know how to communicate in a certain language, this means that they will not be able to interact with members of this group, nor will they have access to the shared knowledge, common worldview, nor will be able to learn how to behave and speak as a member of this group. If a multiracial individual does not learn the language of one of their ethnic heritages, this probably means that they will not be able to participate in the activities or interactions of the group, therefore they will most likely not be able to fit in as a member of the ethnic group. Not knowing a language may further cause a multiracial person to feel distant and not belong to one of their social groups to which they feel an affinity. This opinion might be a strong position to take on the relationship of language and identity, yet it seems well founded because Heller argues that the basis of a shared identity is a shared language, which serves as the means to express and represent mutually shared ways of thinking or behaving. How much language an individual needs to know to be able to communicate with a group to thus share an identity is a question that should be posed to test the strength of this argument. Nonetheless, Heller's perspective on the relationship between language and identity is vital to consider because it recognizes language as a central component to communication, interactions, and social relationships. Lacking sufficient capabilities in a language would likely mean that a person loses the opportunities to access social relationships with an ethnic group or community, and thus would be denied the right to share an identity and cultural perspective with that ethnic group of people.

#### *Myers-Scotton's view of Language and Ethnicity*

Myers-Scotton (1991) maintains that codeswitching is the selection of two or more linguistic varieties in the same conversation. From her perspective codeswitching can

be seen as a form of ethnic expression. Her findings and discussions derive from studying conversations and examples of codeswitching among multilingual and multiethnic individuals in Kenya. She argues that because Africa is multiethnic in context, there is tension between the public and private expressions of the self. Individuals in these settings code-switch to negotiate and express their ethnic identities. Code choice is indexical and an on-going process of negotiation that depends on the participants involved. Speakers weigh the possible costs and rewards for making one language choice over another. Myers-Scotton describes various forms of codeswitching such as, non-marked, marked, 'permissible' marked, and 'exclusive' marked types. Shared ethnicity encourages the use of ethnic language in a public space. She suggests a marked switch to an ethnic language is a negotiation to decrease or increase the social distance between two or more speakers. The use of an unmarked language, such as a common lingua franca in that society or region neutralizes the relevance of ethnicity and can bring people closer or move them further apart as well. From this perspective codeswitching and the use of more than one language in a single conversational interaction can be seen as a way to negotiate a person's identity and social relationships. This can be important to consider in light of multiracial individuals' experiences. The choice of using a certain language or not using the language in a particular situation can be an expression of a person's identity in order to gain acceptance by increasing or decreasing the social distance between oneself and speakers from other ethnic groups. Language can be utilized to initiate inclusion or a sense of unity but can also be employed to exclude people as well. By codeswitching to the ethnic language of a particular person or group, a multiracial individual with bilingual or multilingual capabilities maybe able to promote awareness in those to whom they are communicating that they are someone who can speak their language and thus illustrate they are someone who is similar to the speaker and or is a member of the same ethnic group. However, it is important to note that codeswitching is also a process of negotiation and thus cannot be successful unless the person with whom the individual interacts is willing to accept the speaker's assertion of his or her identity. Nevertheless, an individual who can codeswitch or negotiate what language to speak in a conversation has a certain degree of power to assert who he is and can express the identity in contrast to an automatic categorization of an individual's ethnic identity by others according to how he or she physically appears or is socially perceived.

## **Factors Involved in Multiracial and Multiethnic Identity Development**

For many years, scholars in various disciplines, such as philosophy, psychology, political science, sociology, anthropology and education, have explored the concept of identity and the self. The concept has been examined and studied from varied perspectives, producing a range of ideas and questions concerning how a person defines him or herself, whether or not identity is static or dynamic, and how identity relates to the group and other beings. Stephan (1992) maintains, “[i]dentities are meanings that the self acquires through social interaction, and as such are crucial to an understanding of an individual’s sense of him or herself”(51). From this perspective, identity might be thought of the way that a person makes sense of him or herself in relation to other beings. A person defines who he or she is through social interaction with others, through how they are categorized and understood by others, and possibly through how much a person may or may not internalize the views of others. It is important to recognize that one’s social relationships and interactions with others, the extent to which an individual is affected by how others evaluate him, and how much a role that the perceptions, views, and categorization by the other people in a society play in how an individual of any background, whether of a single race or ethnic heritage or multiple heritages, comes to understand and value him or herself. Cooley (1998) proposes what is known as the “looking-glass self.” He suggests that an individual forms images of him or herself through the perceptions of others. In his view, an individual relies on the socially reflected images of his or herself to help determine who he or she is and to construct of sense of self esteem or pride. A person may receive mixed messages and be treated differentially by varying people in their social lives. In addition, the degree to which a person internalizes all the views in a uniform way is variable. The views of family members, peers, or other respectable figures may be more significant than views of people who are not as influential to an individual’s life. If people are highly influenced by the views of others, where these views are likely to be a mixture of both positive and negative, then this may also mean that an individual may not always have concise or clear understanding of who he or she is. Their own image and understanding of themselves will be a mixture of both positive and negative views about themselves. In the case of multiracial individuals, certain people may be supportive of their duality or complexity of cultural and racial heritages while others may question who they are, asking the person to justify their background because of their physical ambiguity, or may even devalue that person because he or she are not a “pure” member of the group. Views that will be internalized by the individual will vary according to

the environment or particular setting and, as the multiracial individual moves in and out of varying social contexts, he or she may be evaluated in multiple or ambivalent ways. This implies that a person may not have a concrete identity at any given moment because the individual might be influenced by the views of others in a particular setting or moment in time. Moreover, this may suggest that a person's identity may not be static and can develop over time.

The processes of identity formation for multiracial individuals is complex since factors such as the family, immediate social context, geographic location, the individual's physical appearance, the school and educational environment, a person's peers, the individual's language capabilities, gender, and social class are likely to influence how a multiracial person will identify him or herself racially, ethnically and culturally. These factors do not influence all biracial or multiracial people uniformly. Each individual is born to a set of unique conditions so it is extremely difficult to generalize and approximate how much of single or multiple factor will be critical to the individual. All of these factors are influential in the processes of identity formation of any individual regardless of whether they are multiracial or monoracial. Nonetheless, it is important to identify some of the factors that are significant to how a multiracial individual will self-identify and come to terms with the self.

### *Family*

The family of the biracial individual is significant to the individual because it is the primary environment in which they are enculturated in their first culture or cultures. The parents' specific ethnic and racial backgrounds can be important as well. The number of siblings, whether or not both parents are still married or together, and the existence of extended family will be influential to that person. The individual will learn and develop ways to utilize the cultural values and attitudes, knowledge or concepts, rituals, and language that is acquired in the socialization processes of the family. The language that one learns in childhood and throughout their lifetime will play a decisive role in who the individual can interact with, what kind of opportunities they can have access to, how the person will be judged by others because of their language, and how the biracial individual will identify him or herself culturally and ethnically.

Factors such as the class background and the immediate social context of the individual

are vital to consider as well. The social class of the multiracial individual and his or her family will determine where the family lives, what kind of races, cultures, and social groups they might interact with, and the types of social and educational opportunities available to them. Gender will be a factor influencing aspects of education, socialization, language use, sexuality, and the social roles of a person. The immediate social context will determine aspects of language, peer interaction, education, social and cultural values, and the concepts about race. Depending on where a person grows up, this will influence how a person will be socialized and how they may define who they are as a person.

Finally, the school and peer interaction will have a bearing on the processes of socialization, acquisition of cultural and academic knowledge, whom the individual interacts and associates with frequently, who the role models are, what language the individual will learn and use, and how knowledge and values about the concepts of race and ethnicity are affected. Although the family is not solely responsible in making decisions about an individual's life or their surrounding environment, parents do make choices to some degree where to live, how to raise their children, what language and culture they choose or not to pass on to their children, and what type of school the individual will attend. Consequently, the family is a crucial element that influences the development of identity and self-definition among multiracial and mixed heritage individuals.

### *Physical Appearance*

The physical appearance of a multiracial individual is a significant component of a person's identity. A person's internal view of how they think they physically appear may not necessarily match how others view them and categorize them. As individuals become aware of their perceived physical or superficial differences in comparison to those around them, it may lead to a sense of isolation or feelings of ambiguity about their group identity. Kich (1992) describes how the recognition and being identified as different can lead to certain types of feelings and experiences among mixed race individuals. Even among siblings within a single family, physical appearance can vary and this can be a source of mixed emotions. Siblings can feel close to one another and retain a strong sense of assurance because they may feel there is someone in the family that resembles who they are, who they look like, and who also like them, do not look like their parents or others in society. However, individuals can also have ambivalent feelings because they may feel that they look more like one of their parents or because

they may think that one of their brother or sisters look to be more of one race than the other, causing people around them to evaluate and treat members within a single family differentially.

### *Social Perceptions*

A multiracial person cannot completely choose an identity for him or herself. The identity of a person is negotiated through the interaction with others. Taylor (1994) provides us with insight into the process of identity formation in how an individual weaves together both the external opinions of others and the internal self. “We define our identity always in dialogue with, sometimes in struggle against, the things our significant others want to see in us...thus in discovering my own identity doesn’t mean that I work it out in isolation, but that I negotiate it through dialogue, partly overt, partly internal, with others.” (32-33).

### **Suggestions for Future Research**

Forthcoming research to construct a more holistic framework should further examine how a multiracial or multiethnic individual’s identity transforms over time and should consider from various angles and with different methodologies, how and to what extent language is significant in a multiracial or multiethnic person’s identity. It should also attempt to document specific cases of multiracial or multiethnic people where language is highly relevant and vital to their identities.

The author believes that the question of how language and identity interrelate is important to not only multiracial and multiethnic individuals, but to those who are multilingual, and multicultural, as well as to the members of educational institutions, social organizations, and companies in which they learn and work. The author is hopes this current framework and research in the future will not only address issues that are pertinent to multiracial and multiethnic individuals, but will also capture the experiences and issues relating to the role language and the development of identities of a much larger audience.

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*Integration of Inclusive Education Subject in the Curriculum of Pre-service Teachers  
towards Transformation: Exploring its Impact and Effectiveness*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

In response to the growing currency towards inclusion around the world, teacher education institutions have shifted into pedagogy of teacher training in line with inclusive education. Ensuring the competence of pre-service teachers to cater to the needs of increasing range of diverse learners has been a great responsibility of schools of teacher education. From the perspective of the 155 pre-service teachers as respondents, this study seeks to evaluate the impact of inclusive education subject, a one-semester course in the School of Teacher Education of Saint Louis University, Baguio City that offers training on inclusive education practices to the pre-service teachers in changing their viewpoints toward inclusion, in preparation to their professional career. The study also examines the effectiveness of the subject in terms of the five strands namely: year level offering, course objectives, course content, teaching strategies, and effectiveness of the instructor. Through the administration of a validated questionnaire, findings showed that the subject has left a great impact on the pre-service teachers in instilling positive perception specifically in responding to diversity and acceptance of different students. Moreover, the study has also discovered that the inclusive education subject is generally very effective across the five strands identified. The findings of this study are significant in the improvement of the curriculum and possible dissemination of inclusive education subject to other teacher education institutions in the country.

**Keywords:** pre-service teachers, perceptions, teacher education, inclusive education, preparation, attitudes, subject evaluation, teacher training, impact

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## Introduction

Inclusion of students with disabilities into mainstream schools is a worldwide trend. This philosophy has changed dramatically over the past two decades and several countries have led in the effort to implement policies which foster the integration and, more recently, inclusion of these students into mainstream environments. It has been featured highly in the educational priorities of many countries (Angelides, 2008) such as Philippines, India, USA, Canada, United Kingdom, and Australia as evidenced by their establishment of educational policies and legislations to promote inclusive practices (Sharma, Forlin, & Loreman, 2008). Here, although the movement of inclusive education has gained momentum in recent years, a key element in the successful implementation of the policy is views of the teachers who have the major responsibility for implementing it (Avramidis & Norwich, 2002). It is argued that teachers' beliefs and attitudes are critical in ensuring the success of inclusive practices since teachers' acceptance of the policy of inclusion is likely to affect their commitment to implementing it (Norwich, 1994). Inclusion requires commitment from a range of stakeholders including governments, teacher training institutions, schools, teachers, and the school community if it is to be successful. As we move towards an inclusive future, it is teacher training institutions that will become pivotal in ensuring that teachers have the appropriate attitudes and skills to further this agenda (Sharma, Forlin, Loreman, 2006).

Inclusive education is related to the effort of overcoming barriers that prevent the participation and learning of all children, regardless of their race, gender, social background, sexuality, disability or attainment in schools (Booth & Ainscow, 1998). Inclusive education does not only focus on the barriers that students face but also, as Booth and Ainscow (2002), cited by Angelides (2008) argue, focuses on the development of cultures, policies and practices in educational systems as well as in educational institutions in order for them to be able to respond to the diversity of their students and to treat them equally. With this, we should also take a giant look at the responsibility of teachers in creating an inclusive environment of meaningful learning. From the moment they entered their pre-service teacher education, to their workplaces later, these aspiring teachers must have enrolled and mastered the pedagogy of implementing inclusive education in their teaching, in their methodologies, and in their viewpoints. As early as in their pre-service career, they have to develop concern for children with disabilities, and change their negative attitudes into positive ones in order to eliminate the prejudicial aspects of a teacher towards these children. A big responsibility also lies in the shoulders of colleges and universities offering teacher education to properly train their pre-service teachers, their professional education teachers, and the review of the curriculum they have to offer to their students.

Simui (2009) as cited in the report by the European Agency for Development in Special Needs Education (2010) propounds that teacher education should be at the "center" of inclusive education reform hence, the need to see pre-service teacher education as a beginning in the long journey of inclusive education. He further argues that preparing teachers for inclusive education should include strategies aimed at transforming teachers' practices, which are largely influenced by their attitudes, beliefs, and values. According to Avramidis (2002), beginning teachers need not only the skills and knowledge base to be successful in inclusive education environments, but also need to develop positive attitudes and sentiments towards their work in this area in order to ensure inclusive future in their classrooms. He further added that inclusive education is not about training special educators for special children, but about getting teachers to challenge the way they conceptualize difference and educational failure.

According to Franzkowiak (2009), introductory courses on inclusive education should be mandatory for all teacher education students, that bachelor and masters courses should include inclusive education and combined degree programmes for primary and special education should be promoted. The collegiate career of these students is the big stepping stone to their future professional undertakings with inclusive education in their minds and hearts.

Several studies have investigated pre-service teachers' concerns about inclusive education (Loreman *et al.*, 2005; Bradshaw & Mundia, 2006; Subban & Sharma, 2006), their readiness for teaching diverse learners (Forlin *et al.*, 1999; Engelbrecht & Forlin, 1998; Forlin, 2001), and their attitudes towards inclusive educational practices (Carroll *et al.*, 2003; Sharma *et al.*, 2003; Loreman *et al.*, 2005; Subban & Sharma, 2005). There was also a study that has conducted research on the impact of training on the attitudes of pre-service teachers and their sentiments on students with disabilities (Sharma, Forlin, & Loreman, 2008).

Researches have however been conflicting. Some studies have suggested that teachers with more experience show less positive attitudes toward inclusion (Harvey, 1985; Forlin *et al.*, 1996), while other studies found that as teachers' experience with pupils with special educational needs or SEN increased so did their confidence (Leyser *et al.*, 1994; LeRoy & Simpson, 1996). Studies of both pre-service and in-service teachers have also shown that attitudes can be influenced by the type of preparation they received (Wilczenski, 1993; Avramidis *et al.*, 2000). The importance of training in helping to form positive attitudes towards inclusion has been further supported by research suggesting that teachers who had specific training to teach students with learning difficulties expressed more positive attitudes towards inclusion as compared to those who had not (Shimman, 1990; Beh-Pajooah, 1992). Beare (1985), however, cautions that attitudes once set are in fact very difficult to change and that it might therefore be more effective to focus closely on the preparation of pre-service teachers. The suggestion is that if student teachers complete their pre-service education without having developed positive attitudes towards inclusion this will adversely affect the successful accommodation of learners with special educational needs into mainstream settings (Tait & Purdie, 2000). Blair (1983) concluded that improved provision at pre-service together with a more aggressive approach towards training for inclusion-based practices would be the best point to begin in teacher education. Lambe and Bones (2006) found that positive attitudes did exist in student teachers at the start of their pre-service training, concluding that this stage of teacher education was the most affective time to nurture these attitudes by the provision of high quality training. If attitudes can be formed by the quality of pre-service provision, then it seems reasonable to conclude that the school-based placement experience may be a key time when attitudes towards inclusion may be influenced.

However, there has been no study yet that has researched on the impact of the inclusion of inclusive education subject in changing the viewpoints and perceptions of pre-service teachers and eliminating their barriers toward inclusion.

In the Philippines, only Saint Louis University's School of Teacher Education (SLU-STE) in Baguio City offers a great deal on inclusive education implementation in its curriculum, with a 3-unit subject about it entitled "Inclusive Education" for pre-service teachers. This subject is offered since 2002 in the second semester of the first year level. Facilitated by a professional educator, the subject mainly focuses on the principle of inclusive education, accepting and valuing differences, understanding disabilities, and ending all forms of discrimination in a school setting. This study seeks to address this by considering the impact

of teacher education focusing specifically on offering an Inclusive Education subject to pre-service teachers to work in inclusive regular classrooms and their attitudes and concerns about inclusive educational practices.

This study shall attempt to find out whether pre- service teachers, specifically the fourth year practicumers of the School of Teacher Education (STE) of Saint Louis University in the City of Baguio were greatly impacted by the Inclusive Education approach they received from their pre- service education in their field observations, practicum, or field studies. The study seeks to answer the following questions: what is the impact of the subject Inclusive Education in affecting the viewpoints and perceptions of pre- service teachers toward inclusion and embracing students with disabilities? How effective is the subject – Inclusive Education- in terms of the appropriateness of the year level offering, course objectives, course content, course teaching strategies, and effectiveness of the instructor in the developing inclusive orientation to these pre- service teachers? The findings of the study shall help the administrators of teacher education institutions to effectively design a curriculum in lined with meeting the trend of inclusive education.

## **Methods**

### *Subjects and setting*

The researchers chose the fourth year teacher education students who are already having their practicum or on- the- job training as the subjects of the study. These students were taken regardless of their specialization, whether they are majoring in English, Mathematics, Biological Sciences, Physical Sciences, Social Studies, MAPEH, General Education, Special Education, Filipino, and Pre- School.

All of the 155 fourth year practicum student of STE in the second semester of SY 2011-2012 were taken as respondents for the study. However, out of 155 fourth year practicumers, the retrieval of data was gathered only from 142 respondents.

### *Instrumentation and data collection procedure*

Data collection and analysis followed quantitative research methods. The main tool used in this study is a questionnaire divided into two parts, both of which are to be answered in a four-scale basis. The first part is a 22- item set of statements about the impact of Inclusive Education subject (Educ 101) in affecting the viewpoints and perceptions of pre- service teachers toward inclusion, based on a literature review made by the European Agency for Development in Special Needs Education (2010). The second part of the questionnaire is a 65-item set of phrases and statements about the effectiveness of the subject in terms of five strands: year level offering, course objectives, course content, course teaching strategies, and effectiveness of the instructor. Such part is based on the syllabus of the subject secured from the Professional Education Department.

Prior to the administration of questionnaires, the questionnaire was validated through a reliability test using Cronbach's alpha coefficient.

The testing was conducted to 33 pre-service teachers and resulted to the following reliability coefficients:

Area / Aspect	Reliability Coefficient
Impact of Inclusive Education Subject	0.9584
Effectiveness of the Subject	0.9684

Formal permission to conduct the testing of reliability of the questionnaire and the final administration was obtained from the School Dean and the head of the Professional Education Department and from the respondents, themselves. Having in mind the busy schedule of the respondents, the researchers have intently scheduled the administration of questionnaires in their classroom where their subject, "*The Teaching Profession*", is scheduled. The said subject is the only campus- based course practicumers are taking aside from the 12- unit practice teaching, as per required by the curriculum.

### *Data analysis*

The responses were averaged from obtaining the mean of the answers of the respondents in every question or statement. The mean values were interpreted according to the table presented below.

For problem number 1:

Rating	Range or Interval	Interpretation
1	1.00 – 1.74	Has no impact at all (NI)
2	1.75 – 2.49	Has a slight impact (SI)
3	2.50 – 3.24	Has a fair Impact (FI)
4	3.25 – 4.00	Has a great impact (GI)

For problem number 2:

Rating	Range or Interval	Interpretation
1	1.00 – 1.74	Not Effective (NE)
2	1.75 – 2.49	Slightly Effective (SE)
3	2.50 – 3.24	Effective (E)
4	3.25 – 4.00	Very Effective (VE)

After the interpretation of the mean values, the statements were ranked to determine which characteristics of the inclusive education subject are perceived to have great impact on the pre-service teachers and which are perceived to be very effective. The most striking top and bottom statements were analyzed based on the factors existing in the teacher education training in the school. Results were also corroborated with other researches which either supported or negated the claims of the researchers. Furthermore, the data were presented in a tabular form where the mean, interpretation, and rank are shown clearly.

## Findings and Discussion

### *Impact of inclusive education subject in affecting the viewpoints and perceptions of pre-service teachers toward inclusion*

Preparing teachers for regular class teaching has undergone a major pedagogical shift in recent years. Training institutions are now required to ensure that pre-service teachers are competent to cater for the needs of an increasing range of diverse learners. This move has been furthered by international recommendations (now more than 12 years old) from UNESCO to include content on inclusion as part of teacher training programs (UNESCO, 1994). In preparing teachers for inclusive classrooms their attitudes, beliefs, expectations and acceptance of people with diverse needs may well be challenged (Sharma, Forlin, Loreman, Earle 2006). Table 1 presents the data of the impact of Inclusive Education subject as perceived by the pre- service teachers.

As gleaned from the table, the pre-service teachers perceived Inclusive Education subject to have a great impact on their viewpoint and perception. Specifically, the pre-service teacher respondents perceived Inclusive Education subject to have taught them to accept all kinds of students leading to a positive perspective toward inclusion as well as to accept not only students with disabilities but also students with different nationalities, ethnicity, race, color, and languages. These statements obtained the highest weighted mean value of 3.58 (both having a rank of 1.5) and it correspondingly implies that inclusive education subject has a great impact on the pre-service teacher respondent's views on these areas.

These statements show that the subject was successful in instilling positive perception of pre-service teachers toward acceptance to diversity. That is, the subject focused on responding to the challenges posed by the highly diverse world people are living in today. Such perception to acceptance of diversity also leads to a positive implication towards globalization and embracing the diverse world today. Pre-service teachers accept inclusion globally, in all aspects of identity, how the world is bridged by inclusion and how it has slowly becoming a global village through the context of inclusion. Acceptance of pre-service teachers to diversity involves the idea of social tolerance or the willingness to treat anybody as a welcomed member of a group or circle, within the atmosphere of respect, fairness, and equity.

*Table 1. The Impact of Inclusive Education Subject in Affecting Viewpoints and Perceptions of Pre-Service Teachers toward Inclusion*

<b>Statements</b>	<b>WM</b>	<b>I</b>	<b>Rank</b>
1. <i>Inclusive education subject influenced me to feel sympathetic towards people from diverse backgrounds and has changed my philosophy to deal with them.</i>	3.48	GI	11.5
2. <i>The subject has imparted to me certain knowledge and understanding about the needs of different learners, teaching techniques and curriculum strategies.</i>	3.51	GI	7.5
3. <i>The subject taught me to accept all kinds of students and such will lead to a positive perspective toward inclusion.</i>	3.58	GI	1.5

4. <i>The subject has helped me in eliminating barriers towards accepting and embracing inclusion.</i>	3.48	GI	11.5
5. <i>The subject has taught me to accept not only students with disabilities but also students with different nationalities, ethnicity, race, color, and languages.</i>	3.58	GI	1.5
6. <i>The subject has taught me that there's no such thing as "different", only "unique".</i>	3.54	GI	4.5
7. <i>The subject has taught me to think multiculturally, and be socio-culturally conscious.</i>	3.46	GI	15
8. <i>The subject has instilled to me that equality will end all forms of discrimination in this world.</i>	3.47	GI	14
9. <i>The subject has taught me that there is no inferiority, no superiority, no majority, and no minority in this world.</i>	3.40	GI	20
10. <i>The subject has taught me that the basic knowledge on principles and essence of inclusion will lead to peaceful understanding not only in the classroom but also in the society as a whole.</i>	3.43	GI	17
11. <i>The subject compelled me to respect all kinds of people and learners and so as their opinions and differences.</i>	3.54	GI	4.5
12. <i>The subject has helped me to be able to manage an inclusive classroom including planning for teaching and learning, maximizing available resources, managing group works and cooperative learning and assessing children's learning.</i>	3.36	GI	21
13. <i>The subject has also changed my negative perception into manifesting positive behavior and attitudes towards children from diverse backgrounds and other learners who are marginalized.</i>	3.48	GI	11.5
14. <i>The subject has influenced me to recognize and appreciate human diversity and examine one's own beliefs and attitude related to individuals with disabilities or impairments.</i>	3.51	GI	7.5
15. <i>The subject has communicated to me that it is the knowledge, beliefs, and values of the teacher that are brought to bear in creating an effective learning environment for pupils, making the teacher a critical influence in education for inclusion and the development of the inclusive school.</i>	3.49	GI	9
16. <i>The subject taught me the educational justification of inclusion that is inclusive</i>	3.43	GI	17

<i>schools have to develop ways of teaching that respond to individual differences and benefit all children.</i>			
<i>17. It has also taught me the social justification of inclusion that is inclusive schools are able to change attitudes towards diversity and from the basis for a just, non-discriminatory society.</i>	3.43	GI	17
<i>18. It has also inculcated to me the economic justification of inclusion that is it costs less to establish and maintain schools that educate all children together than to set up a complex system of different schools 'specializing' in different groups of children.</i>	3.32	GI	22
<i>19. The subject has also taught me that inclusion concerns issues of gender, ethnicity, class, social conditions, health and human rights encompassing universal involvement, access, participation and achievement.</i>	3.48	GI	11.5
<i>20. The subject has also instilled in me that inclusion may be understood not just as adding on to existing structures, but as a process of transforming societies, communities, and institutions such as schools to become diversity-sensitive.</i>	3.42	GI	19
<i>21. It has also taught me that upon entering this profession, I should understand how I might create classrooms and schools that address issues of respect, fairness, and equity.</i>	3.56	GI	3
<i>22. The subject has also taught me to understand the historical, socio-cultural and ideological contexts that create discriminatory and oppressive practices such as isolation and rejection of disabled students, gender discrimination, poverty, and racism in education.</i>	3.53	GI	6
<b>Overall Weighted Mean</b>	<b>3.48</b>	<b>GI</b>	

The pre-service teacher respondents also perceived inclusive education subject to have a great impact where it taught them that upon entering the profession, they should understand know how they might create classrooms and schools that address issues of respect, fairness, and equity. This statement or item obtained a weighted mean of 3.56, which is third in rank, indicating that the subject has a great impact on this regard. As such, the subject has given them a bird's eye view on how to create learning atmosphere where distinct fairness, respect, and equity are ambient. This statement affirms that aspiring educators are now capable of creating such classrooms because the subject has instilled the importance of such inclusive classroom. This is also related to understanding on the responsibilities of a 21<sup>st</sup> century teacher that is to produce learner-friendly classrooms at an inclusive pace.

Looking further at the resulting statements, acceptance and humanness to cultural diversity are two important factors to consider. These two can be manifested by a positive attitude toward cultural relativism. This is because the subject has opened their minds into embracing

diverse audience that lead to a positive perception toward cultural relativism, and setting aside their prejudice and discrimination tendencies before they may advance. The subject has generally taught them the concept of cultural relativism, which encloses that culture is relative and one cannot compare the culture of another to their own. This is true to the respondents because the study is conducted in Baguio City, which is also one of the melting pots of different cultures in the Philippines. Basically, the pre-service teachers have developed the sociocultural consciousness within their systems, which will subsequently give backdrop to the acceptance and respect between the teacher and the students.

This is related to Banks' (1996), as mentioned by Villegas & Lucas (2002), sociocultural consciousness on understanding people's ways of thinking, behaving, and being that is deeply influenced by such factors as race/ ethnicity, social class, and language. Without this insight, teachers are unable to cross the sociocultural boundaries that separate too many of them from their students.

Moreover, these pre-service teachers gained inclusive values that are necessary in responding to issues in their future profession. Inclusive values are concerned with issues of equality, rights, participation, learning, community, respect for diversity, trust and sustainability, compassion, honesty, courage and joy (Booth & Dyssegaard, 2008). Seeing values as 'fundamental guides and prompts to moral action', Booth and Dyssegaard (2008) state that in education, an understanding of the values which give rise to our actions is essential if students 'do the right thing'.

Ferreira and Graça (2006) recommend that, to take full account of the diversity of the current school population, the following aspects should be included in teacher education: learning difficulties and disabilities; emotional and behavioural problems; communication techniques and technologies; symbolic representation, signification and multiculturalism; different curricula; teaching methods and techniques and educational relationships. To ensure culturally responsive teaching, Gay and Kirkland (2003) say that teacher education must include critical cultural self-reflection that takes place in a context of guided practice in realistic situations and with authentic examples.

Regarding multi-cultural education, Winch-Dummett (2006) identifies, in addition to lesson organisation and outcomes, teaching strategies and teacher communication the need for 'cultural inclusion' that includes acknowledging culturally specific activities and beliefs, promoting values and an ethos of respect for cultural diversity.

Moreover, as gleaned from the results, pre-service teacher respondents have shown the least impact on the statement that the subject has inculcated to them the economic justification of inclusion with a mean of 3.32 and ranked at 22, with discretionary great impact. This means that pre-service teachers perceive less that establishing and maintaining schools that educate all children together costs less than setting up a complex system of different schools 'specializing' in different groups of children. The respondents have also perceived less that the subject has helped them able to manage an inclusive classroom including planning for teaching and learning, maximizing available resources, managing group works and cooperative learning and assessing children's learning as indicated by the rank of 21 and mean of 3.36, still has great impact. And finally, as shown in the mean of 3.40, pre-service teachers also remarked less that the subject has taught them that there is no inferiority, no superiority, no majority, and no minority in this world. It landed on a rank of 20. All three

were interpreted as having great impact but were perceived as least in ranks according to their perception.

Analyzing further the statements, they reveal that the subject inclusive education did not focus more on the implication of inclusion in the school administration and managing strategies in the classroom at an inclusive pacing. Rather, it has generally left a great impact on the affective side of the student teachers over the need to reorganize inclusive education management which they believe is only secondary. Student teachers perceive that inclusive education cannot maintain the idea of mainstreaming all kinds of children and learners because of the difficulty of classroom management of such institutions. Skillful teachers in inclusive practices are needed in such schools where all children are generally accepted and socially mingling with each other. It is still deemed challenging for 21<sup>st</sup> century teachers to manage inclusive classrooms such that the teacher still faces difficulty in planning for teaching, learning, maximizing available resources, managing group works and cooperative learning, and assessing children's learning in a classroom where all types of children meet and clash. Pre-service teachers perceive the readiness of the school administration and teachers of today as moot to actually implement and stand the test of inclusive education. This also implies lacking of proper training into mainstreaming and inclusive practices.

Inclusion was seen as being important for social integration and building self-esteem, upholding human rights and promoting better understanding of diversity. The students had also, however, expressed uncertainty as to how inclusion would work in practice. As with many experienced teachers, the students perceived difficulties in coping with large classes and in managing resources effectively, and expressed a general concern about professional competency. By the end of the pre-service year, although the students claimed to have improved personal efficacy, many of their anxieties remained. While purporting support for inclusive education, many students had tempered this with practical concerns that ran alongside a continued attachment to the current system of academic selection with which they were familiar (Lambe & Bones, 2008).

In a related study conducted by Brownlee and Carrington (2000), it was found out that in general, pre-service teachers believed that the teacher education course needs to include more practical knowledge and more practical experience about inclusive schooling. Such training is needed to be incorporated in the course to facilitate readiness and preparation of pre-service teachers toward inclusive education. Further, according to Lambe and Bones (2008), that for student teachers, positive attitudes towards inclusion were only one factor in ensuring its successful implementation. Reviews and reports on practice will be largely ineffective unless they can impact directly on other key factors, such as the organization of schools, and on teacher education. Attitudes towards inclusion and inclusive practices may be positively affected by consideration of resources and class size, and the provision of the same level of classroom support for learners in mainstream classrooms that the student teachers found available in their special school placements.

Pre-service teachers tend to depend more on what they are currently learning in their teacher preparation programs because their experiences are still rather limited (Burke & Sutherland, 2005). There is a need to combine experience with updated knowledge. Schools should try not only to expose all of their teachers to students with disabilities but also to provide sufficient training. By doing so, teachers might see more positive effects of students with disabilities being included into the regular classroom. Research indicates that those

experiences will have a positive effect on the teachers' attitudes causing them to be more willing to participate in the inclusive movement.

Pre-service teachers also reveal that the subject did not greatly eliminate the concepts associated to diversity which are inferiority, superiority, majority, and minority. These four concepts were deemed necessarily be eliminated in the perspective or viewpoint of pre-service teachers because of the barriers they pose to acceptance and inclusion as a whole. That means inclusive education was perceived as not responsive to this phenomena and the corresponding principles of global acceptance or it might not be in the priority list of the subject.

In summary, inclusive education is perceived as having great impact in affecting the viewpoints and perceptions of pre-service teachers toward inclusion particularly in their affective side. This is indicated by the computed overall weighted mean of 3.48 which is correspondingly interpreted as "has a great impact". That is, the subject has left favorable or satisfactory impression to the pre-service teachers in terms of their viewpoints and perception. Moreover, the subject is effective in instilling positive attitudes to pre-service teachers particularly in accepting and responding to diversity.

Lancaster and Bain (2007) agree that in general, there is a positive change in attitudes after undertaking an inclusive / special education unit of study and this is the case across a number of contexts and countries (Ching et al., 2007; Kyriakou et al., 2007).

*Effectiveness of the Inclusive Education subject in terms of different strands as perceived by the pre- service teachers*

Besides evaluating the impact of inclusive education subject, it is also important to evaluate the effectiveness of the subject in terms of meeting the pre-identified strands such as: year level offering, course objectives, course content, course teaching strategies, and effectiveness of the instructor. It is very important to evaluate this kind of program such as inclusive education subject to pre-service teachers because of the underlying responsibility of teacher training institutions to offer quality teacher education programs in order to produce competent and responsive teachers of the future. An inclusive education subject being offered to pre-service teachers is unique to Saint Louis University and that it needs evaluation for its improvement or possible dissemination to other universities with pre- service teacher training institution.

*Appropriateness of the year level offering.* The first strand to be evaluated is the appropriateness of the year level offering of the subject. It must be noted that the year level offering of a certain subject is one factor for the successful implementation and training for the students. Having the nature of the subject in mind, the maturity and preparedness of the student teachers must be taken into consideration. Table 2 presents the data on the perception of pre-service teachers to the appropriateness of the year level offering of the inclusive education subject.

As analyzed from the table, respondents have perceived that the subject has encouraged them to pursue the course as it zoomed to first in ranking with a mean of 3.34, very effective. Such result implies that the subject has instilled to the aspiring teachers in STE the essence of teaching and imparting knowledge to all walks of life. This can be explained on the account that the subject is enticing in helping them find themselves in the images of professional

teachers in the future. Furthermore, they also perceive the offering of the subject as very effective in serving as a fundamental foundation of teacher education training for aspiring teachers, as it ranked in second with a mean of 3.33. This can be consistent with the result of the top- ranking statement. These two results present the importance of primacy of inclusive education subject over foundations of teaching subjects because it encompasses the basics of accepting the profession in its nature and challenges.

*Table 2. Effectiveness of the Subject according to Year Level Offering as Perceived by the Pre- service Teachers*

<b>Year Level Offering</b>	<b>WM</b>	<b>I</b>	<b>Rank</b>
1. <i>The subject has greatly affected my viewpoint in teaching, immediately after high school because the subject was offered in the first year level.</i>	3.28	VE	4
2. <i>The subject's offering in the first year level served as a fundamental foundation of teacher education training for aspiring teachers.</i>	3.33	VE	2
3. <i>The offering of the subject in the first year level has opened my mind to the principle of inclusion and apply this to higher courses in education.</i>	3.30	VE	3
4. <i>Being the first ever professional subject to be taken in college, Educ 101 (Inclusive Education) has encouraged me to pursue the course through instilling the essence of teaching and imparting knowledge to all walks of life.</i>	3.34	VE	1
5. <i>The subject's offering in the first year level has developed my early love for this profession.</i>	3.14	E	5
<b>Overall Weighted Mean</b>	<b>3.28</b>	<b>VE</b>	

Inclusive education subject being offered in the first year level is essential to the pre-service teachers because of the role of the subject in bridging their differences with each other. The subject has helped them become prepared and responsive in catering the needs of their society. It is necessary for these pre-service teachers to develop and learn inclusive practices in preparation for the future professional undertaking.

The results confirmed Angelides' (2008) study that the student teachers seem to have developed some inclusive practices. The classes they took at university seem to have steered them in this direction. In some instances they seemed to undertake leading roles among the teachers of the schools regarding the promotion of inclusive education. According to Nes (2000), the way in which teachers are trained in their initial education seems to have a serious role to play in the development of inclusive practices in the schools they will work at in future. In addition, Haug (2003) argues that if student teachers develop inclusive practices at university, these will then be transferred later to their practice as teachers.

Second to the last in rank is on the perception that the subject has affected their viewpoint in teaching, immediately after high school because of the offering in the first year level, with a mean of 3.28, still very effective. In contrast, these respondents have inconsistently perceived the offering of the subject in the first year level as just 'effective' with a weighted mean of 3.14 and correspondingly the last in rank. These least two statements mean that the offering in the first year level is not really that contributory to the development of a positive viewpoint in teaching rather it just serves as a transition to an endeavor of deeper professional

education subjects in the higher years. The nature of the subject itself eclipses the capability of the subject to develop early love for the profession. Inclusive education therefore is not equated to teaching motivation because of the disparity of inclusive approach and teaching profession.

The subject's year level offering in the first year level has been relatively rated not suitable considering the weight and importance of the subject. However, it still depends on how the students perceive it between positive and negative according to how they really intend to pursue teaching profession, and according to how they define such purpose. The result supports this claim such that the subject has been seen in two different ways. One is that the subject has helped them realize the essence of pursuing the profession, yet it doesn't necessarily mean developing early love for the profession since it is premature to say that one has fallen in love in a profession in the freshman stage. Moreover, the subject's offering to the first year level can also be friendly to pre-service teachers because of the fact that the subject builds the necessary foundation for moving up to higher courses of professional education.

The results of the table shows that the appropriateness of the year level offering has been seen and perceived by the pre-service teacher respondents as very effective, in general, as indicated by the overall weighted mean of 3.28. This means that the subject's offering in the first year level is rated appropriate in changing viewpoints of pre-service teachers toward developing positive attitudes on inclusion. It is very effective in establishing primary foundation for aspiring professional teachers to pursue teaching and not to be confused with environmental dictation and peer pressure, as some of the current trend presents.

*Course objectives.* The course objectives are also evaluated to see if these were met by the subject as perceived by the pre-service teachers. It is important to evaluate these because objectives serve as the guide of the instructors in delivering the said subject.

Table 3 presents the effectiveness of the subject in terms of the course objectives as perceived by the pre- service teachers.

*Table 3. Effectiveness of the Subject in Terms of the Course Objectives as Perceived by the Pre- service teachers*

<b>Course Objectives</b>	<b>WM</b>	<b>I</b>	<b>Rank</b>
<i>Cognitive</i>	3.35	VE	5
<i>Affective</i>	3.52	VE	1
<i>Psychomotor</i>	3.41	VE	4
<i>NCBTS – Based Objectives</i>	3.44	VE	2
<i>21<sup>st</sup> Century Skills-Based Objectives</i>	3.43	VE	3
<b>Over-all weighted mean</b>	<b>3.43</b>	<b>VE</b>	

As seen in the result, the pre-service teachers remark the affective objectives as the most effective among the five general objectives of the course. The affective objectives obtained a mean of 3.52, and have the highest in rank as very effective. This means that the subject primarily gave importance in identifying, understanding, and addressing how people learn and that the pre- service teachers perceive the significance of the subject in touching their emotions and instigating attachments with a degree of acceptance or rejection. This implies that the pre-service teachers have manifested positive behavior and attitude towards children with special learning needs and other learners who are marginalized. They have also recognized and appreciated human diversity and examine one's own belief and attitude

related to individuals with disabilities. This result represents the basic nature of the subject, which is responding to diversity and embracing inclusion, which is consistent to the first problem that the subject taught the pre- service teachers the value of accepting diversity and have positive attitudes toward inclusion.

Examining further the result, the National Competency Based Teacher Standards- Based objectives ranked second in the 'very effective' thread of the result. It has obtained a mean of 3.44 which implies that pre- service teachers have realized the importance of the domains in the framework of competent teachers in the future. This is parallel with the affective domain because this objective defines the teaching competency of the pre- service teacher and how will he/ she deal with the affection and recognition of learners' diversity and differences. This also implies that the subject has not only instilled appreciation and affection to diversity but also taught the pre- service teachers on devising learning activities, teaching methods, instructional materials, or resources appropriate to the learners aligned with the objectives of the lesson. The subject has instilled concern on holistic development of diverse learners by planning varied activities that will cater to their needs.

Probing more the result of this strand, it came out that the cognitive objectives made it to the last rank with a mean of 3.35, at least very effective. This shows that the nature of the subject defines itself more in the affective orientation and accepting diversity over the theoretical and conceptual understanding of what inclusive education is. The result affirms the fact that the pre- service teachers have preference on manifesting positive behavior than possessing basic knowledge and understanding with theories and concepts. Indeed, meeting cognitive objectives is only secondary to the innate feeling of emotion attached to responding to diversity.

The result indeed confirms with Molina (2006) that the evidence to demonstrate that theoretical classes and reading are not sufficient to modify teachers' and students' negative attitudes towards pupils with special educational needs.

In summary, the course objectives were met and were evaluated by pre- service teachers as very effective with an over-all weighted mean of 3.43. The inclusive education subject has met the five objectives effectively with a preconception on the affective objectives since the nature of the subject is more on accepting and responding to diversity. Thus, the acquisition of knowledge and theories about inclusive education will serve only secondary. There is a clear disparity between molding an inclusive teacher and a teacher who knows inclusive education.

*Course content.* Course content consists of topics that concern to the completion of inclusive education. It is part of the evaluation to see if these are effective and functional in the career of the pre- service teachers. The course content is one of the factors that will tell if the subject molds and produces inclusive teachers in the future. The results of the perception of the pre-service teachers in the effectiveness of content are seen in table 4.

As revealed in the table, the topics on understanding the diverse educational needs of students with disabilities and facilitating acceptance and individual differences and friendships are found out to have the highest in ranking. These are supported by the mean value of 3.52 which both achieved a rank of 1.5, which means very effective. In addition, the topic on promoting communication and collaboration to inclusive settings is also a very effective course content in Inclusive Education with 3.51 as its mean, and a corresponding rank of 3.

The top three topics on inclusive education are perceived by the pre- service teachers as very effective and subsequently mean functional to their pre- service career.

*Table 4. Effectiveness of the Subject in Terms of Course Content as Perceived by the Pre-service Teachers*

<i>Course Content</i>	<i>WM</i>	<i>I</i>	<i>Rank</i>
<i>1. Introduction on content, objectives and rationale, structure, and major terms used in Inclusive Education.</i>	<i>3.38</i>	<i>VE</i>	<i>13</i>
<i>2. Benefits, elements, and principles of inclusion on education.</i>	<i>3.39</i>	<i>VE</i>	<i>11.5</i>
<i>3. Moving Policy Forward through developing inclusive education systems, challengers to policy makers, RA 7277, and ten reasons for inclusion.</i>	<i>3.35</i>	<i>VE</i>	<i>14.5</i>
<i>4. Barriers to learning.</i>	<i>3.27</i>	<i>VE</i>	<i>18</i>
<i>5. Responding to diversity through the nine golden rules of inclusion.</i>	<i>3.33</i>	<i>VE</i>	<i>16</i>
<i>6. Assessment in an inclusive classroom, purposes, individuals involved, and the components of a comprehensive assessment.</i>	<i>3.41</i>	<i>VE</i>	<i>9.5</i>
<i>7. Understanding the diverse educational needs of students with disabilities.</i>	<i>3.52</i>	<i>VE</i>	<i>1.5</i>
<i>8. 13 categories of children with special needs (IDEA)</i>	<i>3.39</i>	<i>VE</i>	<i>11.5</i>
<i>9. Factors to consider in determining and understanding the needs of culturally and linguistically diverse students.</i>	<i>3.41</i>	<i>VE</i>	<i>9.5</i>
<i>10. Promoting communication and collaboration.</i>	<i>3.51</i>	<i>VE</i>	<i>3</i>
<i>11. Facilitating acceptance and individual differences and friendships.</i>	<i>3.52</i>	<i>VE</i>	<i>1.5</i>
<i>12. Helping students make transitions to inclusive settings.</i>	<i>3.50</i>	<i>VE</i>	<i>4</i>
<i>13. Adapting large and small group instruction.</i>	<i>3.49</i>	<i>VE</i>	<i>5</i>
<i>14. Modifying instruction for diverse learners.</i>	<i>3.45</i>	<i>VE</i>	<i>7</i>
<i>15. Modifying reading, writing, spelling and handwriting.</i>	<i>3.35</i>	<i>VE</i>	<i>14.5</i>
<i>16. Modifying math, science, and social studies instruction.</i>	<i>3.30</i>	<i>VE</i>	<i>17</i>
<i>17. Modifying classroom behavior and classroom environment.</i>	<i>3.42</i>	<i>VE</i>	<i>8</i>
<i>18. Evaluating progress of students.</i>	<i>3.47</i>	<i>VE</i>	<i>6</i>
<i>Factor Mean</i>	<i>3.41</i>	<i>VE</i>	

Understanding the diverse educational needs of students with disabilities and facilitating acceptance and individual differences and friendships got the highest rank among the other topics in Inclusive Education. This shows that pre- service teachers are considering first what their students' characteristics are. Through knowing their students, teachers would eventually understand each attitude and behavior of their students. Teachers also would be able to use proper or different strategies and techniques to cater to the needs of each student. It would also lead to the acceptance of individual differences. The gap between the teacher- student and student- student would be changed to friendship if they will understand students' uniqueness. Combining these two factors which are the understanding and accepting of student, would promote communication and collaboration which consequently ranked third of the course content. The teaching- learning process would be successful because of exchanging of idea between teacher- student and student- student and vice versa.

An example of the importance of collaboration is about the collaborative problem-solving. According to some researches on collaboration specifically on collaborative problem-solving, students are asked to solve problem-solving whenever a physical, social or instructional exclusion of a student occurs. To create a climate of shared responsibility, students are encouraged to initiate the process themselves. During the session, the teacher leads the students through the steps of a structural process; identifying the issue, discussing all possible solutions, screen solutions, choosing and evaluating solution. Collaborative problem-solving (CPS) is judged to be an effective program to promote inclusion, and easy to implement according to the teaching staff (Salisbury, Evans and Palombaro, 1997), as cited by Meijer (2001).

Results also show that barriers to learning as a course content is very effective with a mean of 3.27 which is the lowest rank among the course content. Also, modifying Math, Science, and Social studies instruction of inclusion is very effective with a mean of 3.30 and a rank of 17. Finally, responding to diversity through the nine golden rules of inclusion is also one of the course contents that is very effective but still in the lower rank. It obtained 3.30 as its mean and has a rank of 16. These are three topics perceived by the pre-service teachers as least in ranking.

Barriers to learning got the lowest rank in the course content of Inclusive Education. This means that there are still difficulties for the pre-service teachers to remove the barriers amidst the challenge of inclusive education. The topic identified four barriers of learning, namely: systematic, societal, pedagogical and medical barriers. These barriers have not been well responded by the subject and that the pre-service teachers did not clearly understand how will these barriers be surpassed. Lack of examples of real scenarios is one of the reasons why this topic was not really perceived as effective relative to the other topics in inclusive education. This is due to the fact that the said topic was discussed in theory, not in practice.

Furthermore, the topic on modifying Math, Science, and Social Studies instruction is also where the pre-service teachers had a hard time in understanding. Pre-service teachers perceived this course content as difficult because of the fact that not all pre-service teachers are interested and are specializing in Math, Science and Social Studies. Other specializations such as Filipino, English, and MAPEH also pose diverse challenges to teachers in instruction and so must be dealt to be modified too. The modification of the instruction in Math, Science, and Social Studies is a topic that is not perceived as fit for all pre-service teachers because of the differences in their specializations.

Auxiliary to the least perceived topics is the topic on responding to diversity through the nine golden rules of inclusion. In the rules of inclusion, it includes how to maintain the integrity of the activity, keeping the goals of the activity/ program when making modifications, challenging all participants and encouraging participants to value differences. Pre-service teachers have that mindset that this course content could be effective in the subject but it is difficult to implement or apply. They would think of an activity that could challenge each individual to participate or collaborate with each other. Activity that would promote valuing differences the students have. To be able to do this, teachers themselves must show to their students that they are accepted and they belong to the learning.

Therefore, the course content on inclusive education subject is very effective with a computed overall mean of 3.41. This means that the subject's topics are indeed essential and functional to the training of pre-service teachers towards inclusion. The course content is

perceived by the pre-service teachers as functional and beneficial to their career. This implies that the course content contained topics that define inclusive education in schools and conveyed the salient concepts that an inclusive educator shall possess in the classroom. Specifically, the topic on acceptance of individual differences and understanding diversity were the top two topics that are effective in instilling inclusive orientation and molding inclusive teachers in the future.

*Course teaching strategies.* The course teaching strategies are also included in the evaluation to see if they're really effective in treating and delivering the course content. There must be parallelism and consistency with the two strands. Table 5 presents the perception of pre-service teachers regarding the effectiveness of the course teaching strategies.

*Table 5. Effectiveness of the Subject in Terms of Course Teaching Strategies as Perceived by the Pre- service teachers*

<b>Course Teaching Strategies</b>	<b>WM</b>	<b>I</b>	<b>Rank</b>
1. Lectures	3.34	VE	9.5
2. Sharing of educational practices	3.51	VE	1
3. Group dynamics	3.49	VE	2
4. Research	3.37	VE	7
5. Lecture and group discussions	3.47	VE	3
6. Film viewing	3.35	VE	8
7. Group report	3.34	VE	9.5
8. Online treasure hunt	3.11	E	12
9. Group presentation of differences in culture and language	3.45	VE	4
10. Simulations	3.43	VE	5
11. Invitation of guest speaker	3.28	VE	11
12. Lecture, discussion and presentation of plans and group demonstration	3.39	VE	6
<b>Overall Mean</b>	<b>3.38</b>	<b>VE</b>	

As gleaned from the table, the pre-service teacher respondents perceived that sharing of educational practices as the most effective teaching strategy in the subject, inclusive education. This is confirmed by the mean of 3.51 and the first in rank which is indicated as very effective. Sharing of educational practices involves every learner in the learning process which students become engaged/ involved in the interaction of one another. Sharing is one of the strategies that place a learner in an educational setting that can be beneficial for increasing their social opportunities. In this strategy student will share what they know and can learn from what had been shared by their co-learners, which this strategy is a two way learning process in which they will gain from each other. For the pre-service teachers, they believe that they learned a lot from sharing because of the nature or the basic framework of the subject, which is to accept differences and respond to diversity. Sharing elicits interactive and collaborative learning from the students and from the instructor. Through mutual sharing, the pre- service teachers' knowledge and experience are indirectly enhanced from the academic interaction.

Furthermore, pre-service teachers also perceived that group dynamics is a very effective teaching strategy as evidenced by the obtained mean of 3.49, ranked at second. Group dynamics is one pedagogical strategy that promotes participation and interaction. It fosters a deeper and more active learning process. Working together in groups also gives students the

opportunity to learn from and teach each other. Classroom research has shown that students often learn better from each other than they do from the teacher (Barkey et al., 2005) as cited by George Mason University (2010). Students in a group are responsible not only for learning material being taught in the class, but also for helping their groupmates learn. Looking back at the result, pre- service teachers tend to learn more through group dynamics because it allows student centred learning and gives autonomy and increased responsibility to the pre-service teachers. Group dynamics is very important in inclusive education because it represents diversity and inclusion in a classroom setting.

Moreover, pre-service teachers also perceived that lecture and group discussions were also very effective with a mean of 3.47 and correspondingly ranked at number 3. Lecture is one tool in teachers' arsenal of teaching methods; it is a key component to higher education. Lecture and group discussions, in which instructors can effectively employ lecturing and promotes student learning in which students use discussion to make connections between ideas and experiences and to reflect on a variety of meanings and interpretations of texts, experiences and phenomena. Lectures may be teacher centred yet the integration of group discussions will make the learning involving of pre-service teachers as active participants in the teaching-learning process. This strategy is parallel to the preceding results that group dynamics, discussions, and sharing of practices share common characteristics that are the involvement of pre- service teachers in the inclusive education teaching. Pre- service teachers perceive balanced learning interaction between the instructor and the students as very effective because of the capacity and power that each of which can offer.

As observed, the sharing of educational practices, group dynamics and lecture and group discussions being the top 3 of the effective teaching strategies in inclusive education promotes active learning in an educational setting. Active learning allows pre-service teachers to talk and listen, read, write and reflect as they approach course content through problem-solving exercises and other activities all of which require pre- service teachers to apply what they are learning (Meyers & Jones, 1993), as mentioned by Johnson (1999). It helps pre-service teachers become active, responsible and caring learners. They learn to interact successfully with each other and to transfer those skills to effective interactions in the society. Borich (1992) conveys that active learning promotes students' attention, increase on-task behaviour, and decrease incidence of negative behaviour (Johnson, 1999). Moreover, Freiberg and Driscoll (1992) relate that students who are actively involved and engaged in lesson learn better and faster than students who are instructionally inactive (Johnson, 1999). This finding only indicates that learner can learn more and prefers an educational setting that promotes an active learning process.

In contrast, the pre-service teachers professed that lectures and group reports as teaching strategies are less effective relative to the top ranking strategies. Both of which obtained a mean of 3.34, and both ranked at 9.5. This means that these two are too traditional for inclusive education which is a current trend. Lectures and group reports monopolize the discussion in a subject that is supposed to be interactive and democratic of sharing and group dynamics. Inclusive education subject doesn't rely on pure lectures and reporting but also authentic practices that will elicit positive perception on inclusion.

Moreover, pre-service teachers also perceived invitation of guest speaker as a less effective teaching strategy as evidenced by the mean of 3.28 and ranked at number 11. Invitation of guest speaker is used to enhance the material a teacher is covering (Mullins, 2001), as mentioned by George Mason University (2010). This strategy can only be used on subject that is only tangentially related to the course. Furthermore, this is not really possible

considering the availability of resource speakers in the country since inclusive education is just a recent development for the Philippines.

Lastly, online treasure hunt achieved the last in ranking of teaching strategies in inclusive education subject with a mean of 3.11 and is interpreted as 'effective' only. Online treasure hunts serve as a great way to hone student web searching ability and problem-solving. It involves providing students with a goal and then having them search the internet to fulfil the goal. Online treasure hunts are easy to create and the resulting interactive searches are both fun and informative for students. This strategy has quickly become one of the most popular tools for teaching students how to access the use the resources and information available on the internet. Although online treasure hunt is the most popular tool for teaching students, pre-service teachers still perceive it as inappropriate for the subject because the subject itself doesn't need online interaction but personal, face-to-face communication. Furthermore, this kind of strategy is only popular to few teachers. Other students do not prefer using online treasure hunt in a learning process because some do not know how to manipulate it and how it works. Others do not how to handle the computer either. Basically, online treasure hunt is not appropriate of inclusive education subject because the subject requires personal attachment and sharing of experiences more than integrating technology as only secondary. Inclusive education subject is not grounded on educational technology but on molding teachers to become accepting and responsive to diversity.

In summary, pre-service teachers perceive that Inclusive Education is very effective in terms of teaching strategies as confirmed by the over-all mean of 3.38. This affirms that the successful implementation of the subject in teacher training depends also largely on the teaching strategies to which the pre-service teachers are exposed with. The quality and the efficacy of the strategy to touch the lives of the pre-service teachers in developing positive attitudes toward inclusion are considered. Generally, those teaching strategies that elicit interaction and collaboration between instructor and students, and students with co-students were perceived to be the most effective strategies. Sharing, group dynamics, lecture and group discussion were all positively perceived by the pre-service teachers as consistent and appropriate in the subject inclusive education. However, pure lecture, group reporting, invitation of guest speaker, and online treasure hunt were gleaned less effective because these strategies initiates monopoly of knowledge without the active participation of the majority of pre-service teachers.

This is supported by Fox and Ysseldyke (1997), who said that the effectiveness of Inclusive Education depends largely on instructional variables; specifically teachers must show instructional flexibility and competence. Inclusive Education entangles fundamental instructional strategies which will cater to the needs of every student and essential considerations that allow teacher to maximize learning outcomes for all students. Inclusive Education teachers have the primary responsibility of providing instruction in classrooms that are characterized by extreme student diversity and in an inclusive setting. Inclusive instruction systematically varies the learning process, product, and content to match the unique learning profiles of individual students. Within an inclusive classroom, differentiated instruction may involve offering several options for what to learn, how to learn, and how to demonstrate learning (Choate, 1997), as quoted from Johnson (1999).

*Effectiveness of the instructor.* The instructor of this subject has a huge responsibility inside and outside the pre-service training because they will serve as models of inclusive practice and possess the transformative learning experiences necessary to challenge the assumptions

underlying teacher education programs. Table 6 presents the perception of the pre- service teachers on the effectiveness of the instructor.

*Table 6. Effectiveness of the Subject in Terms of the Effectiveness of the Instructor as Perceived by the Pre- service Teachers*

<b>Indicators</b>	<b>WM</b>	<b>I</b>	<b>Rank</b>
1. <i>Instructors of this subject practiced the social regard for learning that is they also exemplify equal treatment and good modeling to all kinds of students.</i>	3.54	VE	1
2. <i>The instructors of Educ101 are professionally equipped with the skills and mastery in this subject and are excellent in delivering their content through varied pedagogy and appropriate strategies.</i>	3.44	VE	4.5
3. <i>The instructors of this subject are armored with the fundamental values of character, proper attitude, humor, and values of inclusion inside and outside the four corners of the classroom.</i>	3.46	VE	3
4. <i>The instructors of this course have good classroom management skills and demonstrate gentleness in handling students from different backgrounds.</i>	3.44	VE	4.5
5. <i>The instructor has a good grasp of his subject matter and knows how to deliver it very well.</i>	3.50	VE	2
<b>Overall Mean</b>	<b>3.48</b>	<b>VE</b>	

As examined from this table, pre-service teachers perceive their instructors as role models who are practicing social regard for learning to all students. This is indicated by the weighted mean of 3.54 and is interpreted as very effective at rank 1. The social regard for learning, being the first domain in the National Competency Based Teacher Standards means that the instructors of inclusive education must be models of proper attitude in dealing with inclusion. The pre- service teachers appreciate and model the value of learning through the interactions of the instructors with them. The actions and statements of the instructors reflect an inclusive educator from within. This implies that the pre- service teachers see and appreciate the values of pursuing learning and exerting effort because their instructors demonstrate modeling and encourage positive and powerful learning.

Many researchers highlight the importance of modeling reflective practice to support pre-service teacher learning (Brownell et al., 2005; Hudson-Ross & Graham, 2000) and Sharma (2010) stresses that reflective practice, among other approaches ‘*requires academics to practice what they preach*’ (p. 109).

While there is little literature on this subject, Korthagen et al. (2005) found four forms of modelling: (1) implicit modelling, which seems to have a low impact; (2) explicit modelling; (3) explicit modelling and facilitating the translation into the student teachers’ own practice; (4) connecting exemplary behaviour to theory. Their findings confirm that some teacher educators apparently lack the knowledge and skills needed to use modelling in a productive way, to make their own teaching explicit, and to rethink the connection between their teacher education practices and public theory. They also found that experience as a teacher educator does not necessarily lead to more or better modeling and suggest that teacher educators work together and question each other during lessons and analyze each other’s practice to deepen their knowledge. Pugach and Johnson (2002) say that teacher educators ought to develop

experiences for pre-service teachers that provide them with ways to understand school collaboration as more than simply achieving good communication.

Analyzing further the result, ranked 3 statement says that their instructors are armored with the fundamental values of character, proper attitude, humor, and values of inclusion inside and outside the four corners of the classroom. This obtained a mean of 3.46. Furthermore, ranked at number 2, respondents also see their instructors as having a good grasp of the subject matter and know how to deliver it very well. This is indicated by the weighted mean of 3.50 and is rated as very effective. Pre-service teachers also notice the instructors of the subject as having good classroom management skills and demonstrate gentleness in handling students from different backgrounds. Furthermore, they also perceive their instructors as professionally equipped with the skills and mastery and are excellent in delivering their content through varied pedagogy and appropriate strategies. Both statements obtain a mean of 3.44 and both ranked at 4.5. These results denote that the pre-service teachers perceive their instructors as possessing the affective character of a teacher in teaching the subject and the necessary mastery and theoretical knowledge about the said subject. They exemplify preparedness and transformative instruction such that pre-service teachers value their contribution to the valuing of inclusion they are possessing. Instructors possess positive attitudes and that the students would also result to positive attitudes towards inclusion.

The importance of having positive attitudes toward inclusive education amongst in-service educators has been long recognized. If educators hold positive attitudes towards inclusive education it may allow and encourage practices that will guarantee, to a large extent, successful inclusion of all students (Hobbs & Westling, 1998; Wilczenski, 1992, 1995). Highlighting the need for positive attitudes Murphy (1996) states that if teachers leave from university with negative attitudes then those attitudes are difficult to change. Positive attitudes can be and need to be fostered through both training and positive experiences with students with disabilities (Hobbs & Westling, 1998). Specific studies investigating the concerns of educators and in particular pre-service teachers' concerns about inclusive education and their degree of comfort with persons with disabilities, though, are limited. Yet pre-service training may be the best time to address educators' concerns and possibly modify their negative attitudes about inclusive education as well as toward persons with disabilities.

In relation to varied pedagogy of the instructors, Bondy et al. (2007) stress that teacher educators must employ diverse approaches to learning for their students. As teacher education students ultimately will become teachers of diverse learners, teacher educators must be explicit about this aspect of teaching and learning.

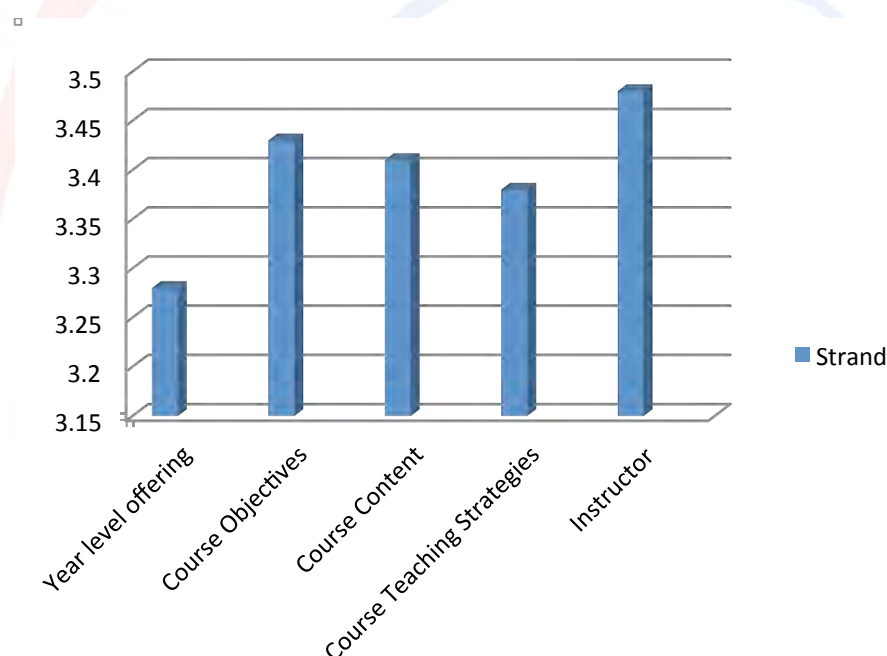
The above findings show that the effectiveness of the instructors can be distinguished in their capability to become role models first before they are able to teach the subject with conviction. Importance of theoretical background comes secondary because of nature of the subject as sensitive to the diversity and needs of the students. Instructors of this subject are expected to teach how to be inclusive and adapt to the approach of inclusive education so above anything else they are expected to be armored with inclusive values and humanness as explained earlier in the results. They are also supposed to be creating a classroom atmosphere that where there is respect, fairness, and equity, so as for the aspiring teachers to be imitating him/ her.

Generally, the pre-service teacher respondents have rated their instructors as very effective in treating and dealing with the subject and to them as well, as supported by the obtained over all mean of 3.48. This means that the instructors of inclusive education are highly equipped

with the necessary values and mastery of content expected of them as the subject instructor. This also correspondingly signifies that the instructors are generally capable in facilitating learning and implementing the approach of inclusive education to the pre- service teachers.

However, the result of this study is negated by Cochran-Smith (2004) who says that many teacher educators have not had the transformative learning experiences necessary to challenge the assumptions underlying teacher education programmes. Merryfield (2000) explained that one of the reasons why teachers are under-prepared for diversity is the lack of knowledge, experience, commitment and understanding of faculty members who teach teachers.

*Summary graph for the effectiveness of the subject.* To further analyze the effectiveness of inclusive education subject as perceived by the pre-service teachers, this graph shows which of the five strands is the most gleaned effective and which is the least perceived effective relative to the scale.



*Figure 1. Effectiveness of the inclusive education subject in terms of the strands identified*

The bar graph presents the summary of effectiveness of inclusive education subject in terms of the five strands identified from the beginning, namely: year level offering, course objectives, course content, course teaching strategies, and lastly the effectiveness of the instructor. These five strands were gleaned ‘very effective’ as interpreted in the over-all mean value of each strand. Among the five strands, the instructor is the most effective having 3.48 weighted mean as perceived by the pre-service teacher respondents of the study. Having 3.43 weighted mean, the course objectives comes next, followed by the course content with a 3.41 over-all weighted mean. Completing the list is the course teaching strategies with a close 3.38 finish, and the least ‘very effective’ strand is the year level offering with a relatively low value of 3.28.

It can be seen that the effectiveness of the instructor in teaching inclusive education subject to pre-service teachers imply that the inclusive education instruction are done by highly

qualified instructors on grounds of their knowledge and experience in terms of the subject matter. This also implies that among the five strands, the instructors' effectiveness produced positive perception, more satisfaction and more favorable impression among the respondents of the study. This can be explained by the fact that these instructors are the first professional education instructors to handle aspiring teachers and that the imitation and modeling became successful.

The course objectives revealed to be the second most very effective strand among the five. This could imply that the pre-service teachers have met and instilled the objectives of the course in their lives and applied it in their practice teaching. The cognitive, affective, psychomotor, NCBTS- based, and 21<sup>st</sup> century skills- based objectives all have the rationale towards the acquisition and learning of inclusive pedagogy in their teaching. Inclusive pedagogy focuses on extending what is ordinarily available as part of the routine of classroom life as a way of responding to differences between learners rather than specifically individualizing for some. It represents a shift in thinking about teaching and learning from that which works for most learners along with something 'different or additional' for those who experience difficulties, to an approach to teaching and learning that involves the creation of a rich learning environment characterized by lessons and learning opportunities that are sufficiently made available to everyone so that all are able to participate in classroom life (Florian, 2010; Florian & Black-Hawkins, 2010; Florian & Kershner, 2009). Therefore, the course objectives have become very effective in meeting such pedagogy.

The third most effective strand as gleaned by the pre-service teacher respondents is the course content and closely tied with the course teaching strategy. These two were perceived positively by the respondents as to their functionality to their theoretical basis of inclusion. Of course, the course content will only be delivered through appropriate course teaching strategy. As a result of this study, the respondents gave primacy to the effectiveness of the instructor and course objectives over the course content and the teaching strategies. This finding could imply that the pre-service teachers gave more remarkable feeling or attachment to their instructor as to how he/she dealt or treated the subject matter with conviction. Furthermore, it could also imply that the course content and strategies were just secondary to the respondents. The teacher educators were used as models of imitation in teaching how to teach. This could be supported by the claim of Korthagen, Loughran, and Lunenberg (2005) that teacher educators not only have the role of supporting student teachers' learning about teaching, but they also model the role of the teacher. They also say that teacher education profession is unique: *'During their teaching, doctors do not serve as role models for the actual practice of the profession i.e. they do not treat their students. Teacher educators, conversely, whether intentionally or not, teach their students as well as teach about teaching'* (p. 588).

Lastly, pre-service teacher respondents have least perceived the effectiveness of the year level offering as found out in the obtained weighted mean of 3.28, relatively lower as compared with its antecedent strands. This means that the respondents generally do not see the year level offering of the subject as neither appropriate nor unfit for the first year level. It was found out that these pre-service teachers reveal that the year level offering does not produce favourable impression among them unlike the top four strands above. This could also imply that the pre-service teachers find it relatively ineffective for them to be taking a subject that concerns inclusion and very sensitive to practice teaching.

## Conclusion

This study has found out that inclusive education subject has left a great impact in affecting the viewpoints and perceptions of pre-service teachers in Saint Louis University- School of Teacher Education. The impact it has made to these teacher candidates is manifested in the response that inclusive education subject is indeed beneficial and contributory to their overall make-up as a teacher to cope with the greater currency and demand occurring upon inclusion worldwide. The respondents have seen the need, importance and functionality of the course in pursuing their aspirations as teachers who are inclusive, sensitive, and accepting of differences and diversity into the so-called classroom of the future. They have understood and instilled the inclusive values of respect, fairness, and equity through the subject and manifested these together with humanness and sociocultural consciousness into their practice teaching or on the job teacher training. The idea of inclusive education subject is basic. It is for the future teachers to become responsive and accepting to diversity in the context of eliminating barriers towards developing positive perceptions, and eventually attitudes toward inclusion. This has been shown by the resulting impact it has created to these pre-service teachers, who are in the field for practice teaching.

Correspondingly, the evaluation of the inclusive education subject in terms of its effectiveness in five strands namely: year level offering, course objectives, course content, course teaching strategies, and effectiveness of the instructor has resulted to 'very effective' interpretation. This implied that the inclusive education subject generally produced a favorable impression to the respondents. The effectiveness of the subject is consistent in the five strands which mean that pre-service teachers have positively gleaned learning and collectively showed satisfaction with the way the subject is taught, delivered, and modeled. It is indeed very effective in instilling inclusive orientation to the pre-service teachers. Specifically, the instructors have shown very effective performance and have marked relatively high rating among the respondents. In contrast, the student teachers did not equally give favorable impression to the year level offering of the subject because of the nature of the subject and the maturity level required of them. Subsequent to the effectiveness of the subject is the challenge and implication that the administrators and teacher educators must develop a more integrated inclusive education framework with improved syllabus on teacher preparation in order to adapt to the test of this dynamic world.

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The logo for the International Association for the Advancement of Pedagogical Research (iafor) is centered on the page. It features the word "iafor" in a light blue, lowercase, serif font. The text is enclosed within a circular frame composed of two concentric, slightly irregular arcs. The outer arc is a light red color, and the inner arc is a light blue color, matching the text. The overall design is minimalist and academic.

*Reading Circles in the CBI Classroom; The Next Step in Learner-centered Instruction*

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0164

Nagasaki University School of Medicine, Japan

The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

This paper will explore how one newly established English language program is being developed to balance the issues of administrative expectations, and learner population needs and resources within the overall, larger curricular objectives of the institution. In this new and evolving structure, a significant amount of class time was committed to CBI (Content Based Instruction) in student centered group projects using materials (texts) taken from core medical courses. The overall learner response to this new CBI, student centered structure was qualitatively measured using two student-generated essays: a Presentation Reflection and a Personal Assessment. Learners were prompted to respond to questions relating to specific elements of this structure. The responses given in these essays suggests that the use of Medical texts taken from the learners' core curriculum, student centered instruction, and an adapted literature circle framework together created a dynamic component of language learning instruction and contributed to stated, long-term administrative objectives.

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One of the most important tasks of any instructor/curriculum developer is the need to balance a variety of learning factors, both environmental and demographic, to the service of the specific circumstance of institutional expectations and learner capacities. In a worse case scenario, if there is a combination of seemingly arbitrary academic benchmarks established by administrative bodies without consideration for the overall academic workload or learners' needs, instructors can find themselves squeezed between institutional expectations and the inadequate resources-in both time and proficiency-of learners. There is potential for such a development within highly competitive institutions such as medical universities, where the need to maintain increasingly sophisticated professional skills weighs heavy on both administrators and learners alike.

This study suggests that within an established curriculum an additional L2 requirement can be designed to not only mitigate against learner frustration or 'burn out', but can be supportive of one of the overall academic objectives of the institution; namely, the development of L2 communicative competence both within their peer group and over time in the larger English-speaking professional community.

In 2011, the Nagasaki University School of Medicine began a new English language component to the medical curriculum. This component established two new requirements for all incoming first-year students. All students are now required to take one additional English language course for each year of their first four years of study. These courses are for the medical department only and are credited courses in addition to their other required language courses. Furthermore, incoming students are required to achieve a 750 score on the TOEIC test by the end of their fourth year of study. Those who fail either to gain the additional four credits in English language study, or attain a score of 750 on the TOEIC, will not be allowed to move on to their fifth year of study.

The addition of the Medical English courses and TOEIC requirement were implemented in response to the recognition that in order to communicate with fellow professionals internationally, as well as stay current in international medical research and practical developments, a continuing commitment to the development of overall English language communicative competence must be made. In addition to these requirements, the School of Medicine is also reaching out to other medical institutions internationally and bringing more foreign, English speaking researchers to lecture on campus. In an effort to further promote the use of English at the institute, the newly created Graduate School of Biomedical Sciences offers courses in English including a Masters of Tropical Medicine, a Doctor of Philosophy in Pharmaceutical Sciences, and a Doctor of Philosophy in Clinical Pharmacology.

With administrative benchmarks established, it was necessary to design lessons that take into consideration not only these goals, but also the learners' already busy schedule (see appendix 1) and determine how many hours of study they could reasonably be expected to complete, English proficiency level, and a variety of other factors, in order to maximize the positive impact of the course on the learner population. The two main research questions are:

1. How will a student centered classroom organizational structure incorporating CBI material affect student motivation?

2. What impact will a student centered, task-based approach using CBI within a quasi-literature circle framework have in promoting the department's curricular goals?

#### THE LEARNER POPULATION

The participants were 57 male and female Medical freshmen students divided into three classes. All participants were Japanese Nationals between the age of eighteen and twenty years of age. Each class of 18 to 20 students was then divided into groups of four to five students per group. In addition to the CBI reading circle group tasks discussed in this article, approximately sixty minutes of the ninety-minute class was dedicated to a mixture of instruction in test taking strategies and vocabulary instruction in order to help learners meet the relatively short term TOEIC exam requirement. There was no internationally recognized, standardized test required of the students prior to enrollment.

#### CLASS STRUCTURE

The segment of each class period using CBI was inspired by the idea of literature circles as popularized by educator Harvey Daniels. The structure originated by Daniels (2002) was further adapted to ESL learner needs by David Krise and others at the English Learning Center at Michigan State University, where the concept was first introduced to one of this paper's authors. As in this ESL setting, the system implemented in the Japanese EFL context maintained the use of different roles for each group member. These roles were that of Discussion Director, Passage Picker, Word Finder, Connector, and depending in the size of the group, a Reporter. While this framework of the literature circle as used in an ESL context remains largely intact in this adaptation, there are some significant differences. One important difference is in choice of texts. The texts were not enduring works of literature but rather medical educational materials written in the target language. For this reason, the authors prefer to use the term 'reading circles' to refer to this structure. Each group consisted of four to five learners. In this first attempt of the reading circle structure, learners were told to select a reading from their Human Biology textbook section 'Biology Matters'. These sections of the textbook contain short articles that relate the technical concepts in the book to everyday issues. The readings are divided into four topic areas: Health, Science, Bioethical, and Historical. The choice of readings in these topic areas was left to the group itself. Each group was then given a particular text analysis task to complete and then share with the other members. Reading circles further depart from the more common literature circle structure in that the overall objective of group work was to use these various role assignments together to create a presentation to teach text content to the other member of the course. To facilitate this, an additional role was developed-the Presentation Manager-which would distill and organize the information organized by the other independent role assignments. The Presentation Manager was tasked with incorporating the information accumulated by each member's role in the reading circle and together with the other members, develop an eight to ten minute presentation on the text subject matter. (See appendix 2) Learners were explicitly told that the purpose of their presentation was to 'teach' their fellow students important information from their reading.

These reading circles followed a task-based learning structure. The pre-task part of the lesson consisted of establishing roles and expectations for the task. After expectations are established, learners fulfill their individual roles and group presentation project while the instructor does not directly guide the group's progress.

By not giving explicit guidance to groups, the instructor insures that much of the content and constructed meaning will originate with the learners themselves thus establishing the necessary learner-generated language required of a task structure as defined by Ellis (2006), de la Fuente (2006). The post-task evaluation is given through instructor feedback on group presentations and assessment of L2 usage and group generated materials such as handouts and power points.

Learners had to become familiar with both key terms and communicative strategies through discussion and group work over the course of this assignment. Lee and Munchi (2006) suggest that this recursive use of multiple modal input and required learner output promotes the long-term productivity of target vocabulary in learners. Communicative skills such as speaking and listening were further supported by the recursive nature of this task. Learners had to first read the chosen text, write specific information based on their group role, convey and confirm meaning both in writing and speaking within the group, and then produce written and spoken material for their presentation.

#### USE OF L1

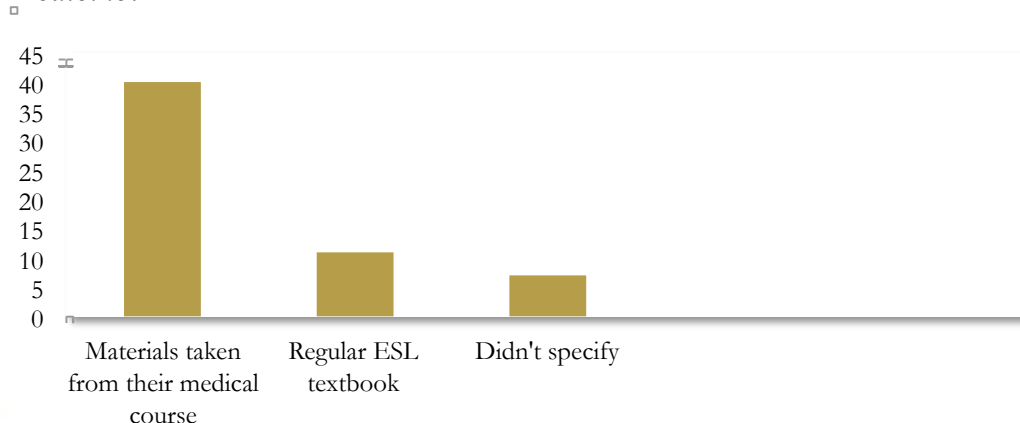
In the instructional handouts the responsibilities of each group member and the responsibility of the entire group to produce a 'teaching' presentation was thoroughly discussed. The use of the L1 was also addressed both in the class syllabus and in the handouts. Learners were told that while the L1 was not forbidden, use of the L1 should be as limited as possible. The exception to exclusive use of the L2 was in circumstances where the L1 supported comprehension of complex ideas or vocabulary, and where the L1 would allow for a more complete understanding of English content in the presentation. While some educators do not allow learners to use the L1 in the L2 classroom, recent research suggests that inclusion of the L1 in the classroom in the form of code switching may not have a negative effect on overall L2 acquisition (Tian & Macaro, 2012). Furthermore, to stigmatize the use of L1 especially in a CBI, EFL environment may serve to diminish the motivation to learn the L2 due to this imposed superficiality. As Levine, (2011, p. 5), states, "For us to deny, in our pedagogy, a role for the cognitively and socially dominate language, is to ignore a large part of the L2 learning process and the individual learner's personal experience." It is perhaps more supportive of the overall medical curricular goals to allow for the L1 in L2 study and recognize that one main goal is effective bilingual communication (Liebscher & Daily-O'Cain, 2005). Given the uniformity of this population's curriculum, culture, and age, it can be argued that these learners constitute a 'community of practice' described in Werner (1998) as stated in Liebscher. & Daily-O'Cain, (2005. P. 236).

#### ASSESSMENT

As part of their final class assignments, learners were given written instructions on what to include in two final essays: a Presentation Reflection and a Personal Assessment. These instructions contained prompts asking the learners to give their opinion on specific aspects of the course.

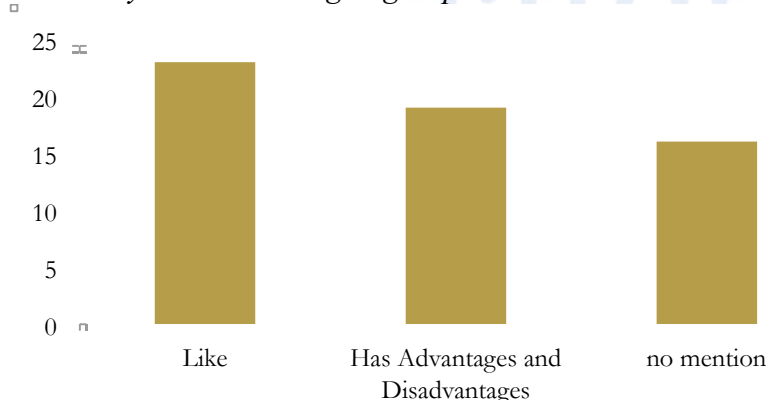
The questions related to the reading circle portion of the course and learner responses are as follows.

*'Would you prefer to have a regular English language textbook in class or would you rather use textbooks and materials taken from your studies at the School of Medicine?'*



A large majority of learners stated that they preferred using CBI materials in the class. The comments made by students who favor content material use consistently stated that it helped them better understand their core medical content. One student's comment, "We are interesting in medicine so we are motivated to learn about it." was indicative of the instructors assumption that intrinsic motivation would be bolstered by CBI in this context.

*'How do you like working in groups in class?'*

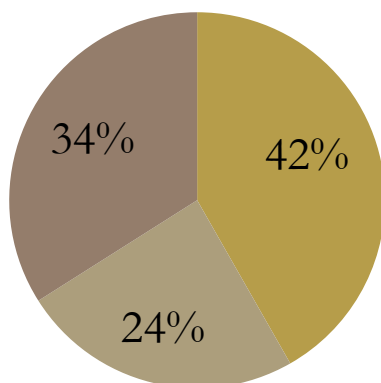


The advantage and disadvantage responders all has the same concern about group work. Many felt that this structure allowed a few students to do more work than others. Some of these students had comments like the following, "I think it is good to do working in groups, but as classes goes on , we come to depend on one person." However the respondents who indicated they favored group work (the 'Like' respondents) often expressed relief that they were able to confirm meaning and practice speaking in smaller groups prior to speaking in front of the class. As one student stated, "If I had to announce my opinions in English for all of the members in the class, I may have hesitated to express in English. However, thanks for the group system, I didn't hesitate in English I feel I can communicate with members in English."

*'How do you feel about being able to use (some) Japanese in your classroom discussions with fellow students?'*

□

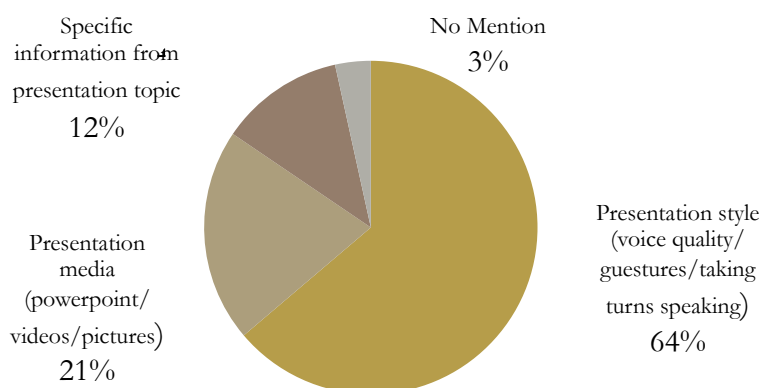
■ Japanese (L1) ok   ■ Some (supporting) L1 use   ■ NO L1



The number of students who felt that the L1 should be forbidden in the class was quite large at 34% of total respondents. This may indicate either confusion with when and how L1 use can help to support understanding of the L2. It may also indicate the desire for greater practice in the L2 in the classroom given the learners' time constraints and the inaccessibility of the L2 in their everyday surroundings. One learner wrote, "Being able to use Japanese in this class is sometimes confident for me , but if we use Japanese too often, we can not evolve our English skill."

A plurality of respondents did however favor at least some L1 use in the classroom. One learner stated, "I think to use some Japanese in classroom is O. K. sure we should use English, but sometimes our English level is not enough to solve a question. If we can use Japanese in classroom, we can deal with such a question." Another wrote, "Using japanese is very important because I can not express details in English. If I have to use only English, I can not ask others and ask very difficult medical things... It is true that if you forbid speaking japanese we speak English, but maybe we seldom talk and we cannot enjoy the class."

*‘What (if anything) did you learn from watching other groups’ presentations? What are some things you observed that you think were excellent?’*



Learners mostly focused on the presentation style and not content. The percentage of learners who stated that they learned specific details from viewing the presentations of others was low. This is to be expected of learners inexperienced with presenting, especially in a target language. The responses further show that many learners focused on qualities of the spoken presentation. In mentioning the importance of speech qualities such as volume and speed, as well as gestures and aspects of L2 pragmatics such as turn taking and body language, indicates that learners are aware of the importance of communicative factors other than simple accuracy.

#### Discussion

The CBI, student centered reading circle component of this course is time consuming to establish, but once the basic roles and responsibilities are understood, learners can effectively direct their own group's understanding and production of the content. The texts being used were concurrently being used in their core medical courses, thus increasing their relevancy to their everyday world and promoting both intrinsic and extrinsic motivation.

The problem of unbalanced sharing of group responsibilities inherent to group work can be mitigate by monitoring activity and changing roles and group members with each new reading. In following years, the goal of the course is to do three presentations for each 15-week semester. In the following year, the instructor will generate a scoring rubric for the presentations and guide learners in developing a learner-generated rubric in order to further draw attention to important aspects of speaking and pragmatics in English presentations.

In future, the inclusion of the CBI component will be limited to a smaller number of learners initially. This is necessitated by the TOEIC requirement and the seeming inability of a large number of learners to make the required score in the time allowed without concerted effort. In other words, greater emphasis on test-taking strategies and specific (TOEIC) vocabulary instruction takes precedence over the CBI component for some low-proficiency learners. Due to the TOEIC requirement, a yet-to-be determined diagnostics test will be used to divide learners according to proficiency level. The CBI/Presentation circle component will be limited to 'safe'

students, meaning those with TOEIC scores of 500 or more in their first year at the medical school.

One unforeseen challenge at the onset of this new Medical English program was what can be called the inertia of the status quo. The medical students are required to take other English classes at the main campus as well as the School of Medicine classes (see appendix 1). Coordinating content with these other instructors has proven difficult. In addition, the medical students are often mixed in with other majors and the class focus is often on conversational English. Attempts will continue to be made to increase the communication and transparency among instructors. Gradually it is hoped that such efforts will create courses that contribute to synergetic instruction rather than courses that compete with each other for learners' valuable outside class time.

### Conclusion

The pedagogical approach guiding classroom instruction was a significant departure from the usual teacher-centered approach dominant in Japanese educational institutions. The first research question asked how student centered classroom organizational structure incorporating CBI material affect student motivation. Learner feedback suggests that Content based materials promote both intrinsic and extrinsic motivation in this population of learners.

Responses concerning the second research question pertaining to goals of the medical department, that being the development of the English communicative proficiency learners will need in communicating with each other and within the larger professional community in English, were inconclusive. This is not surprising given the fact that the entire Medical English program itself is nascent. However the positive responses from learners concerning their ability to construct meaning and produce the L2 independent of explicit instructor modeling suggests that communicative confidence in the L2 was bolstered through this structure. As one student wrote, "I think that a good point in working in groups in class is that it presses for improvement in quality of our speaking and reading English skills. I can boldly speak English now in spite of making a lot of mistakes. The courage is also an English skill which is grown in these classes." The authors believe future research will show that this foundation in independently fostered confidence will support L2 skills development in accordance with administrative goals. Future research to determine if learners are able to increase the amount of specific, content information learned through presentations as both the knowledge of the content, and their communicative skills evolve, is another area of research interest.

In conclusion, it is hoped that this short investigation into the effectiveness of reading circles and CBI in a student centered EFL context will encourage future research in this evolving pedagogical concept.

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\*(The author wished to acknowledge the contributions to this evolving class structure made by teacher trainer, mentor, and friend David Allen Krise.)

*Appendix #1 First Year Medical Student Curriculum as of spring, 2011*

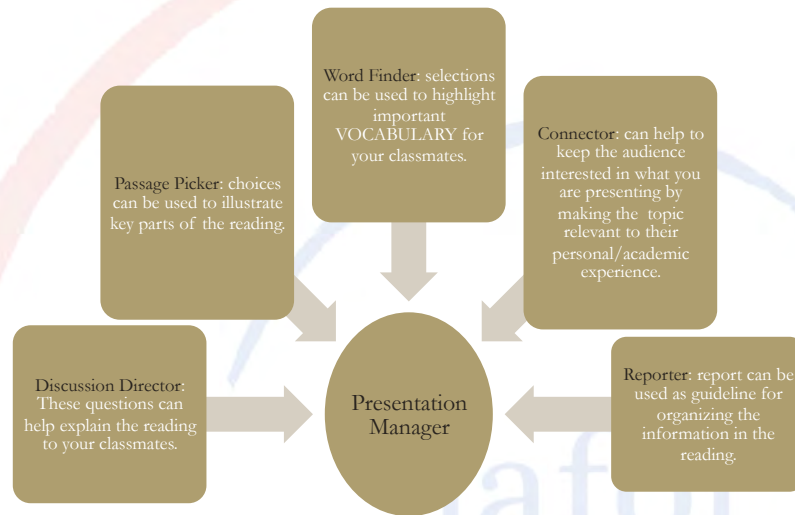
**First and Second Semester**

- 1 'English Communication'
  - 1 General English
  - 1 *Additional* Foreign Language Course  
(Korean/Chinese/German/French)
- (Required-General Studies Department)
- 7 Core Medical Courses at Medical Campus
  - 3 Electives  
(Computer courses/Sports/Art/Culture)
  - 1 *English for Medical Students*

- 1 'English Communication'
  - 1 'General English'
  - 1 *Additional* Foreign Language Course  
(Korean/Chinese/German/French)
- (Required-General Studies Department)
- 6 Core Medical Courses at Medical Campus
  - 3 Electives (Computer courses/Sports/Art/Culture)

## Appendix 2

*The organizational structure of the reading circle and suggested role imputes. Taken from student instructional handout.*



*Second Language Education: Does Text Enhancement Have an Effect on Teaching  
and Learning Chinese Classifiers?*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

The role of Text enhancement in second language learning and teaching has received attention in the literature. The present study used a pretest/posttest design to investigate text enhancement's effectiveness in teaching and learning Chinese classifiers. Subjects were six English speaking students in a third semester level of Mandarin, Chinese course at a university in the United States. They were asked to take a picture-cued sentence production test and a grammaticality judgment test after reading the treatment texts. The results showed that the subjects did not do significantly better after the treatment. These findings will be useful for Chinese language teachers who need to decide if text enhancement is effective in teaching Chinese classifiers.

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## Introduction

Input enhancement is a technique to draw learners' attention to a second language feature, such as grammar. Text enhancement is a type of input enhancement. It attempts to draw learners' attention to a target language feature in written input. The role of text enhancement in the field of second language acquisition (SLA) has been a topic that has received some attention in the literature. Some scholars have claimed a strong role for text enhancement (e.g. Shook, 1994; Jourdenais, Ota, Boyson, & Doughty, 1995). In this research, it has been found that text enhancement has a positive effect on learners' acquisition of a second language. However, others have claimed that text enhancement does not promote acquisition at all (e.g. Leow, 1997; Izumi, 2002; Wong 2003). In these studies, they found that text enhancement did not have an impact on the knowledge and acquisition of the target forms. The purpose of the present study is to provide additional research on the role of text enhancement, specifically on the acquisition of the Chinese classifiers.

## Background

The importance of the role of input in SLA is not surprising (cf. Krashen 1985). In the recent years, research has focused on how input may facilitate learners' acquisition. One of the principles of input processing VanPatten (1996) proposes is that learners process input first for meaning and content words before grammar. VanPatten further explains that learners process content words before forms; lexical items before grammatical items for meaning; and more meaning morphology before other morphology with less or no communication value. Increasing research has concerned about what type of instruction is effective for learners to notice a target form from the input. Input enhancement, which is any attempt to draw learners' attention to forms, has also received a considerable amount of attention in SLA. Sharwood Smith (1993) states that input enhancement can come in various techniques to highlight language forms. Its purpose is to make language items in the input salient which may have an effect on learners' acquisition of a second language, although without assurance. In line with Sharwood, Wong (2005) emphasizes that the salience of input does not guarantee that input will switch to intake. A body of research, such as Leeman (2003), Fotos (1994), and Trahey & White (1993) investigated different types of input enhancement, including recasts, interactive grammar tasks, and input flood respectively. These studies provide mixed results about different types of input enhancement. Leeman's study revealed that recast and enhanced salience had an effect on the subjects of the study learning Spanish agreement. Fotos' study indicated that interactive grammar tasks did not have any significant gains for the subjects in the study, whereas the subject in Trahey & White's study noticed the English adverb placement with input flood.

Text enhancement, which is a focus on a number of research studies, is another type of input enhancement and is sometimes referred to as typographical input enhancement. Wong (2005) explains that text enhancement is to draw learners' attention on the target language features which they may not notice from written input with meaning connection. A number of studies have been conducted to test the effectiveness of typographical input enhancement and they provide mixed results.

One of the research questions in the study of Shook (1994) was to investigate the effectiveness of textual enhancement by having an experimental group read an enhanced text and a control group read an unenhanced text. The target forms chosen in this study were the present perfect verb tense and the relative pronouns *que/quien(es)*. Subjects were first and second year students of Spanish. They had to do two production and recognition tests on both the target forms. Results indicated that the experimental group performed better than the control group on the assessment tasks. In other words, textual enhancement had a positive impact on the acquisition of the present perfect verb tense and the relative pronouns in Shook's study.

Another study that has found textual enhancement is effective in drawing learners' attention on forms was conducted by Jourdenais et al (1995). The purpose of this study was to identify if typographical input enhancement makes target forms more noticeable and has an impact on learner on-line processing of L2 grammatical features. The targeted forms chosen in the study of Jourdenais et al were preterit and the imperfect forms on Spanish which has communication value. Subjects in this study were native English speakers in a second semester Spanish course. This study also showed that text enhancement has an effect on learners' production of the second language.

Despite that fact that the above studies reported that written input enhancement has a positive impact on learning L2 targeted features, more research has found textual enhancement ineffective in helping learners acquire target language forms. Leow (1997) examined the effects of typographical enhancement and text length on 84 Spanish students of native English speakers. The form chosen in this study was the impersonal imperative Spanish forms of which the subjects had limited knowledge prior to the study. The result showed that written input enhancement had no significant effect on learners' comprehension of the passage and that it did not draw attention to the target forms successfully.

Leow (2001) conducted another study to find out whether using text enhancement would have an effect on noticing the targeted form, the formal imperative command in Spanish. There were 38 participants in the study. They were divided by an experimental group and a control group. Subjects had not had any instruction on the target forms prior to the study. Assessment was in the form of a written production and a recognition tasks. Results showed that there was no significant difference between enhanced and unenhanced groups on noticing the target form.

However, several studies have reported positive effectiveness of text enhancement to draw learners' attention to targeted features in spite of its ineffectiveness in promoting acquisition and production of the features. Alanen (1995) studied the helpfulness of textual enhancement with and without explicit rule instruction on grammatical morphemes in Finnish. In this study, the findings suggested that textual enhancement created a positive impact on the subjects in noticing the targeted forms but failed to facilitate learners' production of the L2. Alanen further stated that giving learners explicit rules of the target forms tended to be more effective than using textual enhancement alone.

White (1998) investigated whether text enhancement promoted the acquisition of possessive determiners of English on French speaking children. Subjects were 84 6<sup>th</sup> grade Francophone Quebecois English as a Second Language learners in a French elementary school. The subjects were divided into three treatment groups. The first group was given passages with textual

enhancement on the possessive determiners plus extensive reading and listening with the target forms; the second group was given the same passages with the enhanced passages only; and the third group was given the unenhanced version of the passages. Subjects were asked to answer questions on possessive determiners related to the story on the assessment task. Results indicated that text enhancement did not have a significant effect on acquisition of the target form. However, the textual enhancement led the subjects use the target form more frequently, although not accurately. In other words, subjects noticed the targeted form in this study.

A more recent study that reports textual enhancement facilitates learners noticing language features is Wong (2003). Wong investigated if typographical enhancement and simplified input had an impact on adult French learners of native English speakers, learning the past participle agreement in relative clauses, which had no communication value, in French. Subjects were divided into four groups. They differed with respect of (+/-) textual enhancement and (+/-) simplified input. All subjects had no formal instruction on the targeted form. They were asked to perform an error correction task in which they had to correct the errors in a text, and to do a free recall task after reading a text. Results revealed that text enhancement did not have an impact on the knowledge and acquisition of the target form, but it helped the learners notice the structure.

Nevertheless, studies have also shown that text enhancement also creates negative effects on students' learning of a second language. For example, Overstreet (1998) identified the effect of text familiarity on the comprehension and production of the students. The subjects were students in the third-semester Spanish at the University of Illinois. All subjects had received some instruction on the difference between the preterit and imperfect before the study. Overstreet reported that there was no positive effect for either text enhancement or content familiarity on production and recognition. However, there was a negative effect on subjects' comprehension of the passages. Overstreet concluded that the text enhancement had taken subjects' attention away from the overall comprehension. Albeit research indicated that text enhancement alone did not promote second language acquisition, text enhancement with a combination of output seems to facilitate language learning process. Izumi (2002) examined whether text enhancement alone has an effect on the acquisition of object-of-preposition type of relative clauses, as well as if output leads learners to reach the acquisition of the target form though attending to the input. There were four experimental groups and a control group in the study. The first group received enhanced input and did not require output; the second group received unenhanced input and output was required; the third group received enhanced input and output was required; and the fourth group received unenhanced input and output was not required. The results revealed that subjects in the output and enhanced input group outperformed in the assessment tasks, and that those received enhanced input only did not do better than subjects received unenhanced input. Izumi concluded that text enhancement had a significant main effect on noticing the target structure but failed to promote acquisition, but output along with text enhancement had a positive effect on learning.

#### Motivation of the study

The following two reasons have led to the motivation of the present study. First, the findings of the previous studies revealed mixed results of text enhancement. Wong (2005) stated that it is not easy to conclude whether text enhancement is effective as an input enhancement technique.

Second, most of the target forms used in the studies conducted on text enhancement were in Spanish, English, and French. No target form of Mandarin, Chinese has been used in any textual enhancement studies yet. VanPatten (2007) points out “the type of linguistic structure used in an instructional treatment might make a difference (p. 173).” Therefore, the purpose of the present study is to provide additional research on the role of text enhancement, specifically on the acquisition of the Chinese classifiers.

### Research Questions

1. Does text enhancement have an effect on learners’ knowledge of Chinese classifiers?
2. Does text enhancement have an effect on learners’ usage of Chinese classifiers?

### Method

#### *Subjects*

Originally, there had been thirteen participants in the study. They were in the third semester level of Mandarin, Chinese course at a University in the United States. However, three participants were in the process of withdrawing from the course due to personal issues, two subjects were non-native English speakers, and two subjects did not show up in one of the tests. Therefore, these subjects were excluded from the final subject pool. Thus, there were six subjects in the present study. All of the participants had two and a half semesters of instruction in Mandarin Chinese and had received some instruction of the target forms prior to the study.

#### *Target form*

The target items chosen in the present study were classifiers of Mandarin, Chinese. A classifier is used whenever counting occurs in the Chinese language. There are about 80 classifiers in the Chinese language, of which seven were selected for this study. These seven targeted classifiers are related to clothing only. Learners had been reported to have difficulty acquiring those classifiers by their instructor. The seven targeted items were: 条(tiáo), 件(jiàn), 套(tào), 双(shuāng), 只(zhī), 副(fù), and 顶(dǐng). The usage of classifiers is “number+ classifier+ item.” Their definitions and examples are described as follows.

1. 条(tiáo) : Classifier for long and thin objects.

一 条                      围巾 [One scarf]

2. 件(jiàn) : Classifier for an item of clothing, luggage, incident, job...etc.

三 件                      衬衫 [Three shirts]

3. 套(tào) : Classifier for a set of books, a suit of clothing, a suite of rooms.

两 套                      西装 [Two suits]

4. 双(shuāng) : Classifier for things in pairs.

四 双                  手套 [Four pairs of gloves]

5. 只(zhī) : Classifier for certain implements or containers.

五 只                  手表 [Five watches]

6. 副(fù) : Classifier for eyewear.

七 副                  眼鏡 [Seven pairs of glasses]

7. 顶(dǐng) : Classifier for hats and caps.

六 顶                  帽子 [Six hats]

### *Materials*

The following materials were used to conduct this study: a pre-test which included 28 sets of pictures with a question sheet, and a grammaticality judgment question sheet. The treatment included two enhanced reading passages, a question and answer sheet for the reading passages. The materials for the posttest were the same as the pre-test but with the questions changed. The vocabulary used in the entire study was words that subjects had previously taught.

### *Treatment texts*

Two passages (see Appendix A) were written for the treatment task. The first passage had about 130 words and contained three classifiers, whereas the second passage had about 120 words and contained four classifiers. Each classifier appeared twice in the passage. The level of difficulty of the passages was similar to what the subjects had been reading in class. The content of the first passage was based on shopping whereas the second passage was about what kinds of clothing items the characters in the story liked. Two question sheets (see Appendix B) with two inferential questions related to each passage were, then, given to the subjects after they finished reading. The purpose of asking subjects to answer some inferential questions was to have them do something with the input (Lee & VanPatten 1995). That is, to keep their focus on meaning. The decision of having subjects answer inferential questions instead of other kinds of comprehension questions was to avoid (1) the subjects producing any pushed output with classifiers, and (2) to avoid providing further input from the questions themselves. The questions were written in English and subjects were allowed to write their answers in English. There was no right or wrong answer for the inferential questions. An example of an inferential question would be,

‘If you had a girlfriend whose shopping habit was like the girl in the story, how would you feel?’

## Assessments

### *Pretest and Posttest*

The selections of the testing measures in the present study were modified based on the two of the written testing measures used in Izumi (2002)'s study. They were picture-cued sentence production test and grammaticality judgment test.

*Picture-cued sentence production test* The purpose of this test was to measure the subjects' usage of Chinese classifiers on clothing before and after the treatment. Subjects were shown 28 sets of pictures of which 14 of them were distractors (see Appendix C). Subjects were given an answer sheet (see Appendix D) and they were asked to write down the difference between the two pictures in each set. The purpose of asking the subjects to compare two pictures was to lead them to use classifiers because the pictures are different in the amount of a particular of item of clothing. For example, picture A had two T-shirts and picture B had four T-shirts of the same kind and color. The only difference between the two pictures was the quantity. The subjects were to write down the difference between these two pictures in a sentence, such as,

A 有 兩 件 T 恤 但 是 B 有 四 件 T 恤 。 Or  
*A you liang jian T xu dan shi B you si jian T xu.* [A has two T-shirts but B has four.]

Subjects were allowed to write down the answer in pinyin (the Romanized pronunciation of Mandarin Chinese) because the purpose of the test was not to test the subjects' knowledge of Chinese characters.

*Grammaticality judgment test* The purpose of this test was to find out the subjects' receptive knowledge or understanding of Chinese classifiers on clothing before and after the treatment. The subjects were given a test sheet (see Appendix E) on which there were 14 questions about classifiers and seven distractors in the multiple choice format. There were three choices for each question. The subjects had to identify which sentence in each question is correct. The questions were written in both Chinese characters and pinyin which was put on top of the Chinese characters. The reason of putting pinyin was the same as the picture-cued sentence production task mentioned above. An example of a question on the grammaticality judgment test would be,

*wo you yi zhi qun zi*

- a. 我有一只裙子。  
[I have a dress] (with the classifier for watches and bracelet.)

*wo you yi ding qun zi*

- b. 我有一頂裙子。  
[I have a dress] (with the classifier for hats.)

*wo you yi tiao qun zi*

- c. 我有一条裙子。  
[I have a dress] (with the classifier for dresses.)

Each correct classifier appeared in two questions because at times one classifier can be used for more than one kind of item for clothing.

The selections of the tests used for the post-test were the same as those used in the pre-test except for the following changes to avoid practice effect.

- A. For the picture-cued sentence production test, the styles of the pictures, the types of some of the clothing items, and the order of the pictures were different. However, because of the limitation of the different types of clothing for each classifiers, and the subjects' limited vocabulary knowledge in the target language, 26 out of 28 items appeared in the pre-test were used again in the post-test (see Appendix F).
- B. For the grammaticality judgment test, the subject and verb choices as well as the order of the questions were different from the pre-test (see Appendix G).

### *Procedure*

A pilot test had been given to an upper level class of Mandarin, Chinese at the same university prior to the pre-test. The purpose of the pilot test was to ensure that the subjects would be able to understand the questions and procedure of the test.

On the day of the pre-test, the instructor explained to the subjects the purpose of the test and provided instruction on how to do the test. Then, the instructor administered the picture test. When all of the subjects indicated that they had finished one set of picture, their instructor moved on to the next set of picture.

During the next class period, the grammaticality judgment test was given to the subjects. The reason of separating the two tests into two class periods was to avoid subjects being too focused on the target forms.

One week after the pre-test, the treatment began. On the day of the treatment, the subjects were given the first passage with enhanced effect. After they finished reading, they were given a question and answer sheet to answer the inferential questions. Then, they were given the second passage with enhanced effect. When they finished reading, they were, then, given another question and answer sheet to answer the inferential questions. The subjects were not allowed to look at the passages in order to answer the questions.

Two days after the treatment, the two tasks of the posttest were given to the subjects. After the production-cued sentence task was completed, the instructor directed the subjects to do some classroom activities before the grammaticality judgment task was given out to avoid the subjects being too focused on the target forms.

### *Scoring*

In the picture-cued sentence production test, only the sentences related to the classifier pictures and the target classifiers were scored. One point was given to each classifier used correctly in each picture, meaning the maximum score that each subject could receive in each set of picture was two. Since there were fourteen pictures related to the targeted items and the rest were disactors, the range of possible scores for this test was 0-28.

In the grammaticality judgment test, only the fourteen questions for the target forms were scored, and one point was given to each correct answer. Therefore, the range of possible scores was 0-14 for the judgment test.

## Result

### *Results of the Knowledge Scores*

Table 1 displays the descriptive statistics for the total test scores on the pretest and the posttest of the grammaticality judgment test. The results of the mean scores indicated that there was no significant difference between the pre-test and posttest. Paired *t*-test was used to calculate the differences between the pretest and posttest. The *t*-value of the grammaticality judgment test was -0.213, whereas  $p = 0.8396$ ; i.e.  $p > .05$ . Therefore, text enhancement did not have a significant effect on learners' knowledge of Chinese classifiers.

-----  
TABLE 1 ABOUT HERE  
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### *Results of the Usage Scores*

Table 2 displays the descriptive statistics for the total test scores on the pretest and posttest of the production test. The results of the mean scores indicated that there was no significant difference between the pre-test and posttest. Paired *t*-test was used to calculate the differences between the pretest and posttest. The *t*-value of the picture-cued production test was -0.85, and the  $p = 0.4341$ ; i.e.  $p > .05$ . Therefore, text enhancement did not have a significant effect on learners' usage of Chinese classifiers.

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TABLE 2 ABOUT HERE  
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## Discussion

The results reported in the result section are interesting. The findings match some of the previous studies on text enhancement (e.g., White 1998; Wong 2003) in which they also reported that there was no main effect on acquisition of targeted language items with text enhancement in their studies. Three reasons can be explained why text enhancement failed to promote the subjects' knowledge and production of the targeted classifiers in the present study.

First, the subjects in the present study were only exposed to the enhanced text once. They were only given an enhanced passage without any explanation or instruction of the classifiers. One time exposure with text enhancement does not promote acquisition. We cannot test the effectiveness of text enhancement with Chinese learners of English with just one exposure.

Second, there were seven targeted classifiers in the present study which exceeded the number of targeted language items in other previous studies that only focused on one or two grammatical items. One of the principles that Lee and VanPatten (1995) suggested for learners to process targeted language items is to focus on one thing at a time. Subjects in the present study may have been benefited more if they were presented only one classifier in an enhanced text.

Third, based on the previous studies, such as Izumi (2002), text enhancement can only promote noticing but does not guarantee processing. VanPatten (2004) briefly mentioned that text enhancement does not help learners make form-meaning connections. In other words, the subjects in the present study may have noticed the targeted classifiers, but could not process them to make form-meaning connections.

Finally, the small amount of participants may have affected the results on text enhancement. There were only six subjects in this study that cannot provide a strong evidence of text enhancement not being able to increase learners' knowledge and production of Chinese classifiers.

It is worth mentioning that the mean scores of both of the pre and post grammaticality judgment tests, ( $M = 5.5$ ,  $SD = 2.35$ ) and ( $M = 5.833$ ,  $SD = 1.94$ ) respectively, are significantly higher than the mean scores of the pre and post picture-cued sentence production tests ( $M = 1$ ,  $SD = 2.45$ ) and ( $M = 1.833$ ,  $SD = 2.23$ ) respectively. We can conclude that the subjects understood classifiers a lot more than they could produce them.

#### Educational importance of the study

The present study provides an important insight to teaching Chinese as a foreign language. First, there is not a large amount of research done specifically on Chinese as a foreign language. Second, because Chinese has become a fast developing foreign language subject in the field of second language education, thus, there is a great need of research on improving teaching and learning of Chinese. Third, research has shown that it takes U.S. learners longer time to reach a certain proficiency level of Chinese than to achieve the same level in other foreign languages (Omaggio-Hadley, 2001). Therefore, the finding of this study provides information of whether text enhancement is effective in helping learners acquire Chinese classifiers. The results indicated that text enhancement does not show effectiveness with the subjects' learning Chinese classifiers. This result is in line with some of the previous studies. The reasons of the failure of text enhancement in the present study are probably due the following reasons. First, the number of targeted items (seven classifiers total) might have distracted the subjects' attention. Second, it might be due to the fact that text enhancement could help the subjects notice the language items but not process them. In other words, text enhancement in this study failed to promote any acquisition effect. Third, the subjects were only exposed to the enhanced text once that may have made a difference if they were shown the enhanced text multiple times. Fourth, there were only

six subjects in this study that cannot provide a strong evidence of text enhancement not being able to increase learners' knowledge and production of Chinese classifiers.

The above reasons are also the limitations of the present study. Therefore, for future research suggestions, fewer target items need to be focused. Also, subjects need to have more exposure to enhanced texts, and the number of subjects needs to be increased so as to see the effects of text enhancement.

#### Acknowledgments

I would like to express my gratitude and special thanks to Professor Bill VanPatten for providing valuable advice in this study. I would also like to express my thanks to our colleagues, Yan-Yi Chuan and Takashi Izumi who contributed their time and effort in the data collection process.

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Table 1

*Descriptive Statistics of the Grammaticality Judgment Test Results*

	n	<i>M</i>	<i>SD</i>
Pretest	6	5.500	2.345
Posttest	6	5.833	1.941

Table 2

*Descriptive Statistics of the Picture-Cued Production Test Results*

	n	M	SD
Pretest	6	1.000	2.449
Posttest	6	1.833	2.229

## Appendixes

### Appendix A

#### Passage 1:

Xiàge xīngqī shì XiǎoNíng de gēge de shēngrì, XiǎoNíng gēn tāde nǚpéngyǒu

下个星期是小宁的哥哥的生日，小宁跟他的女朋友

XiǎoFēi yìqǐ mǎidōngxī. Tā mǎile yí **jiàn** hànshān gěi tāde gēge. Tā yě mǎile

小菲一起去买东西。他买了一件汗衫给他的哥哥。他也买了

yí **tào** xīzhuāng gěi tāde bàba.

一套西装给他的爸爸。

XiǎoFēi hěn xǐhuān piàoliàngde yīfú. Tā mǎile sān **jiàn** chènshāng hé liǎng **tào**

小菲很喜欢漂亮的衣服。她买了三件衬衫和两套

shuìyī. Tā hěn xiǎngmǎi yí **zhī** shǒubiǎo gěi XiǎoNíng, kěshì tā bù xǐhuān. Míngtiān shì

睡衣。她很想买一只手表给小宁，可是他不喜欢。明天是

tāde shēngrì, XiǎoNíng yě xiǎngmǎi yí **zhī** shǒuzhuó gěi XiǎoFēi.

她的生日，小宁也想买一只手镯给小菲。

Passage 2:

XiǎoNíng hé tāde gēge fēicháng xǐhuān màozi hé mòjǐng. XiǎoNíng yǒu

小宁和他的哥哥非常喜欢帽子和墨镜。小宁有

shí **dǐng** Màozi hé shí **fù** mòjǐng. Tā gēge yǒu shíwǔ **dǐng** màozi hé shíbā **fù** mòjǐng.

十**顶**帽子和十**副**墨镜，他哥哥有十五**顶**帽子和十八**副**墨镜。

Tā gēge gèng xǐhuān shǒutào, tā yǒu shíliù **shuāng** shǒutào.

他哥哥更喜欢手套，他有十六**双**手套。

XiǎoFēi fēicháng xǐhuān chúnzi hé xiézi. Tā yǒu èrshí **tiáo** chúnzi hé

小菲非常喜欢裙子和鞋子。她有二十**条**裙子和

sānshí **shuāng** xiézi. XiǎoFēi de jiějie hěn xǐhuān wéijīn he yǎnjìng. Tā yǒu shíbā **tiáo**

三十**双**鞋子。小菲的姐姐很喜欢围巾和眼镜。她有十八**条**

wéijīn, hái yǒu shí **fù** yǎnjìng.

围巾，还有十**副**眼镜。

*Appendix B*

Question sheet 1:

Please answer the following questions based on the passages you have read.  
Please answer the question in English.

Q1: What do you think about the relationship between XiǎoNíng and his brother?

Q2: What do you think about the relationship between XiǎoNíng and his girlfriend, XiǎoFēi?









































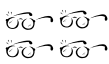















Question sheet 2:

Please answer the following questions based on the passages you have read.  
Please answer the question in English.

Q3: Please compare your own fashion taste with XiǎoNíng and his brother.

Q4: If you had a girlfriend like XiǎoFēi and her sister, how would you feel?

Appendix C Picture-cued Sentence Production Test (Pretest)

A1 	B1 	A2 	B2 	A3 	B3 	A4 	B4 
A5 	B5 	A6 	B6 	A7 	B7 	A8 	B8 
A9 	B9 	A10 	B10 	A11 	B11 	A12 	B12 
A13 	B13 	A14 	B14 	A15 	B15 	A16 	B16 
A17 	B17 	A18 	B18 	A19 	B19 	A20 	B20 
A21 	B21 	A22 	B22 	A23 	B23 	A24 	B24 
A25 	B25 	A26 	B26 	A27 	B27 	A28 	B28 

*Appendix D* Answer Sheet

Please answer in **Pinyin** or **Chinese character**.

Q1. What is the difference between picture A1 and B1?

Q2. What is the difference between picture A2 and B2?

Q3. What is the difference between picture A3 and B3?

Q4. What is the difference between picture A4 and B4?

Q5. What is the difference between picture A5 and B5?

Q6. What is the difference between picture A6 and B6?

Q7. What is the difference between picture A7 and B7?

Q8. What is the difference between picture A8 and B8?

Q9. What is the difference between picture A9 and B9?

Q10. What is the difference between picture A10 and B10?

Q11. What is the difference between picture A11 and B11?

Q12. What is the difference between picture A12 and B12?

Q13. What is the difference between picture A13 and B13?

Q14. What is the difference between picture A14 and B14?

Q15. What is the difference between picture A15 and B15?

Q16. What is the difference between picture A16 and B16?

Q17. What is the difference between picture A17 and B17?

Q18. What is the difference between picture A18 and B18?

Q19. What is the difference between picture A19 and B19?

Q20. What is the difference between picture A20 and B20?

Q21. What is the difference between picture A21 and B21?

Q22. What is the difference between picture A22 and B22?

Q23. What is the difference between picture A23 and B23?

Q24. What is the difference between picture A24 and B24?

Q25. What is the difference between picture A25 and B25?

Q26. What is the difference between picture A26 and B26?

Q27. What is the difference between picture A27 and B27?

Q28. What is the difference between picture A28 and B28?

Appendix E Grammaticality Judgment Test (Pretest)

For each of the sentence below, find the correct sentence and circle the corresponding letter A, B, or C.

1. Zhè sìjiàn wàitào hěn nánkàn 。

A. 这四件外套很难看。

Zhè sìtiáo wàitào hěn nánkàn 。

B. 这四条外套很难看。

Zhè sìgè wàitào hěn nánkàn 。

C. 这四个外套很难看。

2. Nǐde lùsè shǒutào hěn piàoliàng 。

A. 你的绿色手套很漂亮。

Lùsède shǒutào hěn nǐ piàoliàng 。

B. 绿色的手套很你漂亮。

Hěn lùsè piàoliàng nǐde shǒutào 。

C. 很绿色漂亮你的手套。

3. Zhè wǔtiáo shǒuzhuó tài hǎokàn le 。

A. 这五条手镯很漂亮。

Zhè wǔshuāng shǒuzhuó tài hǎokàn le 。

B. 这五双手镯很漂亮。

Zhè wǔzhī shǒuzhuó tài hǎokàn le 。

C. 这五只手镯很漂亮。

4. Tā yǒu jiǔdǐng shuìyī 。

A. 他有九顶睡衣。

Tā yǒu jiǔtào shuìyī 。

B. 他有九套睡衣。

Tā yǒu jiǔgè shuìyī 。

C. 他有九个睡衣。

5. Wǒ hé hóngchènshān chuāng niúzáikù 。

A. 我和红衬衫穿牛仔裤。

Wǒ chuāng hóngchènshān hé niúzáikù 。

B. 我穿红衬衫和牛仔裤。

Niúzáikù hé hóngchènshān chuāng wǒ 。

C. 牛仔裤和红衬衫穿我。

6. Māma zuì xǐhuān zhè sāndǐng shǒutào 。

A. 媽媽最喜欢这三顶手套。

Māma zuì xǐhuān zhè sāntào shǒutào 。

B. 媽媽最喜欢这三套手套。

Māma zuì xǐhuān zhè sānshuāng shǒutào 。

C. 媽媽最喜欢这三双手套。

7. Bàba zuì ài zhè sìzhī màozi 。

A. 爸爸最愛這四只帽子。

Bàba zuì ài zhè sìdǐng màozi 。

B. 爸爸最愛這四顶帽子。

Bàba zuì ài zhè sìjiàn màozi 。

C. 爸爸最愛這四件帽子。

8. Wǒ mòjìng hēisè yàomǎi 。

A. 我墨镜黑色要买。

Hēisè mòjìng yàomǎi wǒ 。

B. 黑色墨镜要买我。

Wǒ yàomǎi hēisè mòjìng 。

C. 我要买黑色墨镜。

9. Gēge yǒu liǎngtào xīzhuāng 。

A.哥哥有兩套西裝。

Gēge yǒu liǎngge xīzhuāng 。

B.哥哥有兩個西裝。

Gēge yǒu liǎngzhī xīzhuāng 。

C.哥哥有兩只西裝。

10. Tā yǒu sānge hànshān 。

A.她有三個汗衫。

Tā yǒu sānjiàn hànshān 。

B.她有三件汗衫。

Tā yǒu sāntiáo hànshān 。

C.她有三條汗衫。

11. Nǐde zōngsè xīzhuāng bù xǐhuān wǒ 。

A.你的棕色西裝不喜歡我。

Wǒ zōngsè xīzhuāng bù xǐhuān nǐde 。

B.我棕色西裝不喜歡你的。

Wǒ bù xǐhuān nǐde zōngsè xīzhuāng 。

C.我不喜歡你的棕色西裝。

12. Wǒ bù xǐhuān nà yífu yǎngjìng 。

A.我不喜歡那一副眼鏡。

Wǒ bù xǐhuān nà yíjiàn yǎngjìng 。

B.我不喜歡那一件眼鏡。

Wǒ bù xǐhuān nà yíshuāng yǎngjìng 。

C.我不喜歡那一雙眼鏡。

17. Jīntiān huángsè màozi dài wǒ 。

A.今天黃色帽子戴我。

13. Nǐ méiyǒu liǎngfù shǒubiǎo 。

A.我有一副手錶。

Nǐ méiyǒu liǎngzhī shǒubiǎo 。

B.我有一只手錶。

Nǐ méiyǒu liǎngjiàn shǒubiǎo 。

C.我有一件手錶。

14. Nǐ yǒu jīnsè shǒubiǎo mā?

A.你有金色手錶嗎?

Jīnsè shǒubiǎo nǐ yǒu mā?

B.金色手錶有你嗎?

Nǐ shǒubiǎo jīnsè yǒu mā

C.你手錶金色有嗎?

15. Jiějie chuāngle yíshuāng chángkù 。

A.姐姐穿了一雙長褲。

Jiějie chuāngle yítiáo chángkù 。

B.姐姐穿了一條長褲。

Jiějie chuāngle yíge chángkù 。

C.姐姐穿了一個長褲。

16. Nǐ yǒu sānshuāng píxié mā?

A.你有三雙皮鞋嗎?

Nǐ yǒu sāntiáo píxié mā?

B.你有三條皮鞋嗎?

Nǐ yǒu sāntào píxié mā?

C.你有三套皮鞋嗎?

21. Tā yǒu yíding màozi 。

A.他有一頂帽子。

Wǒ dài huángsè màozi jīntiān 。

B. 我戴帽子黄色今天 。

Jīntiān wǒ dài huángsè màozi 。

C. 今天我戴黄色帽子 。

Tā yǒu yíjiàn màozi 。

B. 他有一件帽子 。

Tā yǒu yíge màozi 。

C. 他有一个帽子 。

18. Dàgē māile sījiàn wéijīn 。

A. 妈妈买了七件围巾 。

Dàgē māile sīge wéijīn 。

B. 妈妈买了七个围巾 。

Dàgē māile sītiáo wéijīn 。

C. 妈妈买了七条围巾 。

19. Zhè liǎngtào mòjìng hěn hǎokàn 。

A. 这两套墨镜很好看 。

Zhè liǎngshuāng mòjìng hěn hǎokàn 。

B. 这两双墨镜很好看 。

Zhè liǎngfù mòjìng hěn hǎokàn 。

C. 这两副墨镜很好看 。

20. Māma méiyǒu lánse wéijīn 。

A. 妈妈没有蓝色围巾 。






































































































Māma lánse wéijīn méiyǒu 。

B. 妈妈蓝色围巾没有 。

Lánse wéijīn méiyǒu māma 。

C. 蓝色围巾没有妈妈 。

Appendix F Picture-cued Sentence Production Test (Posttest)

A1 	B1  	A2 	B2 	A3 	B3 	A4 	B4 
A5  	B5 	A6 	B6 	A7 	B7   	A8 	B8 
A9  	B9    	A10 	B10 	A11   	B11  	A12 	B12 
A13  	B13    	A14 	B14 	A15 	B15  	A16 	B16 
A17   	B17     	A18 	B18 	A19 	B19    	A20 	B20 
A21    	B21      	A22 	B22 	A23 	B23 	A24    	B24  
A25 	B25 	A26   	B26 	A27 	B27 	A28    	B28    

Appendix G Grammaticality Judgment Test (Posttest)

For each of the sentence below, find the correct sentence and circle the corresponding letter A, B, or C.

1. Nǐ méiyǒu liǎngfù shǒubiǎo 。

A. 我有一副手表。

Nǐ méiyǒu liǎngzhī shǒubiǎo 。

B. 我有一只手表。

Nǐ méiyǒu liǎngjiàn shǒubiǎo 。

C. 我有一件手表。

2. Nǐ yǒu jīnsè shǒubiǎo mā?

A. 你有金色手表吗?

Jīnsè shǒubiǎo nǐ yǒu mā?

B. 金色手表有你吗?

Nǐ shǒubiǎo jīnsè yǒu mā

C. 你手表金色有吗?

3. Jiějie chuāngle yīshuāng chángkù 。

A. 姐姐穿了一双长裤。

Jiějie chuāngle yītiáo chángkù 。

B. 姐姐穿了一条长裤。

Jiějie chuāngle yìge chángkù 。

C. 姐姐穿了一个长裤。

4. Nǐ yǒu sānshuāng píxié mā?

A. 你有三双皮鞋吗?

Nǐ yǒu sāntiáo píxié mā?

B. 你有三条皮鞋吗?

Nǐ yǒu sāntào píxié mā?

C. 你有三套皮鞋吗?

5. Jīntiān huángsè màozi dài wǒ 。

A. 今天黄色帽子戴我。

Wǒ dài huángsè màozi jīntiān 。

B. 我戴帽子黄色今天。

Jīntiān wǒ dài huángsè màozi 。

C. 今天我戴黄色帽子。

6. Bàba zuǐ ài zhè sìzhī màozi 。

A. 爸爸最愛這四只帽子。

Bàba zuǐ ài zhè sìdǐng màozi 。

B. 爸爸最愛這四頂帽子。

Bàba zuǐ ài zhè sìjiàn màozi 。

C. 爸爸最愛這四件帽子。

7. Dàgē mǎile sìjiàn wéijīn 。

A. 大哥买了四件围巾。

Dàgē mǎile sìge wéijīn 。

B. 大哥买了四个围巾。

Dàgē mǎile sìtiáo wéijīn 。

C. 大哥买了四条围巾。

8. Nà yítào mòjìng hěn piàoliàng 。

A. 那一套墨镜很漂亮。

Nà yīshuāng mòjìng hěn piàoliàng 。

B. 那一双墨镜很漂亮。

Nà yífù mòjìng hěn piàoliàng 。

C. 那一副墨镜很漂亮。

9. Māma méiyǒu lán sè wéijīn 。

A. 妈妈没有蓝色围巾。

Māma lán sè wéijīn méiyǒu 。

B. 妈妈蓝色围巾没有。

Lán sè wéijīn méiyǒu māma 。

C. 蓝色围巾没有妈妈。

10. Wǒ méiyǒu wǔ dǐng màozi 。

A. 我没有五顶帽子。

Wǒ méiyǒu wǔ jiàn màozi 。

B. 我没有五件帽子。

Wǒ méiyǒu wǔ ge màozi 。

C. 我没有五个帽子。

11. Zhè sì jiàn wài tào hěn nán kàn 。

A. 这四件外套很难看。

Zhè sì tiáo wài tào hěn nán kàn 。

B. 这四条外套很难看。

Zhè sì ge wài tào hěn nán kàn 。

C. 这四个外套很难看。

12. Nǐ de lǜ sè shǒu tào hěn piào liàng 。

A. 你的绿色手套很漂亮。

Lǜ sè de shǒu tào hěn nǐ piào liàng 。

B. 绿色的手套很你漂亮。

Hěn lǜ sè piào liàng nǐ de shǒu tào 。

C. 很绿色漂亮你的手套。

17. Nǐ de zōng sè xī zhuāng bù xǐ huān wǒ 。

A. 你的棕色西装不喜欢我。

13. Wǒ bù xǐ huān nà yí fù yǎng jìng 。

A. 我不喜欢那一副眼镜。

Wǒ bù xǐ huān nà yí jiàn yǎng jìng 。

B. 我不喜欢那一件眼镜。

Wǒ bù xǐ huān nà yí shuāng yǎng jìng 。

C. 我不喜欢那一双眼镜。

14. Wǒ mò jìng hēi sè yào mǎi 。

A. 我墨镜黑色要买。

Hēi sè mò jìng yào mǎi wǒ 。

B. 黑色墨镜要买我。

Wǒ yào mǎi hēi sè mò jìng 。

C. 我要买黑色墨镜。

15. Gē ge yǒu liǎng tào xī zhuāng 。

A. 哥哥有两套西装。

Gē ge yǒu liǎng ge xī zhuāng 。

B. 哥哥有两个西装。

Gē ge yǒu liǎng zhī xī zhuāng 。

C. 哥哥有两只西装。

19. Tā yǒu jiǔ dǐng shuì yī 。

A. 他有九顶睡衣。

Tā yǒu jiǔ tào shuì yī 。

B. 他有九套睡衣。

Tā yǒu jiǔ ge shuì yī 。

C. 他有九个睡衣。

20. Wǒ hé hóng chèn shān chuāng niú zǎi kù 。

A. 我和红衬衫穿牛仔裤。

Wǒ zōngsè xīzhuāng bù xǐhuān nǐde 。

B. 我棕色西装不喜欢你的。

Wǒ bù xǐhuān nǐde zōngsè xīzhuāng 。

C. 我不喜欢你的棕色西装。

18. Zhè wǔtiáo shǒuzhuó tài hǎokàn le 。

A. 这五条手镯很漂亮。

Zhè wǔshuāng shǒuzhuó tài hǎokàn le 。

B. 这五双手镯很漂亮。

Zhè wǔzhī shǒuzhuó tài hǎokàn le 。

C. 这五只手镯很漂亮。

Wǒ chuāng hóngchènshān hé niúzǎikù 。

B. 我穿红衬衫和牛仔裤。

Niúzǎikù hé hóngchènshān chuāng wǒ 。

C. 牛仔裤和红衬衫穿我。

21. Tā yǒu yīdǐng màozi 。

A. 他有一顶帽子。

Tā yǒu yījiàn màozi 。

B. 他有一件帽子。

Tā yǒu yíge màozi 。

C. 他有一个帽子。

*Process vs. Product: Does Competition have a place in the Teaching of Art?*

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0056

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

This paper details the process of guiding a group of art students in a competition to be chosen as the winning artist to create an iconic sculpture in the National Institute of Education (NIE) for the Inaugural Youth Olympic Games held in Singapore in 2010. From supervising students in the planning stages to the judging of the artworks, I will be examining the artistic process, the role of a teacher, the role of assessment in art, ethics in art, its impact on the teaching of art and the learning of students.

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## **Background**

Most of the students that took part in the competition were youths between 16-21 years old and are pursuing their diploma or degree to be teachers in primary/secondary school. I am their Instructor and an active artist and have taught art at the secondary, college and university level in many different contexts. I currently teach future teachers of art at NIE in Singapore. My job is to facilitate their growth as teachers and also to encourage their passion as young artists so that when they become art teachers themselves they will be able to encourage the artistic passion of their students and understand the value of the arts.

## **Youth Olympic Games: Legacy Artwork Competition**

NIE hosted the inaugural Youth Olympic Games Village (YOGV) 2010 and wanted to commemorate the event with a permanent public sculpture on campus. Unlike other corporations or institutions that would have commissioned an artist to design an artwork, NIE being an educational institution, decided to engage our own students in designing the sculpture. This decision shows the confidence the institution has in its students' and their instructors' abilities. The Visual and Performing Arts academic group was happy to spearhead this project and saw it as a chance to nurture and showcase our students' artistic prowess. It was an opportunity not to be missed and I was put in charge of this project.

It was suggested that we structure the process as a competition because competitions are seen to garner attention from press as well as participants and so would benefit the school with positive publicity. The whole premise of the Olympic Games/Youth Olympic Games is predicated on competitive sports, so making this into a competition didn't seem too far-fetched. There would be 5 consolation prizes and a single grand prize. The grand prizewinner's design would be the YOGV Legacy Sculpture and would be installed in a prominent place on campus.

## **Student as Artist: Classmates as Competitors**

The students were mostly first year students in either the diploma or degree in art education programmes and had foundational art training in drawing and painting. They were given 12 weeks to come up with a proposal, construct a 3 dimensional maquette and mount an exhibition where the judging of their artwork would take place. A project brief was given with details on deadlines, budget, proposal requirements, material requirements, scale, exhibition and the element of competition. I exposed them to examples of artworks that were created for past Olympic games as well as works of other prominent artists who make public art such as Claes Oldenburg, Dale Chihuly, Antony Gormley and Robert Smithson. They were in awe of the scale of public art and the possibility that their own design could be the artwork that would be monumentalized. The briefing got them excited and they realized that being given the opportunity to make public art as a first year student was unprecedented. After the briefing, they were told to do their own research either in the library or the Internet and come up with 1 to 3 ideas for a sculpture.

Out of 23 students only one proposal could be chosen as the YOGV Legacy artwork to be constructed on campus. They were focused and worked hard on developing their ideas. The competition was on.



Image of research process

### Art making Process

In my approach as their teacher, it was not time to pick favorites, it was time to encourage and advise. They kept a sketchbook of all their ideas and I would meet with each individual student and listen intently to each one of their ideas and discuss with them what they feel is their best proposal. I would also guide them if they felt stuck towards research into artists who were looking at the same ideas or working in the same genre. The discussions also covered details such as:

- 1) concept and meaning: the artwork had to represent the Youth Olympic Games
- 2) scale: it should be large enough that it has physical impact yet manageable enough to be built on campus
- 3) medium: it should be made of durable material so it will last as a public sculpture
- 4) budget: both the budget of the maquette and the eventual artwork is considered
- 5) visual impact: the eventual sculpture had to have visual impact as public art in order to be effective

When it came time to make the maquettes, they were given instruction on woodworking, clay molding, wire sculpting, plaster casting and papier mache. They then had to choose which technique they would employ to make their maquette and were given 3 hours every week, over the next 2 months to create them. After the completion of these maquettes the group had to organize all aspects of the exhibition in which their artworks would be judged.

During the next 2 months the sculpture workshop was a frenzied workplace. Although their class was only 3 hours a week, students would spend their free time in the studio casting, cutting, gluing and sanding. There was a helpful and collaborative spirit amongst the students instead of a tense competitive one that might be expected. They were feeding off each other's creative energy and building camaraderie in the process. I was delighted with both their artistic as well as personal progress as budding art teachers.

The best teachers are often the ones who stay passionate in their field. According to Robert L. Fried in *The Passionate Teacher: A Practical Guide*, he argues that when a teacher is passionate whether in their field of specialization, in issues facing the world or children, many difficulties can be overcome constructively.<sup>1</sup> This passion becomes infectious to the students they are teaching and provides students with an opportunity to take ownership of their own learning. The passion of the students was visibly tangible in the studio. My hope is that when they become teachers themselves they will exude the same passion when they are teaching their students.

### **Judging**

As their teacher, I excluded myself as a judge for the competition of their final artworks as I felt that it would compromise the integrity of the competition. I had worked too closely with the students and if I were a judge, I may be biased and pick my favorite student instead of the best proposal. The selected judges were comprised of a physical education professor because the work was based on the Youth Olympic Games, and two art professors for their visual art and aesthetic expertise. The judges were told that the winning proposal would be made into a public sculpture commemorating the YOGV on campus and were not given any other guidelines.

It was interesting to observe the judging after having been the main supervisor of the students and knowing the process of the making of each of the maquettes and how the students' problems were solved. The judges were not looking at the art making process as one of the criteria in the competition. The reasoning behind this stems from the winning artwork needing to be fabricated into an iconic public sculpture representing the Youth Olympic Games and not an artwork identified with the concept of "process" and the individual identity of the artist. Visual impact and appropriate concept would take precedence. My own personal opinion and foreknowledge of these very factors would have prevented me from picking the final winning pieces that were selected as I value the process over the final work or at least in equal weight. These discussions of process versus product are imperative and in retrospect should have been discussed with the judges and others involved in the organization of the competition.

### **Controversy**

When the winner was chosen and announced, it was controversial. The student whose work was chosen as the winning entry was one of my worst students in terms of classroom effort, she was always skipping class, asking her friends to help her make her work and drilling the lecturer for ideas and then using them wholesale. None of this was made known to the judges prior to the judging in an attempt to keep the competition fair. The maquette of her work was presented in a visually current and dazzling way using a projection of an image onto a 3 dimensional surface: a

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<sup>1</sup> Fried, R. (2001). *The passionate teacher: A practical guide*. Boston: Beacon Press.

decision on her part that won the day. Consequently she also received the assistance of two experienced artists who happened to be in the gallery at the last minute in problem solving the hanging of the audiovisual equipment at the correct angle. The winner/student teacher/artist dropped out of school soon after winning the competition. I have a nagging suspicion that she feels that being a teacher is too much hard work compared to being an artist. After all she did not have to put in too much effort to win this competition. Did winning the competition make her cut short her journey to becoming an art teacher? This question still haunts me to this day.

The Judges' decision created a debate about the difference between judging an artwork for a competition and grading an artwork in class, and the importance of the process over product in artistic learning. As this was also a class project, I would be grading them. I had to reassure the students that the judges' decision would not affect my assessment of their work and the subsequent grading. In other words, the winning artworks would not necessarily be the highest scores in class.

This scenario can be viewed as a lesson on artistic integrity and questions the idea that winners of competitions are necessarily the most hardworking or deserving; it also raises questions about ethics in art education and the arts. What is the difference between assessment criteria in school and the criteria in the art world?

### **Assessment Criteria in class versus Competition Criteria in the Art World**

Being an artist and being an art teacher are very different occupations. Although they are not mutually exclusive, I find that I have to tell students that what you do to achieve good grades in class will not necessarily get you anywhere in the art world. Lets explore the dichotomy.

#### Criteria for an 'A' student in art class – taken from Assessment Criteria in 'O' Level' Art, Singapore

##### Gathering and Investigation of Information (20%)

-their ability to gather extensive information relevant to the chosen theme and show keen observation and astute perception, and creative interpretation. The investigation is recorded in a detailed and comprehensive manner.

##### Exploration and Development of Ideas/Concepts (20%)

- their ability to show accomplished and expressive ideas/concepts in an interpretative manner. Works produced reflect a sustained original effort and show an informed understanding of artists/artworks and meaningful application of knowledge towards the final work.

##### Aesthetic Qualities (20%)

- their ability to show an in-depth understanding of art elements and principles and use this understanding to exploit expressive and representational possibilities effectively.

##### Selection and Control of Materials and Technical Processes (20%)

- a highly sustained and accomplished manipulation of materials and technical processes. Works are experimental and include an understanding of the expressive potential of materials and processes.

#### Personal Response (20%)

- their ability to create works which are highly experimental, engaging and sophisticated.<sup>2</sup>

#### Competition Criteria in the Art World

Ability to engage an audience and hold their attention by whatever means possible. Period.

Case in point - The Turner Prize is an annual prize awarded to a visual artist under the age of 50 who is living, working or born in Britain. It is Britain's most prestigious art prize and arguably one of the most prominent art awards in the world today with the prize money amounting £25,000 for the winner. The prize has propelled the careers of several well-known artists including Damien Hirst, Anish Kapoor and Racheal Whiteread. Artists are chosen based on an exhibition of their work in the preceding year. Although artists working in all media are included, the prize has been noted to favour conceptual art from which most of its controversy derives.

The 2001 Turner Prize winner was Martin Creed. His winning artwork *Work No. 227: the lights going on and off* is a piece where the lights in an empty room turn on and off at five second intervals controlled by an electrical timing switch. When accepting the prize, he was quoted as saying, "I think people can make of it what they like. I don't think it is for me to explain it."<sup>3</sup> Arguably the most famous art prize in the world, Creed's win that year was certainly controversial and garnered both attempts at deep philosophizing and expressions of pure outrage. It did clarify one thing, contemporary art does not conform to most of the criteria used in the education of art.

Elliot Eisner wrote in 1973:

*Critics of art, literature, music, dance, and poetry do not assign painters, writers, composers, dancers and poets behavioral objectives. Yet critics lose no time in evaluating their work. One does not have to have an objective in order to evaluate or appraise the quality of experience or of art. One can and does look backwards, as it were, not to see if artists realized specific objectives that were assigned in advance but rather to determine what they did achieve. Indeed art at its best enables both critics and artists to expand their criteria regarding the nature and quality of art. Some of the greatest art forms man has produced have been iconoclastic. They fit none of the criteria that existed at the time they were created.*<sup>4</sup>

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<sup>2</sup> [http://www.seab.gov.sg/oLevel/2013Syllabus/6123\\_2013.pdf](http://www.seab.gov.sg/oLevel/2013Syllabus/6123_2013.pdf)

<sup>3</sup> [news.bbc.co.uk/2/hi/entertainment/1698032.stm](http://news.bbc.co.uk/2/hi/entertainment/1698032.stm)

<sup>4</sup> Eisner, E. (1973). *Do behavioural objectives and accountability have a place in art education?* Art Education, 26 no. 5.

Conceptual Art is an art movement that did not fit any criteria that existed at the time it was created, but has had a lasting influence on contemporary art. It peaked in the 1960's whereby the concept of an artwork takes precedence over its visual or aesthetic concerns. It first gained notoriety for being controversial and for challenging existing assumptions and authorities in art. Conceptual art is an example that clearly illustrates the dichotomy between contemporary art and art in the classroom. And who better to illustrate this than Marcel Duchamp, who some consider to be the father of Conceptual Art.

Duchamp once considered himself a painter. His paintings in the early 20<sup>th</sup> century had been inspired by cubism and futurism. The story goes that he tried to enter one of his paintings *Nude Descending a Staircase, No.2* into an art exhibition and was asked to either change the title or to voluntarily withdraw the work. The reason he was told was that, "*a nude never descends the stairs—a nude reclines*"<sup>5</sup>. Disillusioned, he was said to never paint seriously again, choosing instead to become a chess player. In between his chess games, as it turned out, he made headlines in the art world, not for making 'traditional' paintings but for challenging the existing art world. He set out to question several assumptions, 'What is art?', 'Who has the authority to decide what is art?'. The Society of Independent Artists was having an exhibition and the only criteria for entering work into the show was simply for each artist to pay \$6. He then went about to test this seemingly democratic criteria by entering the infamous 'Fountain', 1917, an overturned urinal, under the pseudonym R. Mutt. As it turns out, 'Fountain' was rejected despite the fact that it had fulfilled the only criteria of the \$6 payment. It created a scandal. Everything else is history.

Another Duchamp artwork, *Sixteen Miles of String* tests the boundaries of control and power. The exhibition 'The First Papers of Surrealism' in 1942 invited Duchamp to be one of the exhibiting artists. He waited for the whole show to finish being installed before he crept into the exhibition site just before the opening and proceeded to haphazardly unravel 16 miles of string in the space as if wrapping up the exhibition like a parcel. The string acted as a barrier and the visitors' viewing of the show in the gallery was compromised. Instead of appearing at the opening, he sent a bunch of children in his place, instructing them to create a ruckus and to tell everyone that Duchamp had sent them. This blatant disregard for authority effectively disoriented the crowd. It draws power from childish pranks and an anarchist spirit and sets the tone for later generations of rebellious art making.

Conceptual Art is controversial mainly because it constantly pushes the boundaries of what art is or can be, causing the mother of all questions in the art world, 'What is Art?' This question is both a form of self-critique and self-renewal and is a double edged sword. On the one hand it devalues what art has been defined as up until its arrival; Piero Manzoni famously canned his own excrement and sold it as art and many years later the cans began to bulge and explode in archival museum storerooms, on the other hand, the question liberates art from what it ought to be, allowing artists to create in a more exploratory way in all genres.

What does all this have to do with assessments in art? Simply put, how would you assess a student's excrement in a can presented to you as their final assignment? Here are several possibilities:

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<sup>5</sup> Gunnar, Olsson (2007). *Abysmal: A Critique of Cartographic Reason*. University of Chicago. p. 155. ISBN 0-226-62930-9. Retrieved 2 December 2010.

1. "This is not art so it is graded as an 'F'"
2. "It has been done before, this is plagerism, therefore 'F'"
3. "I don't know if this is art so I might as well not teach what I do not know" and start looking for a new job
4. "This is interesting. What boundaries are you pushing? Where will you go from here?"  
Pass the student for handing in the assignment
- 5.

At this point, I need to clarify that I feel issues in contemporary art such as the above mentioned examples should not be avoided, in fact, it should be taught so that students could decide for themselves what kind of artist/ teacher/human being they want to be. My point is that if a student turned up one day deciding to 'challenge the system' as they sometimes do, he/she would be sorely disappointed with their grade. But in the larger context, what is a grade compared to an epiphany of self?

As Richard Hickman has pointed out,

*It is however not the nature of assessment that is the problem, it is the value which is given to it. There is a need to change the 'mindset' with regard to assessment and to demote the status of it, in art and design, this would entail celebrating the essential qualities of aesthetic making and the activities which make art and design teaching worthwhile, including the freedom to fail and the security of knowing that what is personal, idiosyncratic and challenging of convention will not be judged against some remote and impersonal standard of excellence.<sup>6</sup>*

### **Remote and Impersonal standard of excellence**

The students were outraged at who the winner was because to them, it was a *remote and impersonal standard of excellence*. They judged the work based on their personal opinion of who the winner was as a person and not the artwork itself. It was not because the work was weak or unimpressive or unsuitable for the theme but because they knew what kind of student she was. They were her classmates, and noticed that she was often absent without good reason, asking friends to cover for her, asking friends for help with her work constantly giving excuses as to why she cannot be there to set up her work for the exhibition. In other words, they were upset that she of all people was picked as the winner despite her lack of interest in the class, the subject, the project and the work. They felt she did not deserve it because she did not work for it. This I suspect is the reason most conceptual art, including Martin Creed's win is still so controversial. Not because the work is not interesting, challenging or engaging, it's simply because the effort invested did not merit the reward garnered.

Assessment criteria have long been a debate especially in formal Visual Arts education and the tendency is to try to keep up with the times. Tom Hardy argued that assessment criteria for high school students are too rigid and judging an artwork by documentation of process is rewarding the mediocre and does not fully acknowledge the gifted artist who makes art that has the 'Wow'

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<sup>6</sup> Hickman, R. (2007). (In defence of) whippet-fancying and other vices: Re-evaluating assessment in art and design. In T. Rayment (Ed.), *The problem of assessment: In art & design*. Bristol: Intellect Books.

factor.<sup>7</sup> The problem with assessing art by the ‘Wow’ factor is one of subjectivity, whom does this work ‘Wow’? Is the viewer a white American female or an elderly Asian gentleman? There are definite inherent cultural biases that are not accounted for in the assessment of art assignments. (Atkinson, D. 2011)

Is there a problem with rewarding product over effort? Many people seem to still believe in the product of the artistic genius and that they have the ability to tell the difference between the good and the bad. People are passionate about the art debate because they trust their own taste over everyone else’s. This is only a serious problem if you are a person in power deciding who gets the ‘A’ or who wins the prize. In general, in the world of commerce it is not a problem at all, in fact, it is how consumerist culture works. Messages from advertisers constantly tell us what truth and beauty is until the brainwashing sets in and we all desire the same thing. (Nigel, S. 2005) This is also how the art world works. How did the Mona Lisa become one of the world’s most coveted paintings? Did the world take a vote and decide? Or was it ingenious publicity by the world’s most powerful art museum?

*I love the gallery, the arena of representation. It's a commercial world, and morality is based generally around economics, and that's taking place in the art gallery.*<sup>8</sup>

Jeff Koons is arguably the wealthiest living artist of our time. And if one judged the success of an artist by fame and wealth, he would come up tops. His self-propagated legend is that he started as a young Wall Street trader, and he was extremely talented at making money. He understood what people wanted, and saw an opportunity to make a product that would sell for much more than the sum of its parts, and that product he deduced would be his art. His work range from pornographic sculptures to giant balloon dogs, objects that people covet, objects many would argue, has the ‘Wow’ factor. *Tulips* which was sold for US\$33,682,500 in 2012 is his latest auction world record. Koons has a ‘factory’, much like Andy Warhol’s, staffed by 90 technicians that produce his artworks upon demand. He has been sued several times for copyright infringement over his use of pre-existing images and artworks of other artists in his own works, and has lost.<sup>9</sup>

This plagiaristic behavior would not be condoned in a school setting much less taught. But why not? Koons is one of the most famous and wealthy artists in the world. Do we not want our students to know how he became successful so they can model their careers after him? We would inspire our students with stories about Nobel laureates and how they achieved what they did, so why not inspire them with Koon’s story? Do we not want our students to succeed? This further emphasizes my point about the discrepancy in the art world and that of the education world. In education, we would like to think of ourselves as purveyors of morals but in the art world as Koons suggests, ‘...*morality is based around economics...*’ Perhaps this is a good topic for discussion on plagiarism and morality.

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<sup>7</sup> Hardy, T. (2007). As level art: Farewell to the 'wow' factor? In T. Rayment (Ed.), *The Problem of Assessment: In art & design* (p. 49). Bristol: Intellect Books.

<sup>8</sup> Ottman, K. (1986). Jeff Koons. *Journal of Contemporary Art*, Retrieved from <http://www.jca-online.com/koons.html>

<sup>9</sup> *United Features Syndicate, Inc. v. Koons*, 817 F. Supp. 370 (S.D.N.Y. 1993), and *Campbell v. Koons*, No. 91 Civ. 6055, 1993 WL 97381 (S.D.N.Y. Apr. 1, 1993).

## Competition within Education

*Competition - the activity or condition of striving to gain or win something by defeating or establishing superiority over others*<sup>10</sup> is the opposite of cooperation. Alfie Kohn, asserted that competition actually has a negative influence on the achievement levels of students, and that it "turns all of us into losers" (Kohn, A. 1986)

*The real alternative to being Number One is not being Number Two; it is dispensing with rankings altogether*<sup>11</sup>

Competition also implies that there is a definitive goal in mind. In a running race, for example, it would be the finish line. In a quiz, the goal would be to choose the most correct answers. In visual art, as already mentioned, the criteria are at best subjective, which puts the assessor in the position of power. The assessor having inherent biases, determined by factors including cultural background and socio-economic upbringing will try, impossible as it may be, to be objective in their judgment. Competition also denotes that there is a definite 'winner' and several sure 'losers'. Without set criteria, the 'winner' will not know how or why they have succeeded and the 'losers' will not even have had a benchmark to compete against in the first place.

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<sup>10</sup> <http://oxforddictionaries.com/definition/english/competition?q=competition>

<sup>11</sup> Kohn, A. (1992). *No contest: The case against competition*. Boston: Houghton Mifflin.



Image of student with his artwork

## Process based Assessment

Assessing student's working processes on the other hand can prove to be more rewarding for the student and the teacher. Charting a student's progress based on their own growth and creative output correlates with the creative arts principle that there are no right or wrong answers. The teacher plays the role of advisor and facilitator in their learning journey, learning and discovering new possibilities along the way together with the student instead of holding to their own 'infallible' tower of knowledge. I believe this second approach is an area that needs to be addressed through further research in the field of arts education. Can process evaluation replace other types of assessment or take up a greater percentage of other types of assessment scores? It would seem a necessary possibility to explore given the significance of process in the development of the last century of art making.

Assessments according to Hickman should be part of the artistic process and serve to, help students to recognize their own achievements, enable reflection, clarify teachers' aims, cover the syllabus, support students' development, document students' progress, and provide criteria to support professional judgements.<sup>12</sup> All of the benefits of the artistic process seemed to be nullified by the judging of the work and the choosing of an ultimate winner. The emphasis on the end product rather than the journey of process discourages creativity and experimentation. (Ross, M. 1986) If teachers teach in order to achieve very specific goals, students in order to please and receive validation will try to conform to the criteria, rules and goals given. Those who do not, are not able to or refuse to conform will be penalized and labeled difficult or unintelligent. As Ken Robinson has aptly put it,

*...if you're not prepared to be wrong, you'll never come up with anything original...And by the time they get to be adults, most kids have lost that capacity. They have become frightened of being wrong.*

*...And the result is that we are educating people out of their creative capacities...I believe this passionately, that we don't grow into creativity, we grow out of it. Or rather we get educated out of it...*<sup>13</sup>

I would therefore argue that competition has no place in the teaching of art because it is based upon establishing ones superiority over others. This quality of "better than" is known to be a factor in dampening creative endeavor. The role of art education should be a sanctified ground where learning through exploration, collaboration, dialogue and encouragement are standard practice. Providing students with the opportunity to experiment and find solutions for their own enquiries creates an atmosphere that allows for the making of mistakes without the fear of being penalized. This fostering of creativity empowers students to be confident in their own voices instead of having to seek constant validation. If and when students do choose to enter into competitions of their own volition, they will understand that it is only one of many avenues and opportunities that they will encounter in their lifelong development and will not feel it is the be all and end all of their career or their art making.

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<sup>12</sup> Hickman, R. (2007). (In defence of) whippet-fancying and other vices: Re-evaluating assessment in art and design. In T. Rayment (Ed.), *The problem of assessment: In art & design*. Bristol: Intellect Books.

<sup>13</sup> [www.ted.com/talks/ken\\_robinson\\_says\\_schools\\_kill\\_creativity.html](http://www.ted.com/talks/ken_robinson_says_schools_kill_creativity.html)

*The Role of Higher Education System in Changing Students' Attitude toward their  
Field Study (Major)*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstract

Many of students that accepted in universities of Iran through entrance examination haven't interested in or positive attitude about their field study, which has essential role in their learning, participation and achievement. This descriptive-correlation research was conducted to determine the role of higher education system in changing attitude of students about their field study in faculty of agriculture. Likert scale in five level used for identifying students' attitude about their majors. Mean rate more than 3 in Likert scale show positive attitude. Sample students selected by stratify random sampling of 11 majors in faculty of agriculture of Tabriz University (n=300). Results showed that: 33% of students have positive attitude to their majors, students' attitude average were 3.35 and seniors' average were a few more than juniors. Senior students' attitude about their major has increased a few during 4 year educating in the university. Females have positive attitude than males. Gender, Field study, Interested in agriculture and live in village, Engineer degree, Place of birth, profitability of scientific agriculture have significant relation with students' attitude to their field study that could create positive attitude in students about agricultural majors.

Keywords: Agricultural field, Attitude, Educational course, Higher Education, Major.

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## 1. Introduction

High school graduates in Iran for continuing education in public universities should take part in the entrance examination. Based on rating in entrance exam, about 10 - 15 percent of 1.5 million Participants at the entrance are accepted. Since education is free in public universities, university degree has social reputation in the community and increases the possibility of finding a suitable job, high school graduates according to their rank in the entrance exam, trying to be admitted in one of university courses. They could select about 100 fields, that haven't serious interest to many of them. If, they accepted in certain of these academic fields, certainly won't have sufficient interest and motivation for learning. This caused, lack of student participation in learning process, wasting time, energy and capital of the country.

In these conditions, the system of university education has an important role in creation or strengthening the motivation and positive attitude to academic field. Studies have shown that attitudes have an impact on behavior change and learning and according to them can predict and control behavior (Seif [6], Ajzen and Fishbin [3]). The research showed that students' previous knowledge of field make a positive attitude toward field and this has an impact on their learning and achievement (Abadi and Zamany [1], Dyer and Osborn [4], Chun and Julia [7]). Hedjazi and Omidi [9] and Entwistle [5], showed that one of the factors that impact on student's achievement is their attitude and interest to their field. Zamani and Azadi [2] and Hedjazi et al [8], Believed that the positive attitude to major is causes of success in learning, educational activities and employment. As attitude is a behavioral characteristic that can be changed or strengthened through education. By cognition attitudes of the students in their academic disciplines, we can predict their behavior in school and design appropriate higher educational program for creating a positive attitude and interest to the field. In this research we want to know: If, agricultural higher education system could change or strengthening the attitude and motivation of students toward their majors? Was significant difference between senior and junior students attitude toward their majors?

## 2. Methodology

This survey was descriptive-correlation, applied and attitude- approach research. Research device was a questionnaire with closed answers about properties of agricultural higher education contents, position of agriculture in society. Students' attitude were estimated by answering to closed-ended questions in Likert scale with five levels. Average score of responses was calculated. Average more than 3 was considered as positive attitude towards the major. Statistical population was senior and junior students in 11 department of agricultural faculty of Tabriz University that sample students (n=300) selected by stratify random sampling.

### 2.1. Hypothesis

There are differences between senior and junior students' attitude average. (U-Test)

There are differences between male and female students' attitude average. (U-Test)

There are differences between departments' senior students' attitude average. (Kruskal- Wallis Test)

There are differences between departments junior students' attitude average. (Kruskal- Wallis Test)

Birth place was effect in attitude of students.(U-Test)

## 2.2. Variables

Students' attitude average (ordinal scale) was dependent variable. Gender, place of birth, Department, kind of student (senior or junior), Interest in Rural and Agriculture, Profitability of Scientific Agriculture and Engineering Degree was independent variable. U-test, Kruskal-wallis test and Spearman correlation were used for test the research assumptions by SPSS package. (Table 1)

## 3. Conclusion

Students' diploma grade point average was 17.2 that show they were top grade graduates. Students' interest mean to agriculture were 3.35 and seniors' mean were more than juniors. This means that educational system couldn't change or increase students' interests to agricultural activities in 4 year. 31% of students only for entering to university, selected agricultural majors and don't have any interest or knowledge about agriculture. More than 40% of seniors and juniors selected agricultural majors instead of other majors because of graduate with engineer diploma. 33% of students have positive attitude and recommended to other study agriculture majors. 58% said if participate in entrance exam again, selected other majors. This showed that content of agricultural higher education system couldn't effect to students' attitude and interest to agriculture. Attitude average between senior and juniors were no significant. But average of senior toward their majors were a few more than juniors. Females had positive attitude toward their majors than male and difference between their averages were significant. Attitude average difference between departments' students was significant. Students of Livestock department had positive attitude more than the other students. Machinery department students had positive attitude less than the others. Students, who were born in village, had positive attitude toward their majors than the other and difference between two groups was significant. Based on students opinion, gender ( $r = 0.1$ ), field study ( $r = 0.4$ ), interested in agriculture and live in village ( $r = 0.4$ ), profitability of scientific agriculture ( $r = 0.3$ ), Engineering Degree for graduates ( $r = 0.2$ ) and Place of birth ( $r = 0.3$ ) has significant relation with students' attitude. By the way this variables could create or strengthening the positive attitude of students to their agricultural field.

## 4. Recommendation

As 58% of students intended to change their majors. This result showed that higher education system content couldn't affect the students' attitude and interest during the study. So, governmental universities must review content and structural of agricultural higher education system as soon as possible and match them with students' interest and labor market. Students before selecting university majors, getting to know about properties of majors by mass media programs or in high school work shops. Government and private sector improve agriculture labor market. So, students with interest and hope of future employment try to learn.

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Table1- Variables, Measurement scales, Hypothesis Test

Variable	Measurement Scale	Test
Education Level	Nominal	<b>Mann- whitney</b>
Gender	Nominal	<b>Mann- whitney</b>
Field Study(department)	Nominal	<b>Kruskal- WaLlis</b>
Interest in Rural	Ordinal	<b>Spearman</b>
Interest in Agriculture	Ordinal	<b>Spearman</b>
Profitability of Agriculture	Ordinal	<b>Spearman</b>
Engineering Degree	Ordinal	<b>Spearman</b>

Table2- Spearman Correlation Coefficient (r)

Variable	r
Gender	<b>0.1*</b>
field study	<b>0.4*</b>
interested in agriculture	<b>0.4*</b>
profitability of agriculture	<b>0.3*</b>
Engineering Degree	<b>0.2*</b>
Place of birth	<b>0.3*</b>

\*Significant level= 0.05

*Methods to Develop of the Moral Behavior of Pharmaceutical Technique Students in  
Sirindhorn College of Public Health, Yala, Thailand*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

The purposes of this research were (1) to use methods improving students' ethical behavior; and (2) to evaluate the ethical behavior of pharmacy technician students by parents, teachers and students. The data collecting instrument were methods improving students' ethical behavior (parents involved activities, religious activities and classroom activities), a questionnaire and an evaluation form. Data analysis used mean, standard deviation, t-test and content analysis.

The research findings revealed that: 1) The results of using the developed method

showed that encourages families to have a good relationship between parents and students. Religious activities influenced as reminder to students to practise their religion is the right way. Classroom activities affected students to improve their inappropriate behavior and take pride in doing good deeds and; 2) The results of students' behavior showed the increase of some behavior was significant. For example, patience, conservation and saving, responsibility, generosity, punctuality and critical problem solving. Conversely, integrity, politeness, courage, dedication was not significantly.

Key word: Moral Behavior, Pharmacy Technician Students

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## **1. Introduction**

All 7 Sirindhorn Colleges of Public Health under Praboromarajchanok Institute are responsible for producing health personnel to work in public health care service system. The pharmacy technicians have technical and supportive tasks for pharmacy. The pharmacy technicians work under direct supervision of a licensed pharmacist, and perform many pharmacy-related functions to meet the needs of the users, society, and community.

The Diploma of Public Health Program (Technical Pharmacy) of Sirindhorn College of Public Health under Praboromarajchanok Institute is currently 2-year curriculum.

Educational institutes in Thailand have realised the importance of providing quality of learning and the promotion of virtue ethics to student to be knowledgeable and a better life in a normal social life as well as to help society. (National Education Act., Thai, 1999)

To accomplish that the development of moral behavior and professional ethics is a crucial subject for the of pharmacy technician students. This is a three credits subject emphasizing on fundamentals of moral and professional ethics, relationship between ethics and role of public health personnel, public health reasoning usage in problem solving and living, moral development for being role model in living and working. Kohlberg (1975) defined moral development as a process which is expected to change according to moral reasoning. According to Kohlberg (1984), each new cognitive structure transforms and displaces the structure that defines the previous stage, causing stages to develop in an invariant developmental manner.

Thai life and culture has been refined from the family and the teachings of religion as a main anchor for the individual to behave in a proper way. Students' ethical behavior development method has to be integrated several organisations such as family, religion and educational (Tidaporn, 2003:46, Suvimon and Noungluck, 2000: 19-21) The ethical development of students' ethical behavior that is useful and important force in developing countries in the future.

## **2. Research Objectives**

- 2.1 To use methods of the moral behavior development of pharmaceutical technique students.
- 2.2 Evaluate the ethical behavior of pharmacy technician students.

## **3. Definitions**

### **3.1 Method of the moral behavior development**

Means that activities were designed to develop the entirely appropriate students' moral behavior combined with activities in family, religious and classroom. The moral behavior of students was at least one semester.

### **3.2 The family activity**

Means that leisure activities of students and also the classroom activities with their parents.

### **3.3 The religious activity**

Means that the daily religious activities and the High Holy Days.

### 3.4 The academy activity

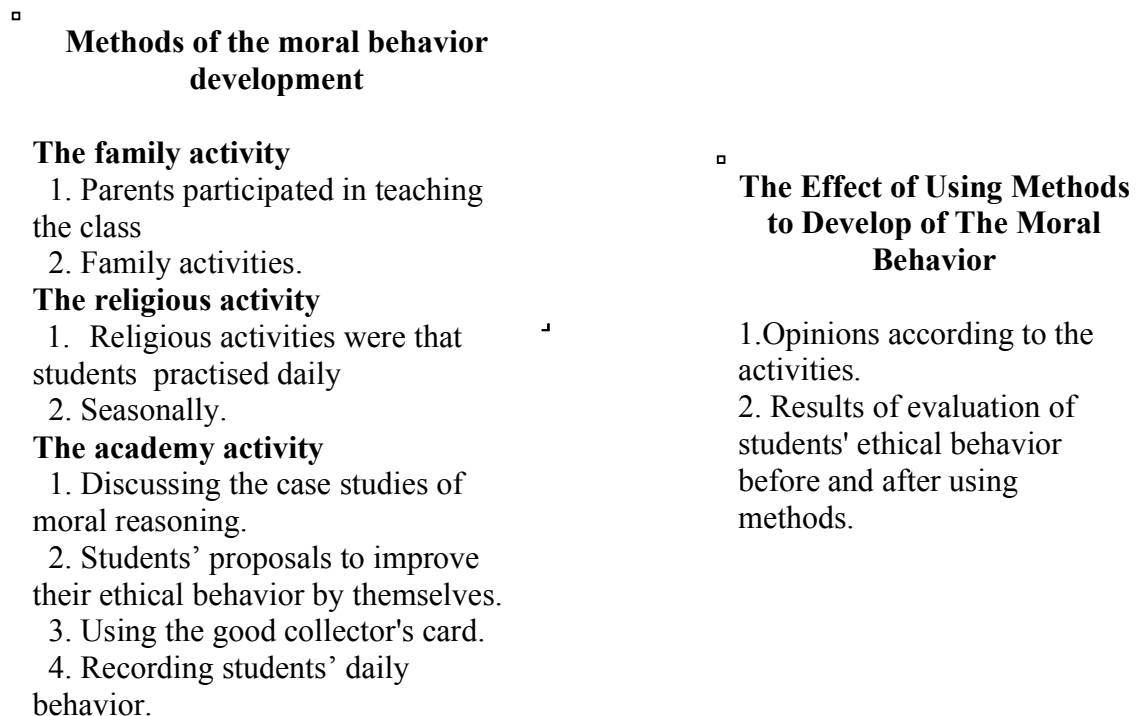
Means that activities for discussing the case of moral study, the proposal of developing ethical behavior, the good collector's card and the student diary.

### 3.5 The moral behavior of students

Means that ten behavior from desirable feature of the pharmacy technician curriculum and the expectations of employer consisted of responsibility, integrity, patience, generosity, conservation and saving, politeness, punctuality, critical problem solving, courage, dedication

## 4. Research Conceptual Framework

The researcher analyzed curriculum of Diploma of Public Health Program (Technical Pharmacy) of 2007, literatures, and related research to establish moral behavior of students. Then, the researcher surveyed the opinions from the related persons. The conceptual framework has been shown as figure 1



**Figure 1:** Research Conceptual Framework

## 5. Research Methodology

### 5.1 Population and Sample:

Parents, teachers and students of Sirindhorn Colleges of Public Health, Yala, Thailand

### 5.2 Research method was as follows:

The research was divided into two phases;

**5.2.1 Phase I :** applying the development of moral behavior to the students of pharmacy technicians about five months

- 1) Study related documents.
- 2) Coordinate and clarify the activities to the parents.

- 3) Clarify the activities of teachers.
- 4) Inform the student activity and behavior.
- 5) Follow-up student activities.

**5.2.2 Phase II :** evaluating the students' behavior by parents, teachers and students.

### **5.3 Research Instrument:**

**5.3.1 Method of the moral behavior development:** consisted of activities three domains

**1) The family activities;** parents participated in teaching the class and family activities.

1.1) Parents participated in the class for teaching for three times per semester. They shared their belief with students how to dribble, work experience, occupation, etc.

1.2) Parents and students had participated in some family activities at least once a week. Most students helped their parents do the housework.

**2) The religious activities;** religious activities were that students practised daily and seasonally.

2.1) Religious activities were that students practised daily; prayer and chanting monks.

2.2) Seasonally religious activities, particularly, fasting during the month "Ramadan" and activities of the Hari Raya day that Islam students joined. For Buddhist students did the merit activities on the day of the tenth month.

After religious activities finished, the students' perceptive reflection of these activities and the use of collaborative learning in classroom were reflected.

**3) The academy activities;** classroom activities consisted of moral case studies, merit collection card and behavior diary. All events demonstrated that the reflection of outcome from students and teachers. This consisted of the following activities.

3.1) Discussing the case studies of moral reasoning. These studies were eight cases to practice students' ethical reason for solving general problems.

3.2) Students' proposals to improve their ethical behavior by themselves. For example, the development of voluntary generosity to help others, responsibility, punctuality, and conservation and savings.

3.3) Using the good collector's card.

Teachers would assess students' behavior and give student the card when he/she expressed the proper moral behavior. In addition, the students' ethical behavior was focus on responsibility, integrity, generosity, punctuality. Moreover, it would depend on the discretion of the instructor.

3.4) Recording students' daily behavior that showed the following issues:

3.4.1) Their impressed behavior or the weak points to be improved.

3.4.2) The reason for such behavior.

3.4.3) The outcome of that behavior.

The students recorded their daily behavior at least once a week and the teachers reflected their behavior by comments.

**5.3.2 The questionnaire of the students' opinions** towards activities used to develop students' ethical behavior was a 5-rating scale

Section 1: Individual information

Section 2: Opinions regarding activities to develop students' ethical behavior

Section 3: Recommendation with open-ended questions

The rating scales were rated with the score as follow as:

1 = Lowest

- 2 = Low
- 3 = Medium
- 4 = High
- 5 = Highest

The criteria was interpreted as follows: Mean between

- 1.00-1.50 = Lowest
- 1.51-2.50 = Low
- 2.51-3.50 = Medium
- 3.51-4.50 = High
- 4.51-5.00 = Highest

### 5.3.3 The evaluating form of ethical behavior of students.

The questionnaire used to assess the results of students' ethical behavior after finishing all activities by rubric scoring form were created by researcher and validated by a panel of three people and make the modifications suggested before using it.

### 5.4 Data collection:

For data collecting, there were two parts consisted of students' opinions towards all activities that collected by questionnaire when all activities finished and rubric scoring assessment of individual student behavior that used to evaluate before and after all approaches.

### 5.5 Data analysis:

5.5.1 Quantitative data was analyzed and presented as percentage, frequency, mean, standard deviation and pair t-test

5.5.2 Qualitative data was analyzed by using content analysis.

## 6. Results

### 6.1 The activities to develop students' ethical behavior.

**Table 1** Means of samples' opinions according to the activities.  
(Top three average scores of each activity part)

Item	Mean	S.D.	Level
<b>The family activities</b>			
To promote good relationships between parents and students	4.68	.48	Highest
Parents contribute to the development of students' ethical behavior	4.54	.51	Highest
Encourage students to make good	4.46	.51	High
<b>The academy activities</b>			
Moral behavior development projects contribute to ethical development of students	4.68	.51	Highest
Recorded daily behavior can help improve students' inappropriate behavior	4.44	.62	High
The case study allows students to solve problems by reasoning	4.29	.71	High

**Table 2** The daily record of student behavior. (Top three percentage of the behaviors)

Recorded daily behavior	The reason for such behavior.	The outcome of that behavior.
<b>Behavior to impress (75%)</b>		
1. Completely work assignments (14.9%)	A role that needs to be done	Work is completed on time.
2. Help others and help their parents to work (13.4%)	To lighten the burden on parents	Good relationships within the family.
3. Religious rites (11.8%)	Important to follow the religion	Feel good
<b>Behaviors that need to be improved</b>		
1. Not punctual and Go to class late (14.6%)	- No plan - Going to bed late.	Loss quality of their work.
2. Irresponsible (13.4%)	Lack of preparation	Others are not convinced
3. Dispute with someone without a reason (13.4%)	Can not control emotions	Make others people sad.

**Table 3** Satisfaction of students and teachers to use the good collector's card.  
(Top three average scores)

Item	Mean	S.D.	Level
Regarded as a good student.	4.64	.52	Highest
Encourage students to take pride in doing good deeds.	4.42	.59	High
Encourage students to make good.	4.36	.62	High

Table 1-3 showed the topics with the highest level were family activities to promote good relationships between parents and students ( $\bar{x} = 4.68$ ) and moral behavior development projects contribute to ethical development of students ( $\bar{x} = 4.68$ ). For student dairy to record their daily behavior showed that most impressing behavior is recorded 75.5 percent were completely work assignments, help others and help their parents to work, and behaviors that need to improve (24.5 percent were not punctual, and irresponsible, dispute with someone without a reason). Students were improved bad behavior after review their record daily behaviors. Teachers and students were satisfied with the loyalty to the highest level regarding as a good student and encourage students to take pride in doing good deeds.

## 6.2 Evaluating the students' behavior

**Table 5** Evaluation of students' ethical behavior by all parties before and after using methods to develop of the moral behavior.

Item	Pre	Post	Sig.
Responsibility	3.41	3.95	.025*
Integrity	4.10	4.34	.172
Patience	3.42	4.39	.001**
Generosity	3.97	4.46	.036*
Conservation and savings	3.10	3.84	.008*
Politeness	4.02	4.39	.088

Punctuality	3.15	3.75	.014*
Critical problem solving	3.27	3.89	.010*
Courage	3.42	3.89	.065
Dedication	3.64	3.90	.191

\*P< .05, \*\* P< .01

Table 5 the evaluation of students' ethical behavior showed the increase of some behavior was significant. For example, patience, conservation and saving, responsibility, generosity, punctuality and critical problem solving. Conversely, integrity, politeness, courage, dedication was not significantly.

## 7. Conclusions and Discussions

There were three domains applying in the methods to develop students' moral behavior. First, parents involved activities. Second, religious activities. Third, classroom activities. The findings in the activities which develop students' ethical behavior revealed that: The topics with the highest level were family activities promoting good relationships between parents and students ( $\bar{x} = 4.68$ ) and the moral behavior development projects conducted by the students ( $\bar{x} = 4.68$ ). For the students' diaries recorded their daily behavior revealed that the impressive behaviors (75.5 percent) were getting their assignments done perfectly, helping others and their parents to work, and the behaviors that need to be improved (24.5 percent) were tardiness, irresponsibility, dispute with someone without proper reason. Students improved their bad behavior after reviewing their recorded dialy behaviors. Both teachers and students were satisfied with the merit collector's card to the highest level regarding as a good student and encourage students in doing good deeds. The findings of using the method to develop the students' moral behavior showed that the students' behaviors which significantly developed were patience, conservation and saving, responsibility, generosity, punctuality and critical problem solving. But integrity, politeness, courage, dedication were not significantly developed.

Students' ethical behavior development method has to be integrated several organisations such as family, religion and educational institute. The result of combination would be successful if the complementary activities offered to students for long time, so students may change their opinions and behavior more permanent than short period.

The reason why students thought their ethical proposals might develop their behavior is that students had authority to choose what ethical behavior they would like to improve and design the activities by themselves. As a result, the activities can promote students to learn their needs and understand their soul. In addition, the activities can provide the chances for students learning how to work as teams. They can share ideas and exchange in the suitable way that based on the difference of view points. Moreover, this can improve their both good leadership and followership; also train them a systematic working with critical thinking. Furthermore, the activities can make students relax from stress of study.

Most students and teachers felt satisfied with the good collector's card at the highest level because they believed that this method can encourage student do merit and also make them proud of the actions, so they may attend to do the merit actions again. Student supporting not only use the good collector's card, but also offer them a merit certificate, presents and announcing the actions to colleagues.

The good way for student self-assessment in terms of ethical behavior is the dairy record. Student can learn their strength and weakness point by their evaluation and teachers' comments. They knew what a good or bad behavior was and how to continually progress their behavior to peacefully adjust their life at the social nowadays.

The view points of parents, teachers and students towards students' ethical behavior particular of patient, saving, responsibility, generosity, punctuality and critical problem solving showed the increase of some behavior was significant. This maybe because the projects that students manage by themselves can improve their ethical behavior in their quality process (plan, do and check) in terms of ethical and academic aspects. Consequently, this process can promote students in a good way of patient, saving, responsibility, generosity, punctuality and critical problem solving. In terms of the using reason into solving problems, there were many activities that support students to have critical thinking and apply in their life style such as case studies and dairy. For patient attribute, not only classroom activity can offer patient feature for students, but fasting during the month "Ramadan" can challenge students to be more patient.

The behavior of integrity, courteousness of students was not increased significantly because the results of assessors' evaluation for students before and after were the same high level of behavior that was an appropriate behavior.

Student behavior of courage and dedication was not different significantly between before and after using the method to improve ethical behavior of students. This maybe the aims of activities were not clearly supported the ethical behavior, but courage and dedication behavior was often integrated into almost all activities, as the result, the next study should indicate clearly the aims and guidelines in order to develop students' behavior obviously.

## **8. Recommendations**

### **8.1 Recommendation for further use.**

Other curriculums in the college could apply these following activities to develop the students moral behavior considering real situation, timing, and geographic location.

### **8.2 Recommendation for further studies.**

8.2.1 The next study should monitor the students' behavior for long term

8.2.2 Educational institute and family should collaborate together to set out how to develop students' ethical behavior and continually participate the activities.

## **9. Acknowledgements**

9.1 Director of Sirindhorn Colleges of Public Health, Yala, Thailand.

9.2 Parents of pharmacy technician student class 24 and 25

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*Dichotomy in the Design Studio: Adapting to New Blended Learning Environments*  
[Stage 2]

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

In a study aimed at better understanding how students adapt to new blended studio learning environments, all undergraduate and masters of architecture students at a large school of architecture in Australia, learned a semester of architectural design in newly renovated, technology embedded, design studio environments. The renovations addressed the lessons learned from a 2011 pilot study of a second year architectural design studio learned in a high technology embedded prototype digital laboratory. The new design studios were purpose designed for the architecture students and adapted Student-Centred Active Learning Environment for Undergraduate Programs design principles.

At the end of the semester, the students completed a questionnaire about their experiences of learning in the new design studio environments. Using a dual method qualitative approach, the questionnaire data were coded and extrapolated using both thematic analysis and grounded theory methodology. The results from these two approaches were compared, contrasted and finally merged, to reveal five distinct emerging themes, which were instrumental in offering resistance or influencing adaptation to, the new blended studio learning environments.

This paper reports on the study, discusses the major contributors to resistance and adaptation, and proposes points for consideration when renovating or designing new blended studio learning environments. This research extends the 2011 pilot study by the same authors: 'Dichotomy in the design studio: Adapting to new blended learning environments'.

Keywords: *Architectural education, blended studio learning environments, adaptation*

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## Abstract

In a study aimed at better understanding how students adapt to new blended studio learning environments, all undergraduate and masters of architecture students at a large school of architecture in Australia, learned a semester of architectural design in newly renovated, technology embedded, design studio environments. The renovations addressed the lessons learned from a 2011 pilot study of a second year architectural design studio learned in a high technology embedded prototype digital laboratory. The new design studios were purpose designed for the architecture students and adapted Student-Centred Active Learning Environment for Undergraduate Programs design principles.

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**Keywords:** *Architectural education, blended studio learning environments, adaptation*

## 1 INTRODUCTION

Diversification and expansion of global higher education in the 21st century, has resulted in learning landscapes for architectural education that can no longer be sustained by the traditional model. Recent modifications have resulted in learning landscapes that cannot be defined by a solitary model. Changes have resulted because of surging student numbers, extensions to traditional curricula, unconventional/new teaching and learning practice and modified geographical and pedagogical boundaries (Neary et al., 2010).

The influx of available new technology has helped to democratise knowledge, transforming when, where and how learning takes place, and changing perceptions of traditional learning landscapes (JISC, 2006; Neary et al., 2010). Mobile computers combined with wireless technology, have completely transformed the educational world; students have turned nomad[ic], engaging in conversations and thinking across traditional campus spaces (Alexander, 2004; Fisher, 2005b). Corporate clients and industry benefactors now share the campus with full-fee paying local students, international students and postgraduate students, in an environment that has grown to be a lot more commercially orientated (McLaughlin & Mills, 2008). Growing pressure to provide flexible learning strategies whilst also providing quality research and superior teaching, has accompanied these changes. In many of Australia's larger universities, the acquisition of research funding and publication output is considered to be the major priority, leaving academics with reduced time to focus on developing innovative learning curricula, which respond to these contextual changes.

Core research in this field is emerging from the UK and the USA, however little research has explored this in depth within an Australian context, and more specifically, within a defined individual academic discipline. While facing comparable changes and pressures, architecture continues to be taught in similar environments, using similar pedagogical approaches, to those first developed when it moved from an apprenticeship model to national higher education system's in the early nineteenth century at the École des Beaux Arts (Kostof, 1977).

The purpose of this paper is to investigate how architecture students adapt to new blended studio learning environments, and how these, in turn, could be designed or renovated, considering some of these external contextual issues. Active architectural learning environments generally support dynamic project based and collaborative learning models, which have recently become a lot more common in disciplines outside of design and the arts. It is anticipated that the implications for this study, therefore, may well have a positive impact beyond the architectural studio learning environment.

## 2 REVIEW OF BACKGROUND LITERATURE

### 2.1 Space

Research shows that 50% of commencing students consider the facilities and appearance of buildings on campus, when deciding which university to enroll in (McLaughlin & Mills, 2008). Winston Churchill's observation during the debate on rebuilding the House of Commons after the war applies to university buildings as well: "We shape our buildings and afterwards our buildings shape us" (Churchill, 1943). Physical learning environments are, therefore, still important to students.

The most successful new university buildings are those that allow students to take responsibility for managing and supervising their own learning environments; and in addition to this, where they can help to reinforce the learning of their peers (Neary et al., 2010). These environments should be flexible, technologically rich, open 24/7 and with a sufficient occupation capacity to allow different disciplines to connect - in essence, a fusion between a library and a common

room. A modified spatial arrangement can assist to break down the pedagogical barriers which exist between students and teachers, and allows students to immerse themselves within their academic environment, rather than only being consumers of dispensed knowledge (JISC, 2006; Neary et al., 2010).

Further investigations into the methods through which research or critical-thinking by students and teachers can help to shape the physical environment, needs to be undertaken (Fisher, 2005b). When questioned on how buildings/spaces should be realised, Neary references Virginia Woolf's 1938 book 'Three Guineas,' on how to build a university on a very tight budget. Woolf, a feminist and pacifist, believed that buildings needed to be freed from the traditions of competition and acquisition, which she believed to dominate research and teaching; and she believed that the design of institutional buildings should go back to basics. She asserts:

It is young and poor; let it therefore take advantage of those qualities and be founded on poverty and youth. Obviously, then, it must be an experimental college, an adventurous college. Let it be built on lines of its own. It must be built not of carved stone and stained glass, but of some cheap, easily combustible material which does not hoard dust and perpetrate traditions. Do not have chapels. Do not have museums and libraries with chained books and first editions under glass cases. Let the pictures and the books be new and always changing. Let it be decorated afresh by each generation with their own hands cheaply (Woolf, 2008, para. 46).

As Woolf proposes, new, innovative and academically challenging environments can be designed in a spirit of poverty (Woolf, 2008). Unfortunately many of the issues that Woolf detailed in 1938 are still not resolved today, over 70 years later.

## 2.2 Pedagogy: Active Learning

Research systematically shows us that traditional lecture methods, where lecturers stand at the front of the classroom and talk while students are expected to sit quietly and listen, continue to dominate higher education classrooms (Barr & Tagg, 1995; Bonwell & Eison, 1991; Jamieson, Fisher, Gilding, Taylor & Trevitt, 2000). This is notwithstanding an abundance of evidence in research which points to the success of, and student's preference to engage in, active learning approaches. Active learning simply requires students to be actively involved in their learning while engaging in higher-order thinking tasks such as analysis, synthesis, and evaluation. Bonwell and Eison argue that in order to promote successful active learning, instructional activities must be aligned to support students to learn through doing [or observing], followed by thinking about what they are doing [or observing] through dialogue with self or others (1991). Dale argues that when actively learning, students generally remember 90% of what they do and 70% of what they say and write, but conversely when passively learning, student only remember 30% of what they see, 20% of what they hear and 10% of what they read (1969).

In most Australian universities, traditional face-to-face teaching takes place in large, tiered lecture theatres, generic flat-roomed tutorial rooms and in some specialised discipline specific classrooms or laboratories. The size, form, technology and furniture within these spaces tends to dictate limited pedagogical approaches which can be applied within them (Jamieson et al., 2000). These environments are generally designed to support traditional Mode 1 teacher-focused presentations, making active learning experimentations difficult to both achieve and sustain. The learning environment plays a very important role in supporting the pedagogical activities contained within it.

In order to be effective, teachers of today need to consider both methodology and context. Firstly methodology; Teachers have to learn to communicate in the language and style of their students, less step-by-step, but going faster, more in parallel and with more random access (Prensky, 2001). Secondly content: This should ideally be a fusion of legacy content [traditional

curriculum] and future content [digital and technological] (Prensky, 2001). Teaching both legacy and future content in the language of digital natives, requires a complete overhaul of traditional teaching approach and curriculum content.

### 2.3 Pedagogy: Blended Learning

Considering the emerging phenomena of interactive web 2.0 tools and on-line social media now available, Behling and Klingner (2010) seek to understand which of these tools could be successfully incorporated into the classroom, and what this technology will allow educators and students to achieve in the future. They explore the pedagogical approaches that support the blending of new technologies with traditional face-to-face learning. A key issue is teaching students to be critical thinkers and evaluators of information found in an online environment. While most students of today do have computer and technological skills, many of them do not have the ability to apply these skills for deeper thinking and learning. The careful selection and use of web 2.0 tools such as social networking sites, YouTube and course management systems, where matched appropriately to course content, can allow students and educators to balance professional standards, accreditation requirements and mandated learning landscapes (Behling & Klingner, 2010).

Blended learning effectively engages students with their learning, by providing them with highly interactive learning experiences (Garrison & Vaughan, 2008). If educators take advantage of the online skills that most students already have, they can develop blended learning techniques to engage students with active participation, interaction and deeper learning (Behling & Klingner, 2010). Inclusive educators therefore need to be well adept at amalgamating their discipline expertise with suitable applied interactive technologies, within which students can learn to confidently interact within a user-generated context. Not only does the integration of technological tools into the classroom serve to motivate and engage students, it also helps to develop information literacy, critical thinking and communication skills (Behling & Klingner, 2010); all key factors for professional and personal success.

### 2.4 Learning Landscapes

'Learning landscapes' refers to the spatial, technological, social, psychological and pedagogical contexts within which learning occurs, and which have an impact on student engagement, achievement and attitude. Physical learning environments are included, as are blended and virtual environments, spaces and places, formal and informal environments, both on-campus and off-campus.

A critical factor in the design of successful learning landscapes is the exploration of the linkages between space and pedagogy (Fisher, 2005a, 2005b, 2007; Neary et al., 2010). While learning and teaching should be the key drivers behind learning landscape design, there appears to be a disconnect between these two in actual practice (Barnett & Temple, 2006), where financial and programmatic drivers usually take priority. Research has shown that space planners and managers tend to become preoccupied with the availability and serviceability of furniture, finishes and technology selections, to the detriment of spontaneity, comfort and pedagogy, which are considered less important (Neary et al., 2010). As a result, learning landscapes are usually designed around technological, architectural and operational imperatives (Radcliffe, Wilson, Powell & Tibbetts, 2008).

While research into the design of learning landscapes for higher education has been gaining momentum over the last decade [most of these studies using a systematic case-study approach], the linkages between pedagogy and space are still not well understood (Temple, 2008). Research has generally been limited to how space supports the development of a university community, the needs of specialist spaces, the impact of technology on space use, the connections between built and virtual space and investigations into the future of education; and the learning landscapes

investigated, have generally been of a generic nature. Space design is central to effective learning and teaching, and further research is needed to investigate the relationships between built/virtual/informal space and pedagogy in the design of future learning landscapes.

## 2.5 Implications for Architectural Education

The design studio has always been, and is likely to continue being, the cornerstone of architectural education (Goldschmidt, Hochman & Dafni, 2010; Lackney, 1999; Salama & Wilkinson, 2007). Key properties for the architectural design studio include project-based pedagogy, rapid iteration of design solutions within set constraints, the critique, consideration of precedent, and the importance of visual presentation (Kuhn, 2001). The one-on-one/face-to-face desk critique [crit], allows the student to discuss their design progress on a regular and informal basis with their lecturer, thus acquiring design skills and knowledge through this process (Soep, 2006; Swaffield, 2006). The studio has developed historically as a learning-by-doing environment, where the lecturer mentors their students in the design process, and students are challenged to observe design processes - their own, and those of their colleagues and lecturers (Carlhian, 1979; Frey, Birmingham & Dym, 2010; Gournay, 1986).

## 2.6 Conclusion

A review of the academic literature has indicated that while there is some literature on physical, blended and virtual learning environments, there is limited research which specifically addresses architectural learning environments. Similarly, while there is much literature on new and experimental pedagogical approaches to support active learning, very little of this focuses specifically on architectural design studio pedagogy. Core research in this field is emerging from the UK and the USA, however little research has explored this in depth within an Australasian context, and more specifically, within the defined academic discipline of architecture. The purpose of this research is to begin to identify emerging trends in adapting to future learning landscapes for architectural education, in Australasia. It explores the important linkages between space, pedagogy, technology and furniture, using a multi methodological qualitative research approach.

# 3 METHODOLOGY

## 3.1 Context

In late 2011, the architectural design studios at a large university in Australia were redesigned and renovated. The redesign of these studio environments was developed, in part, based on the outcomes of an earlier study of a new digital learning laboratory at the same university, which adapted Student-Centred Active Learning Environment for Undergraduate Programs (SCALE-UP) design principles (Osborne, Franz, Savage & Crowther, 2011). This 2011 study identified six themes which were instrumental in offering resistance or influencing adaptation to, new blended learning environments: technical/technological proficiency; technological infrastructure support; human infrastructure support; pedagogy/technology compatibility; pedagogy/technology/environmental compatibility; and, pedagogy/environmental compatibility. These six themes responded to the resistance by highlighting the adaptive notions of proficiency, support and compatibility. The renovations were also required to respond to the heritage protected requirements of the building and a limited budget. The renovations included modifications to the spatial environment, the technologies provided within these spaces, and the addition of new furniture.

The spatial changes included the decision to merge smaller, separate studios, into larger combined studio spaces, through the demolition of internal dividing partitions. In addition to this, old carpets were removed, to reveal the original heritage listed timber floorboards below.

Technology renovations included the addition of data projectors and screens, mobile computers on wheels [MOCOWS], mobile pinboards and whiteboards. The new furniture selected included large white tables and chairs that were both mobile and stackable. An ongoing issue, which was not addressed in the 2011 renovations due to budgetary restraints, was provision of universal access to the floating mezzanine spaces, above the studios.

While not prescriptive, the space layout and arrangement of each designated studio space consisted of distinct group work zones, an open central space, one data projector and screen, and one MOCOW. Each group work zone included two mobile tables and nine mobile chairs, and each of these zones was orientated to the outside wall of the space. In addition to general WIFI internet access, the new MOCOWS hosted software to provide scaffolding to the collaborative learning environment including: Skype (free web application for video calling and instant messaging, with mobile integration for iPhone/android devices); Google Docs and Mindmeister (free web applications for collaborative 'real time' creation, editing and sharing of documents/mind-maps using web enabled devices); and Facebook and Twitter (free web social utilities that connect people with others around them).

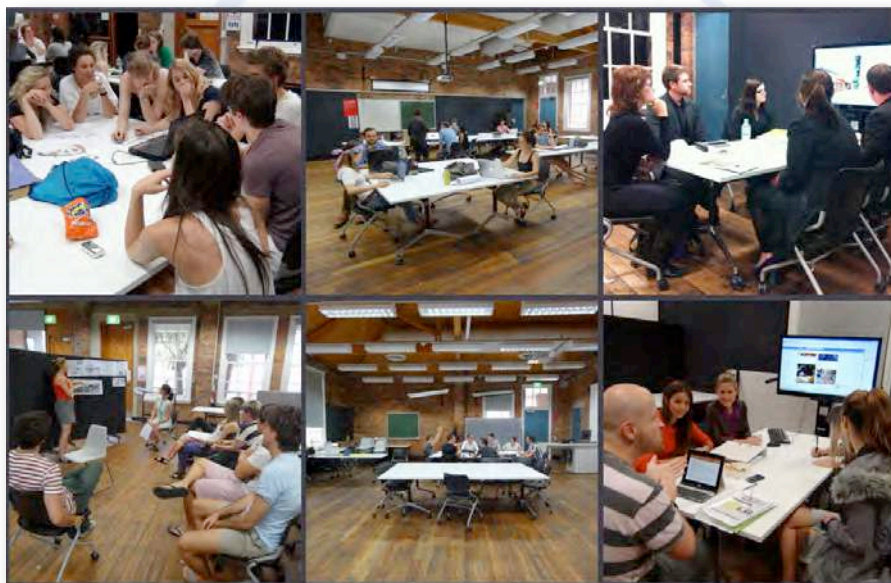


Figure 01. The renovated architectural design studio environments being used in various pedagogical modalities

### 3.2 Data Collection and Analysis

In the first semester of 2011, 79 second year architecture students completed a questionnaire about their learning experiences in the traditional architectural design studios - the response rate represented approximately 70% of second year students who has been allocated to learn in these spaces, that semester. In the first semester of 2012, the study was expanded to include responses from 356 students from all five years of the undergraduate and the masters of architecture degrees - the response rate represented approximately 40% of enrolled students.

Using a dual method qualitative approach, the questionnaire data were coded and extrapolated using both thematic analysis and grounded theory methodology. The results from these two different approaches across two consecutive years were compared, contrasted and finally merged, to reveal five distinct emerging thematic areas, which were instrumental in influencing adaptation

to the newly renovated architectural design studio learning environments, where adaptation creates a sense of person-environment fit: Learning Spaces, Social and Informal Learning, Traditional Technologies, New Technologies and Furniture. These five thematic areas highlight the important linkages between Space, Pedagogy and Technology, in supporting students' overall learning experience.

## 4 FINDINGS

### 4.1 Learning Spaces

While there was a very positive reaction to the improved aesthetic appearance and how it felt to be in the new large open-plan collaborative studio learning spaces, two items were identified as a potential barrier to effective learning in the new environments: Acoustics and Vision.

**Acoustics:** The 2011 study indicated that two-thirds of students could easily hear in class, however this was reduced to just over half, in the 2012 study. The contributing factors are most likely to be the elimination of the internal dividing partitions and the carpeted floor finish, both of which would have provided acoustic insulation properties, however increased student numbers in the same spaces, may well be a factor too.

**Vision:** Over three-quarters of students believed that they were able to easily see what was happening in class, in the 2011 study, however this percentage was reduced to just under two-thirds of the class in 2012. As the spaces were redesigned to no longer prescribe a 'front' and 'back' of the classroom but rather to support an equitable collaborative learning experience, this may be a contributing factor. In addition to this, more of a reliance on using the MOCOWS for researching and explaining concepts, as well as presenting student work is likely to be contributing to a problem that did not exist prior to the addition of this new technology. Research from the 2011 study indicated that the use of MOCOWS was ideally limited to groups of 9 students, however budgetary limitations meant that one MOCOW was provided for over double this number of students in the renovation.

It could well be that some of these items have arisen from years of cultural conditioning that effective learning can only happen in a quiet and small, enclosed space; our current research in this area is addressing some of these pre-conceptions, and will allow us to better understand the contributing factors.

### 4.2 Social and Informal Learning

An interesting outcome of the 2012 study was the very positive reaction of students to social and informal learning environments.

**Favourite Place to Work:** While the architectural design studios remain the most popular environment to work in, students also nominated a high percentage of social and informal learning environments. These included the collaborative and informal breakout spaces in the campus library, coffee shops and other similar social external environments on campus, and the unstructured design student common rooms. A small percentage of students favoured the computer labs; this small number can most probably be attributed to the fact that many students now carry their own mobile learning devices to campus with them, allowing them to work anywhere and anytime, and reducing the need for formal computer enhanced facilities. Finally very small percentage of students choose to hide in another faculty building where they can work anonymously, or off-campus altogether. Figure 2 illustrates the students' favourite places to work in these seven broad categories.

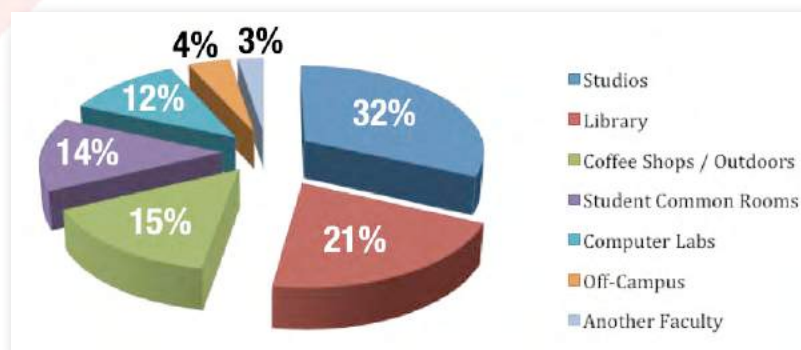


Figure 02. Students' favourite places to work in

**Social/Informal Learning Spaces:** Over 90% of students agreed that they definitely wanted to see more social/informal learning environments on campus, which validates the very positive light in which students view these types of learning spaces, and highlights the importance of providing both more of these and blended spaces, on university campuses. If students are happy and feel comfortable in, a learning environment, they are likely to remain there longer; this hopefully has a positive impact on learning.

#### 4.3 Traditional Technologies

The 2012 study highlighted the changes in technologies used in class, over a one-year period. A clear trend emerged in the move away from the traditional pinboards and whiteboards, to new high technologies including laptops, tablets/iPads, smart phones and MOCOWS. The strong and fairly quick move away from the reliance on pinboards and whiteboards was surprising, considering the results of the 2011 study, which demonstrated that students wanted more of these elements in the design studio environments.

The 2012 study indicated a 10% increase in students bringing their own laptops to class, in the space of one year. There was a further 10% increase in students bringing tablets/iPads, and finally, there was also a 10% increase in the number of students bringing in and utilising their smart phones to class, for learning. These increases were offset by a very clear reduction in the use of pinboards and whiteboards by one third of the students. This clear trend towards the use of new digital technologies and away from traditional technologies is notwithstanding the addition of the new MOCOWS, which saw an immediate uptake of over one third of the student cohort in the first year of their utilisation.

**Pinboards:** Traditionally, architecture students have had a strong reliance on the use of pinboards in the design studio learning environment. Their principle use has been to allow students to pin up their design work at regular intervals throughout the semester, to allow lecturers and student

peers to review their design progress and provide feedback on their design proposition. This pedagogical approach is most usually hosted in a 'crit' environment. When questioned about whether the use of pinboards improved their learning, the data indicated a definite trend of over 20% of students, away from the reliance on pinboards to support learning.

Whiteboards: Whiteboards were introduced to the design studios, based on the outcomes of the 2011 study which demonstrated a student desire for these in the studio environment, however similar to the pinboards, the introduction of these traditional technologies was met with mediocre acceptance; only 15% of students believed that whiteboards improved their learning.

#### 4.4 New Technologies

A significant change to the architectural design studio learning environments was the introduction of new technologies, which, with the exception of WIFI access and data projectors in some of the studios, were largely non-existent prior to the renovations. The data showed a positive introduction of new technologies to the architectural design studio learning environments, but some concerns around confidence and competence, with regards to technology utilisation. The data showed a notable increase in student's perceptions that technology improves their learning; just over one third of students believing this in 2011, the data shifted to nearly two thirds believing this after having access to technologies, in 2012.

Data Projectors: When asked whether data projectors improved their learning, the response rates were similar in both the 2011 and 2012 studies, with just under a third of the class agreeing to this statement. The most likely reason for this, is that data projectors are typically used in a lecture-style pedagogical mode, which is largely un-utilised in the design studio learning environment; rather, one-on-one lecturer/student mentoring, peer-to-peer learning and small group collaborative learning are the most utilised pedagogical modes in a design studio. However, there are key times during the semester when the studio transforms into a presentation or critique environment, and the data projector is a popular technology to support this pedagogical approach.

MOCOWS: The introduction of MOCOWS to the studios in 2012 was both positive and successful. Over half the students agreed that the MOCOWS were responsible for improving their learning and less than 10% of students disagreed with this notion.

Groupwork/Collaboration: Another significant trend was an increase in student perceptions that the introduction of new technologies had a positive impact on and assisted with, groupwork, collaboration, and sharing and communication of ideas. The 2011 study showed that less than half of students believed that technology assisted them, but this was increased to nearly three quarters of the student cohort, in 2012

Student Confidence: Students were also questioned about their confidence with regards to using new technologies. While it was pleasing to see an increase in confidence of roughly 20% from 2011 to 2012, what is probably more of a concern is that a quarter of students reported that they do not feel confident using technology. This is an important and timely reminder that lecturers need to scaffold students' learning to use technologies; we cannot just assume that they, as 'digital natives' or 'millennials', have all the skills that they need at their disposal.

Lecturer Competence: When questioned about how well their lecturers' utilised technologies, student positive perceptions decreased and their negative perceptions increased, between the 2011 and 2012 studies. This is most likely attributable to the increased use of technologies, exposing lecturers who do not have high skill levels, or at the very least, confidence to use the technology. As with the student confidence item, this is a timely reminder that institutions need to privately scaffold lecturer's learning to use technologies, prior to placing them publicly into the learning environment.

#### 4.5 Furniture

A significant part of the renovation budget was allocated to the provision of new furniture. Based on the outcomes of the 2011 study and budgetary restraints, new furniture was selected for the design studio learning environments. All furniture was required to be both mobile and stackable, to allow students and lecturers to take ownership of the space, and to rearrange or transform it, to suit the pedagogical tasks being performed rather than merely relying on the arrangements left behind by the previous class. Another requirement was to provide large tables with white surfaces, to accommodate for drawing on and display of, large-scale architectural drawings.

**Learning:** Over half the students believed that the introduction of the new mobile and stackable furniture had a positive impact on their learning. This result was significantly up from the 2011 study, where only a quarter of students believed the furniture had supported their learning.

**Groupwork/Collaboration:** Another significant trend was the positive impact of the new furniture, on supporting groupwork; 80% of students agreed with this and less than five percent disagreed. These results are encouraging, since pedagogically, much of the architectural design studio learning environment centres around collaborative groupwork.

### 5 CONCLUSION

When designing or renovating learning spaces to allow for the provision of open-plan and collaborative blended learning studio environments, careful consideration must be given to the implications that this has on the students' ability to hear and see effectively. While some of these issues may be simply attributed to cultural conditioning when adapting to a new environment, if a student cannot hear or see effectively, learning may well be diminished.

Student's desire for more social and informal learning environments is clearly evident. While it is not appropriate to simply abandon all traditional teacher-centred learning environments, which definitely do have their place in university education, there are some components of informal or social learning that may well be introduced in learner-centred collaborative blended learning environments. This is an area that the research team are continuing to work in and trying to better understand.

While there is still a strong romantic yearning for the placement of old technologies in architecture design studio learning environments, there is an evident swing away from these, and towards the use of new, digital technologies. It is also evident, however, that the new can not simply replace the old, and that the provision of blended old and new technologies appears to be most successful solution at this stage, while student and lecturer confidence/competence, is built.

The selection of appropriate furniture is critical when designing or renovating learning spaces, particularly if varying pedagogical modes of learning may take place, in the same space. Where time allows, it is most beneficial to trial different types of furniture and collate feedback from the users, prior to expending large amounts of funds on what may well become redundant selections.

While the results of this study are somewhat varied and indicate both areas in need of improvement and areas which have been improved, arguably the most important results from this study indicated that students believed that their overall learning experience had been positively enhanced, as a result of the renovations into the blended architectural design studio learning environment. With three quarters of students agreeing to a positive overall learning experience in the renovated studios, this provides a strong argument to support the importance of the design of the physical environment, in supporting blended student learning.

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*Rolston's Aesthetics of Nature and Its Implications for Education*

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## 1. Introduction

The subject of aesthetic research usually focus on art traditionally. Some aesthetics begin to develop a new approach called “aesthetics of nature” which inquires issues about natural beauty. A. Carlson, A. Berleant, R. Hepburn, E. Brady, R. Moore, S. Godlovitch, N. Carroll and H. Rolston III(1932 ~ )are famous scholars in this research field.

Carlson, the renowned aesthetics of nature scholar, believes that although Rolston is famous for environmental ethics, his reflections on aesthetic experiences of nature constitutes a profound natural environmental aesthetics and become a pivotal figure in the development of this field. Rolston’s works promote our aesthetic appreciation for nature and help us find the value and beauty of nature (Carlson, 2010: 103, 118).

Because Rolston has extensive knowledge in many disciplines, his aesthetics of nature interlinked with philosophy, science, and theology, which includes biology, ecology, botany, geology, theology, and philosophy. In the two approaches of cognitive(science)-based and non-cognitive-based, Carlson classifies Rolston’s belief as former. In fact, Rolston’s belief does not only speak on science. Maybe Rolston is affected by his own religious background of being a pastor. He also directs aesthetics to religion. His sense of sublime, in particular, is close to religious experience. Although there are some disputes about Rolston’s aesthetics of nature, particularly in religion, his comments on the deep properties of natural beauty give us some valuable educational implications.

## 2. Scientific Aesthetics of Nature

As N. Hettinger(2010: 63) indicates, no environmental philosophy understands natural sciences better than does Rolston. His writings full of scientific description and sciences are the basis for interpreting every fields. Rolston “scientizes his aesthetics, ethics and religion of nature” (Hettinger, 2010: 75). Accordingly, Rolston’s aesthetics of nature is “science-based landscape aesthetics”. He rejects to limit aesthetics as beauty perceptible to the senses, and expand it to include beauty sensed by the reasoning mind. For Rolston, aesthetics of nature should stress concepts as well as percepts(Rolston, 1995: 384; 2011: 274).

What kind of natural beauty can science help us appreciate? According to Rolston, there are all kinds of beauty in nature. People cannot appreciate the beauty because they do not understand it. Thus, science provides profound knowledge to help us appreciate nature and find various aesthetic properties.

### 2.1. The Beauty of Diversity and Abundance of Creatures

People often think some places to be barren, when they are actually not. Take swamps for example, they are in fact places with the most variety of living things or “biological diversity”. Every continent has swamps, except for the Antarctica. Six percent of the earth’s surface is wetland and 11% of the Arctic is wetland. A swamp can be as small as a pond to as large as tens of thousands of hectares. It can be either

freshwater or saltwater. Scientists use various classifying schemes and terminology to show abundance of wetlands, such as bogs, marshes, mires, muskegs, peatlands, palsa bogs, fens, swamps, wetland moors, wetland prairies, tidal salt marshes, mangrove wetlands, river floodplains, deltas. Wetlands are rich with living things, from micro-organisms, insects, plants to animals (Rolston, 2000: 585-586).

The diversity of living things in forests is even richer. Before human came into existence, forests took up about 60% of the earth's surface. There were vast taigas or polar forests in Canada, Siberia, and northern Europe. Temperate forests covered much of the United States, Europe, and China. There were tropical rainforests, tropical deciduous, as well as thorn forests. Forests showed greater exuberant vitality and its biomass was greater than that on grasslands. The tropical rain forest is the most complex and diverse ecological community on earth. There are up to 300 different species of trees in one hectare in a tropical rain forest (Rolston, 1998: 158-159). We can know more than before and feel an aesthetic sense of biological diversity from perspectives of biology and ecology.

## 2.2. Aesthetic Sense of Ancient Time and Space

The forest, the sky, and the sea are the archetype of the world with ancient deep time and sense of space. Forests take time by the decades and centuries, compared to the way human take time by the days, months, and years. Forests go back three to four hundred million years. Land plants first appeared in the Silurian Period and remained close to the ground, like mosses and liverworts, until the Devonian Period, when we found the first fossil wood. Large, erect plants need the strength of cellulose and vascular columns to pump water and nutrients, which require a very long time to evolve. No one knows when forests started to exist, but the evolution is still in progress. A pristine forest is like a living historical museum (Rolston, 1998: 157-158). The ferns, lycopodium, equisetum, and mosses in swamps are very ancient plants. Equisetum species can be traced back to 400 millions years ago. These ancient living things make us marvel and experience a deep sense of time, dynamism and antiquity, and thus stimulate our aesthetics. The migration of birds makes us ponder their start and destination, and elicits the aesthetics of time and distance (Rolston, 2000: 588, 592-593).

## 2.3. The Beauty of Subtlety and Delicacy

Science also helps us appreciate the indistinct. Amazing things are going on in dead wood, underground, or in the dark. Seen with a magnifying glass, the stellate pubescence on the underside of a Shepherdia leaf is quite remarkable. The weird green luminescence of *Panus stypticus*, a kind of mushroom that is discovered at night, is hard to forget. As for indistinct and intricate natural objects, we can only appreciate them with the help of science. Trees push toward the sky, and this sense of pressing upward is vital in beauty. Given photosynthesis, there is competition for sunlight, and plants that place their leaves higher as struggle for survival. The tree needs to have structural materials, cellulose, to maintain the heights, and also to lift necessary nutrients and water. As for grasslands, water resource is limited. There are alpine and tundra ecosystems where the wind and the cold limit the growth of living things. Only

when moving through science to the deeper aesthetic experiences that are enriched by science can the forest be most adequately known. Rolston knows that aestheticians are often uncomfortable with this because they don't seem to believe science helps the appreciation of nature. However, science can indeed enrich and deepen our aesthetic experience (Rolston, 1998: 160-161).

Living things often develop exquisite skills in order to survive. For example, the Venus flytrap (*Dionaea muscipula* Ellis) is probably the most effective prey-trapping land plant. The leaves are hinged, fringed with stiff long bristles, and exude sweet nectar. There are trigger hairs on the midrib. When an insect touches the trigger hairs twice, the hinged leaf are released to quickly snap shut. The marvelous fringes, like eyelashes, interlock and form a cage where the insect is held and digested. The capture takes only one or two seconds. Then the leaf secretes, over several days, digest enzymes that break down the insect protein into amino acids and peptides. If a twig or a windblown pebble falls on the leaves, they will reopen in a few minutes. These exquisite skills are often marvelous and cause deep sense of aesthetics (Rolston, 2000: 590-591).

#### 2.4. The Beauty of Struggle for Survival and Regeneration

From scientific knowledge of ecology, we can understand the phenomenon of continuing struggle for survival and conflicts with the environment. It is a feeling for vitality (Rolston, 2002: 134-135). Struggling for life is also a kind of natural beauty. Animals have to struggle for survival. They either eat or be eaten. The impalas run for their lives to escape the wild dogs' hunt. The pasqueflower develops all kinds of mechanisms to fight the bitter winter. All of these are a kind of beauty. In addition, "life persisting in the midst of its perceptual perishing". Death is the beginning of regeneration. Life and death interchange with each other. Seasons come and go. The dialectic of life is a kind of life beauty. Existence is the deepest kind of beauty (Rolston, 1998: 134-136; 2000: 597).

During winter time in the Rocky Mountains in North America, it snows and blows fierce winds. Everything is quiet and lifeless, except for pasqueflower. The flower exhibits surprising endurance for cold and dryness and blossom in the bad weather. It has a brave and persevering beauty, which is also called the Easter and Passover flower, representing the coming of spring. It symbolizes vitality, hope, struggle against adversity, and resurrection. "The way of nature is the Way of the Cross" (Rolston, 1986: 261). Rolston lets us feel the truth behind life and religion.

#### 3. The Aesthetics of Nature: From Science to Religion

Rolston (1995: 374) suggests that the sense of sublime is a massive power. It touches heights and depths beyond normal experience and transcends us. There is vertigo before vastness, magnitude, antiquity, power, and fierce forces beyond our limits. For example, at an overlook in the mountains, with trees all around, the ground runs right up to your feet and disappears over the horizon. In the unexplored forest, the boundary of space is even more indefinite. No one knows the origins of forests. The trees point upward along the mountain slope, which rises to join the sky, and the scene soars off to unknown heights. The aesthetic situation has gotten out of control

because the limits have vanished. In addition, the aforementioned life struggle and regeneration make us feel a sense of sublime (Rolston, 1998: 163-164). Nature has positive aesthetic properties for us to respect and appreciate.

The sense of sublime ultimately elevates into the religious sacredness. Take forests for instance, Rolston uses quotes from the Bible such as “Break forth into singing, O mountains, O forest, and every tree in it!” (Isaiah 44.23), “The trees of the Lord are watered abundantly; the cedars of Lebanon which he planted” (Psalms 104.16), and “The groves were God’s first temples” (William Cullen Bryant). The forest like a kind of church. Trees pierce the sky, like cathedral spires. Light filters down, like through stained glass. The forest canopy is lofty, far above our heads. Being deep in the woods, with the ground under one’s feet and trees roof over one’s head, it generates religious experience. The line between aesthetic respect and reverence for nature is crossed. Photosynthesis is not only a chemical reaction, but more of a spirited behavior and creates the miracle of life. Forests arouse our senses of exclamation, miracle, admiration, modesty, and reverence. It makes us think about the universe. There are no forests on Mars or Saturn and nowhere else in the solar system, perhaps none in the galaxy; but Earth’s forests are indisputably here. There is operational organization and genetic history in a handful of forest humus. This creativity is the most sacred property of Earth. Our home is a rare planet, and all the elements work appropriately with one another (Rolston, 1998: 164-166; 2011: 282). Isn’t this God’s masterpiece? When science cannot explain the question, we can only leave it to God because He is the source and answer to all enigmas and mysteries.

According to Rolston, all appreciation for nature leads to religion whether it is the nature’s subtlety, complexity, infinity, sublimity, miracle, sanctity, and mystery. People who appreciate the natural phenomenon have to exclaim at the Creator’s amazing power. The light filtering through trees in the forests and clouds in the sky makes us feel the appearance of gods and a sense of aesthetics. It makes us think of how unbelievable God is. The aesthetics of nature and religion merge with each other. Although the intrinsic value of environmental ethics and aesthetic experience of nature are based on science, they finally enter religion. However, one would wonder if this kind of natural aesthetic experience is over-deified?

Rolston steps into religion from science and causes some criticism. The earth and everything are indeed a miraculous existence. However, the aesthetic experience can stay with the exclamation of earth. It is not necessary to conclude everything to God’s grace. The subtlety of life is admirable and respectable, but one cannot prove that everything is created by God. Rolston’s “theological aesthetics” have been questioned by some scholars. But if we leave the argument of God’s existence alone, religion may also be a foundation for appreciation of nature. It is not illogical that the life’s miracle will cause the thought and affirmation of gods

#### 4. Rolston's Revelation of the Aesthetics of Nature for Education

According to the aforementioned, Rolston's aesthetics of nature is still disputable regarding religious questions. However, he still leaves some meaningful implications for education. Actually, as for educational practice, science, religion, philosophy, and mythology can be the foundation for appreciation of nature. The following discusses Rolston's revelation of aesthetics of nature from the three aspects of aesthetic education, environmental education, and life education.

##### 4.1. Aesthetic Education

The aesthetic education in Taiwan is almost the same as art education, but lacks the nature appreciation education. The nature provides rich materials to stimulate people's aesthetic experience which is something the aesthetic education should not overlook. Education can make people feel deeply touched and enrich our life and life's beauty. According to Rolston, aesthetics of nature education should be more than the superficial appreciation of colors and shapes or emotional expression, but rather strengthen scientific knowledge. The momentary ugliness is only a still shot in an ongoing ecologic motion. We have to learn to beyond human subject for appreciation in nature. If students can understand more about science, it can help them better appreciate nature.

However, the problem is, even though our science course offers a lot of scientific knowledge, students still cannot appreciate nature. Scientific education is necessary, but it should not be only cognitive lectures. Teachers should guide students to appreciate beauty through knowledge. Are the teachers capable of doing so? Apparently, the teachers should have more related professional on-the-job training. The aforementioned four scientific and religious beauty suggested by Rolston can be the basis of courses and lectures. Further unit-based "nature appreciation" supplementary courses can be designed. In addition, we can combine science and geography courses, or design a school-based curriculum according to the school's special features.

##### 4.2. Environmental Education

Nowadays, we are facing environmental crisis. Each of us should care about the environment. Environmental or ecological education is even more important. As for environmental protection, Leopold believes that the public should develop exquisite tastes for natural things, which is an aesthetic representation for the whole society and culture. The land utilization policy is also very influential. When we promote understanding and appreciation for the beauty of nature, we should focus on strengthening people's awareness of nature, instead of opening up more roads leading to the countryside (Leopold, 1969).

Rolston's aesthetics of nature suggests a view point for appreciating the ecosystem and offers many ways to appreciate nature. Thus, he promotes the intrinsic value of nature appreciation. If students can appreciate the beauty of ecology's diversity,

subtlety, and struggle for life, and experience nature's sublimity and sanctity, it should be helpful to stimulate the motive and actions for environmental protection.

#### 4.3. Life Education

Appreciating life's subtlety makes us realize that life's existence is very precious. We should cherish and make good use of our life because it is as precious as nature. The beauty of struggle for life can motivate people and encourage us to move forward and face positively all kinds of challenge in life, just like pasqueflower's amazing endurance and perseverance of life. If a tiny flower can show beauty in the bitter winter, there is nothing unattainable in life.

Life is human's best instructor. If we immerse ourselves in nature, we can probably feel the greatness and power of nature, as well as the insignificance of human. Thus, we can be humble and respect nature, no longer conceitedly conquering and destroying nature. The nature appreciation can enlighten people. If school education can make good use of natural beauty as life education materials, it will help students to appreciate nature and thus reflect their lives, and respect themselves, others and nature. Overall, it will help people to have healthy mind and enhance their quality of life.

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*Reforming Cambodia's Educational System*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

Cambodia's future presents a bleak scenario. It is currently among the poorest nations on the globe. Ravaged by war, genocide and corruption, its civic infrastructure is in shambles. Compounding the problem, 50% of Cambodian society is under the age of twenty. Youth, which should be an asset, is not because adequate societal role models are few, the system of education is flawed, and thousands of children are not attending school. Both governmental and non-governmental organizations are finding the problem intractable.

Children do not attend school because they either have no family or their families exploit them for economic reasons. In cities, the children become street hustlers, engaging in prostitution and other vices. In rural areas, the children must work in menial subsistence farming.

The educational system is geared more toward developing tradesmen than it is to creating an intellectual, professional or entrepreneurial class. Young people do not appreciate the value of such an education when compared to the short-term benefit of what can be earned on the street or the farm.

Our paper suggests a counter-intuitive solution: Place greater emphasis on teaching art and music. Studies have shown that such studies correlate with higher achievement in math and science and have a positive effect on truancy. A developing society needs engineers and other professionals who have a solid background in math and science. Creating a new class of better educated citizens will be the first step toward Cambodia becoming a useful member of the world community.

Keywords: Cambodia, street children, truancy, El Sistema, art and music instruction

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Cambodia's future presents a bleak scenario. It is currently among the poorest nations on the globe. Ravaged by war, genocide and corruption, its civic infrastructure is in shambles. Compounding the problem, 50% of Cambodian society is under the age of twenty. Youth, which should be an asset, is not because adequate societal role models are few, the system of education is flawed, and thousands of children are not attending school. Both governmental and non-governmental organizations are finding the problem intractable.

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Creating a new class of better educated citizens will be the first step toward Cambodia becoming a useful member of the world community.

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## **Cambodia's Problem**

Cambodia is one of the new nations of the twentieth century—those formed out of the chaos of colonization, imperialism, ideological differences, and nationalism. By the end of World War II, more than 140 nations gained independence.<sup>1</sup> Cambodia, as one of those newly independent countries, is still developing. It currently suffers from inadequate economic and social infrastructure. Per capita GDP is only \$830, which is lower than most of Cambodia's neighboring countries.<sup>2</sup> The children of Cambodia, both in rural and urban environments, are suffering from severe poverty and lack of education. In the cities more than 24,000 street children beg for money and food, either for themselves or for their families; they roam at night, exposed to drug abuse, sexual assaults, and human trafficking.<sup>3</sup> In rural areas, children cannot attend schools because their families need them to help with the farming.

Education of high caliber is crucial to the development of Cambodia. The younger generation of Cambodia composes the majority of the population due to an oppressive regime that had massacred nearly a quarter of its people. However, there is no efficient education system that has a long-term vision to guide the younger generation so that it can develop creative, reformative solutions that will make the country more independent and stable. Both the public school system and nongovernmental organizations' educational programs do not focus on the quality of the education that can produce long-term effects and benefit the nation as a whole.

## **The Genesis of the Problem**

When Cambodia gained independence in 1954, it was emerging from centuries of domination by colonial overlords from Vietnam, Japan and France. In the nearly sixty years since independence, Cambodia has had to deal with war, genocide, civil and political turmoil—in addition to its being a developing nation without a modern infrastructure.

After independence, Cambodia struggled to find stable government. The civil war in neighboring Vietnam and the related conflict with the United States had a devastating impact on Cambodia. The chaos of the government of the constitutional monarchy under King Sihanouk, followed by the military junta under General Lon Nol, ultimately gave way to the genocidal policies of Pol Pot and the infamous Khmer Rouge.

The advent of the Khmer Rouge began a reign of terror to establish an “idealistic” communist society. Pol Pot envisioned a utopian agrarian society, and so forced an evacuation of all cities and towns, including the capital city of Phnom Penh. His idea was to relocate citizens to rural farms. However, during the attempted relocation thousands died as a result of lack of food, agricultural equipment, and medical care.

To eliminate opposition to his regime, Pol Pot killed former military and government officials, affluent people, and every intellectual who had formal education<sup>4</sup>. The Khmer Rouge's goal of building a “pure” agricultural communist nation exterminated all foreign-educated experts, physicians, teachers, journalists, and engineers.<sup>5</sup> This was to prevent possible opposition from intellectuals, who might gather international and domestic support, and to eliminate those who would “contaminate Cambodia with foreign influence.” As a result, more than a quarter of the Cambodian population of 8 million died due to starvation, forced labor, disease, and execution.<sup>6</sup> Education ceased because all intellectuals and experts

were either executed or forced to flee to other countries.<sup>7</sup> The regime also established torture centers; to stimulate fear, public executions were common. The so-called “Killing Fields”—20,000 mass graves—are estimated to contain the bodies of more than 1,386,000 victims.<sup>8</sup>

Since the collapse of Pol Pot’s regime, Cambodia has been struggling to rebuild its social and economic system. The restored constitutional monarchy is stable compared to previous regimes, but power struggles in the political arena continue to be problematic.

The aftermath of these sixty years of turmoil, destruction and death is that Cambodia is left with a majority of young people and a dearth of educated adults to serve as leaders and role models.

### **Current Social and Economic Status of Cambodia**

Although Cambodia’s economy has been steadily expanding since the turn of the twenty-first century, it suffers from an imbalance, relying almost exclusively on agriculture and tourism. This leaves Cambodia vulnerable to fluctuation of demand. The global economic downturn of 2008 and 2009 devastated Cambodia because tourism and international investment decreased, creating 60,000 unemployed workers.

Cambodia has attempted to diversify by developing textile and rubber exports, but has been thwarted by direct competition from nearby countries, China, India, Vietnam, and Bangladesh, who offer lower prices.<sup>9</sup> This is partially due to the Cambodian government’s inability to protect domestic business by forming sophisticated economic contracts with other nations. The Cambodian government has not entered into a single international economic agreement since the WTO Agreement on Textile and Clothing expired in January 2005. The expiration of that agreement initiated direct competition against Cambodian textile exporters.

The Cambodian economy is dependent upon foreign assistance. About half of the central government’s budget depends on international donors, indicating the need for reform of Cambodia’s economic infrastructure.

Cambodia’s agriculture industry also needs reform. The vast majority of Cambodians are farmers; agriculture comprises 33.4% of the country’s gross domestic product (GDP).<sup>10</sup> However, Cambodian farming techniques have not kept paced with modern innovations, so the farmers remain poor. Many farmers still use half-starved cows to plow rice fields, and many who cannot afford cows plow without assistance. The farms lack modern irrigation equipment, using communal pumps that often malfunction, if they are even available. The farmers suffer especially during dry seasons. The Cambodians’ outdated methods of farming, including a lack of understanding of the importance of fallowing, exhausts the soil and limit the types of products that can be obtained from the land. Sometimes the poor agricultural technique causes the land to be permanently infertile.

The obsolete method of farming hinders the progress of raising the national standard of living.

Although agricultural reform is desperately necessary, there are few experts who understand Cambodian climate, soil, and culture well enough to develop efficient farming techniques and teach farmers what they need to do. The lack of Cambodian farming experts and organized

governmental programs to assist agriculture is evident in Cambodian Ministry of Agriculture, Forestry and Fishery; only one ministry serves three different sectors. In its website under “Agricultural Technology” and “Laws and Regulations,” there is not a single word, let alone detailed records and documented programs.<sup>11</sup>

### **The Adverse Effects on Cambodian Children**

Every day, there are from 14,000 to 24,000 children working and living on streets of Cambodia. The street children mostly work in big cities and tourist sites of Phnom Penh, Angkor Watt, and the beaches of Sihanoukville where they beg or sell CDs, books, and souvenirs. The increasing tourism to Cambodia, with about one million tourists visiting per year, paradoxically contributes to the problem because tourists who give money or food help the children sustain a destructive life on the streets. Sex tourism is increasing despite strict laws and the efforts of various organizations to deter it.

A common problem for street children is drug addiction. Most children who live on streets sniff glue. With money they earn during the day, they buy glue, which is readily available and inexpensive. Unfortunately, glue peddlers also sell more dangerous substances such as methamphetamine. Street gangs, whose members come from the ranks of the street children, sell drugs to the children, enslaving them with addiction so that they can take money the children have earned. Physical abuse such as beating often accompanies this kind of economic exploitation.

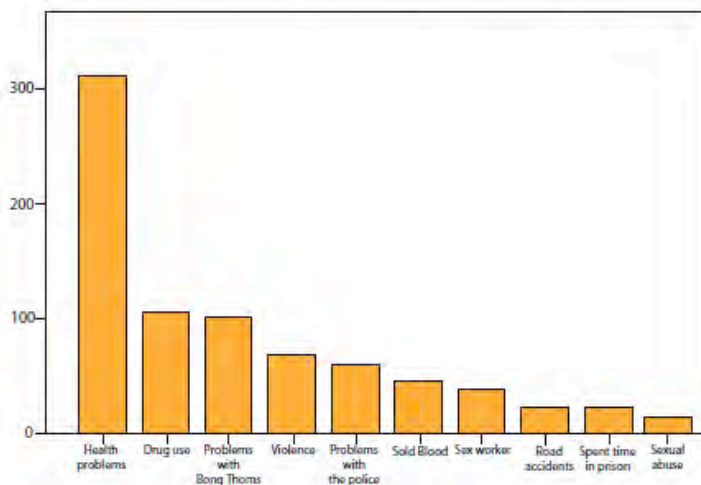
The girls are also susceptible to sexual abuse. There are more males than females on the streets because the girls do not survive. Many families view their daughters as simply a means to obtain money. The girls are sometimes sold into indentured servitude working to pay off the loans of their parents. These girls usually end up as prostitutes either for their families or for their owners. If the girls escape to the streets, human traffickers find them and force them into brothels. To whom does such a girl turn? She cannot seek refuge from her family that sold her.

Thus, a family’s lack of money is the reason these children end up on the streets. Poor families permit their children to be abused for money. Child advocacy groups refer to most street children as “Street Working Children.” They are not orphans; they have parents, but work on the streets to support their families. Some of the parents are disabled as a result of torture at the hands of the Khmer Rouge; some have HIV/AIDS; some are simply unemployable because of lack of education.

Figure 1 breaks down the incidence of problems faced by Cambodian children living on the streets.

### **Figure 1**

### Main problems faced on the street in Phnom Penh



Most problems mentioned by street children and youth were related to their health and to violence.

39% of the Children and Youth registered in 2007 have had health problems and more than 13% said they have been using drugs. This last figure is probably very much underestimated, but many children would not disclose this sensitive information at the time of their arrival. A snapshot survey conducted by Mith Samlanh in 2007 revealed that 58% of the street children and youth were actually drug users.

Graph from *Street Children Profile*

2008

Non-governmental organizations—NGOs—are private charities that make shelters available to street children, but the children do not stay. The children are used to the freedom and drug usage on streets. The children also need to earn money for their parents; so many of the parents disapprove of the children staying in NGO shelters or education/training centers. One of the most prominent NGO for street children in Cambodia, Friends International network, is only utilized by the children as a temporary place to receive a meal or take a shower before leaving, despite the various educational opportunities and counseling it offers. When a representative of Friends International was asked what percentage of children slip back into the night, he answered, “100%.”

### Deficiencies in Cambodia’s Educational System

The genocide during the Khmer Rouge regime, and the other adversities previously discussed decimated an entire generation of Cambodian citizenry. Those who were lost were the best and the brightest, compounding the problem through a dearth of admirable adult role models. Today, fifty percent of the population is under 20 years of age.<sup>12</sup> The population growth of Cambodia is 1.54% higher than that of Southeast Asia as a whole, increasing the disproportionate number of young people.<sup>13</sup> These young people are the future; educating them must be a key component in improving the inefficient and ineffective social and economic infrastructure of Cambodia.

Cambodia’s inability to create enough jobs in recognized economic sectors for the large number of job seekers who will soon enter the work force will inevitably bring economic

problems. It is crucial for the nation's future to educate the young so that they can independently find a way to earn money and make social change that will help the society improve. Reforms in agriculture and business will require educated people. A competent educational system that can raise young adults into intellectuals with critical thinking and specialized skills is necessary for Cambodia's development.

Cambodian children are seemingly interested in the idea of attending school, but they cannot control the forces that place them on the streets or on the farm. They enjoy the freedom of the streets and are not informed about the detrimental effects of living as street children. They are not aware of the detrimental cultural effect of adhering to a strict family hierarchy that allows parents to sell children. The children permit their parents who come to NGO's shelter to resell them to brothels. Their families will not permit them to remain in schools or NGO's shelters where they would be protected and educated. A practical system that informs the children about their health, various benefits of high education, and the importance of independent thinking and self discipline is crucial to help children participate in productive activities that will make them capable members of society.

The current public school administration focuses on addressing the pressing problems of today—lack of supplies and facilities—but does not address reforming the structure of the programs themselves. A significant portion of the government's budget for education is allotted to classrooms and textbooks, but very little thought or money is devoted to long-term strategic planning. The Ministry of Education is concerned with the dropouts and repeats—always including the statistics in its annual *Education Statistics and Indicators* reports—but seems little concerned with the quality of the education. Improving the curriculum, which is necessary to foster independent, capable intellectuals who can reform the country, receives much less attention compared to providing basic needs.

Although the Cambodia Ministry of Education has created the “Enhancing Education Quality Project,” it does help to develop new teachers. The program primarily concentrates on establishing a stable flow of students, not on organizing and supplementing curricula. Moreover, this project is heavily dependent on international aid from the Asian Development Bank, which grants 27.1 million dollars out of the total budget of 33.38 million.

The problems with the public school system begin with the lack of qualified teachers. Cambodia has very few specialized educators, like musicians, artists, scientists, and historians because of the ethnic cleansing by the Khmer Rouge that extirpated educated intellectuals; not only do teachers not have professional degrees, their average qualifications do not satisfy international standards. More than half of the primary school teachers in the country did not graduate high school. This lack of qualified teachers limits the quality of education and the variety of disciplines that public schools can provide. The report of the Ministry of Education states that Elective Vocational Education Program that public schools provide to eleventh and twelfth grades for vocational training depends on teacher and resource availability. This is a fancy way of saying that electives are non-existent.

The report, *Policy for Curriculum Development 2005-2009*, issued by the Cambodian Ministry of Education, Youth and Sports, demonstrates the government's short-sighted policy on education. The program emphasizes vocational preparation for the students instead of providing well-rounded disciplines to teach the students to be independent and creative. The public education system prioritizes education of foreign language because this will help

the students get employed; English or French is mandatory for every student above fifth grade. No one sees the value in teaching applied science, let alone art or music.

The Ministry of Education does play lip service to the needs identified in this paper. Every school is required to offer a course called “Local Life Skills Program”—LLSP. However, the course is given the smallest time slot during the educational week. The ministry vaguely defines LLSP as “intellectual, personal, interpersonal and vocational skills that enable informed decision making.”<sup>14</sup> In practice, LLSP is a jumble of vocational training mixed in with history and the arts—music, dance, and visual arts, all expected to be taught in the equivalent of one class hour per week. Science courses receive even less emphasis; for lower grades, science is taught as part of Social Studies and for eleventh and twelfth grades they are offered as optional.

### **Inadequacies of Current NGOs**

An NGO is a “non-profit, voluntary citizens' group which is organized on a local, national or international level. Task-oriented and driven by people with a common interest, NGOs perform a variety of service and humanitarian functions”<sup>15</sup>. They typically try to stay separate from the country’s government that they operate in, although they do accept government funding. NGOs typically try to solve problems that government does not address.<sup>16</sup>

NGOs attempt to fill the gaps in the public school curriculum. Most, however, also focus on education that provides job skills. Friends International Network and SOLS 24/7 program in association with Grassroots Development Institute, two more prominent NGOs, do work closely with the families of children to convince them to let the children stay in shelters so that they may receive medical care and vocational training such as cooking, sewing, conversational English and basic computer skills. The programs are somewhat successful in transforming children’s attitudes and helping them find jobs.

However, the NGOs’ programs are also short-sighted; they operate to help the desperate, they do not have the luxury of considering a long-term vision of the country’s overall development. They concentrate on “rescuing” the children so that they can be employed, not “reforming” the system so that Cambodia can be autonomous both socially and economically

The NGOs should be supplementing deficiencies in public education. Sebastian Marot, the Friends International coordinator in Phnom Penh,” points out that sewing classes provide young women with the opportunity to sew in a dark factory for hours on end, which will provide only slightly more money than begging or working on the streets in freedom.<sup>17</sup> Working as a prostitute she will earn more. Friends International therefore provides more diverse options such as motorcycle repair, hairdressing, and welding. Regardless: job training does not provide organized, insightful education that will teach children to be creative and independent.

The principal problem with relying on NGOs to provide educational services is that they cannot force children to follow their rules or even to attend. They cannot imprison children in their shelters or prevent parents from removing them. Children themselves also voluntarily run away—at a rate of 100%—according to Sebastian Marot of Friends International. They either understand that they must earn money for their families or are used to freedom and drug addiction on the streets that they will not confine themselves to an

institution. Establishing regulations that require attendance would cause accusation of imprisonment and kidnapping. Most NGOs have their foundations outside of Cambodia in western nations; criticism about imposing western values, moral, and religion might brew. These cultural considerations prevent NGOs from countering parents who wish to limit the participation of their children in programs, because strict family hierarchy is part of the Cambodian culture.

There are myriad of nongovernmental organizations operating in Cambodia. However, they do not communicate or coordinate with each other or with the government. As a result there are both overlaps and gaps in the available services. There is no established method to connect NGOs and the public education system to achieve more effective results. Cambodian Street Children Network, a coalition of seven NGOs for street children including Cambodian Children against Starvation and Violence Association, two divisions of the Friends International network, and World Vision, did produce a report, the *Cambodian Street Children Profile* in 2008 which effectively compiled data of street children's background information. However, there are no active interactions between NGOs to seek coordination to increase the effectiveness of their projects.

An obvious relationship exists between a country's educational system and its prospects for future economic development. This is especially true in a country like Cambodia, where over fifty percent of the population is under the age of twenty. Yet the Cambodian educational system is inadequate: competent teachers are in short supply and students lack motivation to attend school. Change is necessary—the educational system has to place greater emphasis on achievement in studies necessary to succeed in a technology oriented world—math and science; it must also encourage students to attend school.

### **How to transform the Cambodian Educational System**

Our proposed solution may seem counterintuitive. We do not merely propose the obvious remedies of more instructors or the direct injection of money, although we recognize that these are important. We propose greater emphasis on art and music instruction because cultivating these areas directly correlates with increased achievement in math and science, not only because the study of art and music is fun—thus encouraging students to attend school—but also because the study of art and music has been shown to increase cognitive ability in math and science.

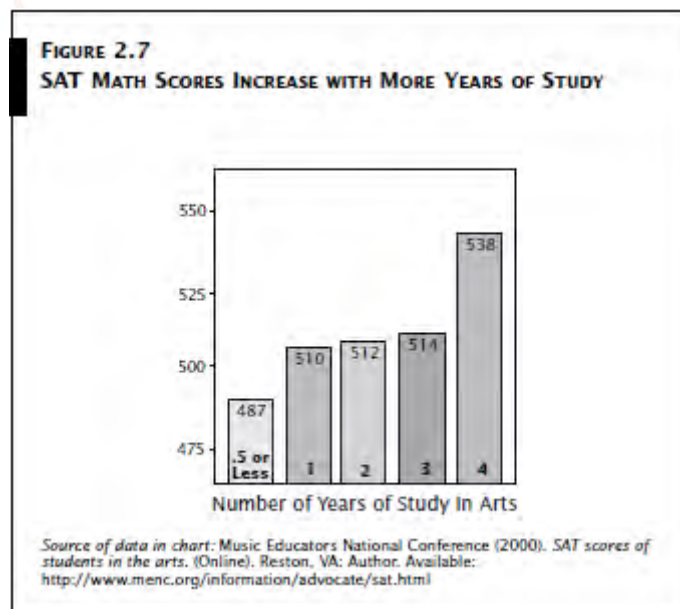
## Testing the theory through experiments

Art and music have long been hypothesized to have positive effects on the academic potential of children. The results of research published in 1993 by Professors Gordon Shaw, Frances H. Rauscher, and Katherine Ky dealt with the effects of listening to Mozart's Sonata in D Major for Two Pianos, K488: one group of college age students listened to the piece, another group to a "relaxation tape," and a third did not listen to music. A test designed to determine spatial IQ was administered to each group; the one that listened to Mozart eight to nine points higher.<sup>18</sup>

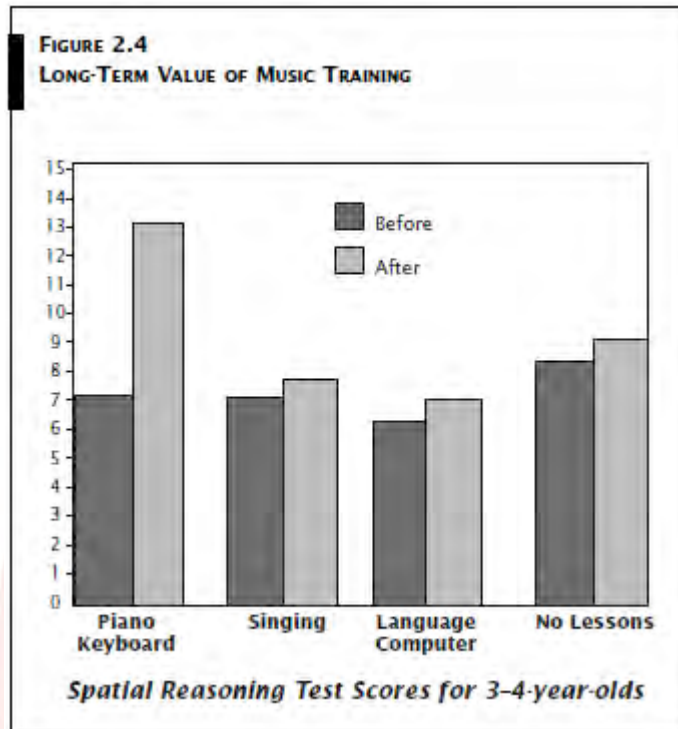
Eric P. Jensen, a noted educator, has devoted a book, *Arts with the Brain in Mind*, to the correlation between the study of art and the development of the brain's capacity to learn. His thesis is

"The arts are not only fundamental to success in our demanding, highly technical, fast-moving world, but they are what makes us most human, most complete as people. Arts contribute to our growth as human beings. The time has come to take the arts seriously."<sup>19</sup>

Jensen documents that MRI experimentation and neural experiments demonstrates that music activates and synchronizes neural firing patterns in the brain and therefore has an effect on the connections between neurons. The correlation between art instruction and spatial reasoning, creativity, and mathematical abilities is also suggested by the data in Figure 2.4 from page 24 of Jensen's book, which charts the relationship between the time spent studying art and the average math score on the SAT reasoning test. There is a difference of approximately fifty points between the averages of those who studied the arts for four years and those who studied the arts for half a year or less.<sup>20</sup> Jensen's chart is reproduced below:



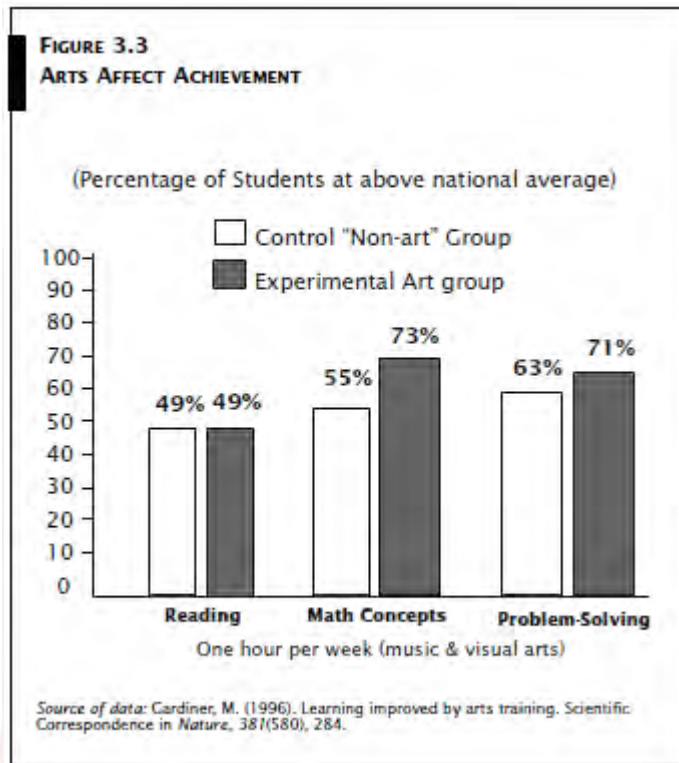
Another study, reported by Jensen, was conducted on three to four year-olds to test their spatial reasoning after exposure to different forms of music study. It shows that those who received intensive piano lessons improved their scores the most.<sup>21</sup> Jensen's chart of the findings is reproduced here:



The visual arts also have a significant impact on academic achievement, having the capacity, when used appropriately, to enhance concentration and improve focus. They can foster self-motivation and hence, decrease the sense of helplessness that deters under-achieving students. Studies by Jerrold Ross indicate not only that the integration of aesthetics, skill, history and theory—higher-order intellectual skills—are required in the study of art can be applied to learning about the arts, but also that acquiring these skills, knowledge and attitudes can help young people achieve at a higher level in more traditional academic areas, such as math and science.<sup>22</sup>

The effects that exposure to visual arts has on cognitive abilities are not as well documented as those of music, but there are biological implications that suggest a relationship between visual arts and neural development. In his book, Eric Jensen mentions two developmental periods during which it is crucial to maintain proper optical development. Research on feline visual acuity has demonstrated that impaired vision at early stages of development has long lasting effects on the ability to learn edges, contrast, and lines.<sup>23</sup>

Additional research has been conducted on children and their abilities prior to and after experience in dealing with the visual arts. This is represented in figure 3.3:



### Testing the theory in practice: El Sistema

El Sistema, originated in Venezuela in 1975, uses school based orchestras performing Western classical composition, to increase student interest, participation, and achievement. So successful has it been, that El Sistema-type programs have been introduced in twenty-five other nations with positive results. Outside of Venezuela, El Sistema has had the most influence in the United States and Scotland.<sup>24</sup>

In the United States, the most convincing evidence of El Sistema's impact comes from Los Angeles, California and Juneau, Alaska. All of the high school students of El Sistema USA in Los Angeles graduated from the program and attended college; each student was the first in his family to do so. In Juneau, the positive effects were observed in Glacier Valley kindergartners. Over the period of three months, from September to December of 2010, their reading scores skyrocketed from 11% to 55%. Then, from winter to spring, their scores continued to increase, as they raised their scores from 55% to 71% in reading, which was 10% higher than the district average, and 69% in math, 8% higher than the district average.<sup>25</sup>

The use of El Sistema has had other positive effects. In a survey in Scotland, 100% of parents replied 'yes' to a question regarding a positive change in their children's confidence. In the same survey, 93% of parents also noted that their children were happier overall. In Baltimore, 55% of students, up from 15% the previous year, envisioned themselves completing high school and attending college; over 80% of students indicated an improvement in grades, self-confidence, and behavior.<sup>26</sup>

### Applying these theories and experiences Cambodia

It is evident that there is a correlation between exposure to art and music and intellectual vitality.<sup>27</sup> Just as El Sistema revolutionized Venezuelan education, and has had the same positive effect in other countries in which it has been introduced, increasing emphasis on art and music instruction will improve Cambodian education and increase the prospects for a new generation of Cambodians ready to take their place in the world community.

### **How international volunteers can help**

We propose to create a new NGO—The Cambodia Project—modeled on the U.S. Peace Corps, to provide art and music instruction through the service of young adult volunteers.<sup>28</sup>

Staffing for the new art and music curriculum will come from two pools of candidates: international volunteers and local graduates. Instructors will live among the people for months so that they may develop relationships vital to the success of the program. In recruiting volunteers, The Cambodia Project will seek graduate or post-graduate candidates studying art and music in their native countries.

The ultimate goal is for the program to become perpetual. The ideal situation is for the former students of the Cambodia Project to become instructors and mentors for the subsequent generations. This is the method by which El Sistema sustains itself.

For practical working models, the Cambodia Project has many successful examples to look at. Both the Peace Corps and El Sistema are excellent models of what the Cambodia Project could aspire to be. As an NGO, the Project will have to face the hurdle of obtaining funding. Both the Corps and El Sistema are at least partially integrated with and funded by their national governments. The Cambodia Project will have to receive most of its resources from donations and volunteers. Nevertheless, the value of the Project is well worth the obstacles it will have to overcome.

### **Conclusion**

World Wars, Cold War, and dictatorship left lasting damage to Cambodia. Cambodia is still trying to rebuild. The availability of a well-rounded, high caliber education is crucial to the development of the country. However, both the public education system and foreign NGOs are only addressing the immediate problems of unemployment and low public school participation. Cambodia must also pay attention to raising the quality of education so that Cambodian youth can be independent, creative intellectual who can reform Cambodian socioeconomic structure.

The first step is to encourage students to attend school. The second step is to imbue them with the high morals and ethics that a healthy society values, and to instill in each student a commitment to working as a team for a goal that is more important than the individual. El Sistema is an example of an art/music program that has succeeded in helping nations achieve these goals by improving educational systems and outcomes.

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*ICT-Enhanced TfU Research Lesson to Construct Concepts in Newton's Law*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

The Research Lesson entitled “ICT-Enhanced TfU Research Lessons to construct concepts in Newton's Laws” was conducted with the objective of using ICT-infused lessons to promote self-directed learning (SDL), collaborative learning (CoL), and critical thinking skill (CTS).

This ICT-enhanced lesson surfaced students' concepts and misconceptions in dynamics and at the same time promotes self-directed learning, collaborative learning and critical thinking skills. With simulation where all forces acting on the object are shown, the students who are visual learners could be greatly helped in learning about forces. The use of videos and images further add to the visualizations to help students concretize something as abstract as forces as well as relate to real life scenarios which they see and experience around them. The kinesthetic learners get to be engaged and learn by exploration. The self-directed and self-motivated learner gains some control over his learning through the guided-inquiry.

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## **1. Introduction**

The purpose of this study was to see if the use of ICT-infused lessons helped to raise engagement levels of students, provided students with the opportunity for collaborative learning (CoL), and gave students more autonomy in self-directed learning (SDL). It is also hoped that the use of applets in this series of ICT-infused lessons would promote the use of critical thinking skills (CTS) in problem solving.

## **2. Abstract**

The Research Lesson entitled “ICT-Enhanced TfU Research Lessons to construct concepts in Newton’s Laws” was conducted with the objective of using ICT-infused lessons to promote self-directed learning (SDL), collaborative learning (CoL), and critical thinking skill (CTS).

This ICT-enhanced lesson surfaced students’ concepts and misconceptions in dynamics and is found to promote self-directed learning, collaborative learning and critical thinking skills. With simulation where all forces acting on the object are shown, the students who are visual learners could be greatly helped in learning about forces. The use of videos and images further add to the visualizations to help students concretize something as abstract as forces as well as relate to real life scenarios which they see and experience around them. The kinesthetic learners get to be engaged and learn by exploration. The self-directed and self-motivated learner gains some control over his learning through the guided-inquiry.

## **3. Rationale**

The rationale of the Research Lesson in using ICT to enhance an Inquiry-Approach is that student learns collaboratively and constructs knowledge together. In using Guided Inquiry, we build pre-cognitive levels which students do not have through either experiments conducted by students, or use of simulation and multiple representations to enable students to make multiple connections to arrive at the concepts. The topic Dynamics has always been difficult for students to grasp as students cannot see forces although they could see the effects of forces. With simulation where forces are represented with arrows for direction and length for magnitude and all forces acting on the object shown on the simulation, the students who are a visual, kinesthetic learners could be motivated in learning about forces, their interactions and effects as it matches their learning styles

The lessons that follow will be for the teacher to draw from these pre-cognitive levels which the students now possess to further their learning. The use of videos and images further add to the visualizations to help students concretize and make connections with something as abstract as forces as well as relate to real life scenarios which they see and experience around them.

## 4. Literature Research

### 4.1. Meaningful learning with technology to construct concepts in Newton's Laws

In this Research Paper we are trying to address students' difficulty to conceptualise with the help of technology. We look first at the common misconceptions students have in Newton's First and Second Law. We crafted our Research Lesson using the Teaching for Understanding Framework with use of Technology to address these misconceptions. We were also trying to look at how students collaborate, use critical thinking skills and do self-directed learning in constructing these concepts with use of technology available.

Muller had researched misconceptions around Newton's First and Second Laws, and these are the most common ones (Muller, 2008):

- believing an unbalanced force is required to keep an object moving with constant velocity;
- confusing velocity and acceleration;
- confusing position and velocity;
- confusing momentum with force; and
- believing that an increasing force is required to achieve constant acceleration

In order to equip the students with knowledge and skills that will prepare them to keep up with the changing environments and requirements in the future, there is a need to respond to the 21st century competencies framework by shifting part of our curriculum from teacher-centred to student-centred, with a greater emphasis on critical thinking, collaborative learning and self-directed learning.

The use of technologies can help to prepare students with the necessary skills by engaging students in the following:

- knowledge construction, not reproduction
- conversation, not reception
- articulation, not repetition
- collaboration, not competition
- reflection, not prescription

(Jonassen, Howland, Marra, Crismond, 1999)

Technologies are learning tools that support students' productive thinking and meaning-making. They are used to foster meaningful learning and should be used as engagers and facilitators of thinking.

Technology can be integrated to engage and enhance the learning experience of each student.

- Technology can be used as critical thinking tools to support knowledge construction to represent learners' ideas, and understandings.
- Technology engages students in self-directed learning by acting as information vehicle for exploring knowledge, accessing needed information and comparing perspectives, beliefs, and worldviews.
- Technology as social medium to support learning by collaborating with others.
- Technology as intellectual partner to support learning by reflecting, a skill needed for critical thinking, self-directed learning and collaboration. It supports learners' internal negotiations, meaning making and mindful thinking.

Students can use ICT tools to combine their ideas, compose, analyze and evaluate writing, all within one space. This engagement is transformational in that it takes various elements of the writing process and combines them into one experience, allowing the process to become collaborative, rather than just an individual experience. This we tried doing using google form for worksheets as students work on their ideas together to construct knowledge. They also collaborate to demonstrate their understanding using Edugloster where multimedia is use collaboratively to demonstrate their understanding of concepts.

Inquiry-based, collaborative approaches to learning benefit both individual and collective knowledge growth. Students engaged in inquiry-based learning develop content knowledge and learn increasingly important twenty-first century skills, such as the ability to work in teams, solve complex problems, and to apply knowledge gained through one lesson or task to other circumstances.

As schools explore and implement strategies to engage and prepare students for the complex and ever-changing world, inquiry-based learning provides a research-proven approach which has the potential to transform teaching and learning. Students develop critical academic, interpersonal, and life skills in new and powerful ways.

Hence in our ICT lesson, we had factored in components to help our students think and reason through the activities in the lesson. Through this ICT lessons, our students had to identify all the causal connections, understand and apply causal relationships, quantify attributes of causal relationships (direction, strength, probability, and duration) as well as explain the underlying mechanisms describing the relationship between the acceleration of an object when the mass, force, and friction is varied. Furthermore, students had to use technology to represent their understanding and are consistently required to engage in the comparison-contrast reasoning required to structurally map the attributes of one or more idea to others, and draw an analogy between what they see on the computer screen with what they understand in real life. ICT also allows students to express their understanding using a variety of tools, such as databases, spreadsheets, graphs, etc. Our lessons are also modelled around data collection and problem solving, allowing students to think deeply and engage in meaningful learning. Hence, what they learn while doing so will be better understood and remembered than being passively fed concepts in a didactic lesson.

(Meaningful Learning With Technology, by D. Jonassen, J. Howland, R.M. Marra, D. Crismond, 2008 edition, p. 5-10)

## 4.2. Teaching for Understanding (TfU)

Teaching for Understanding is an educational pedagogy that uses the following four questions as a foundation for its framework: What topics are worth understanding? What about these topics needs to be understood? How can we foster understanding? How can we tell what students understand? These four questions are structured into four key framework parts: generative topics, understanding goals, performances of understanding, and ongoing assessment to assess students' understanding. "Understanding" is defined as being able to carry out a variety of actions or "performances" that show one's grasp of a topic and at the same time advance it. It is being able to take knowledge and use it in new ways.

Teaching for Understanding framework is intended to do—guide and allow room for personal expression and it includes much more active and interactive learning than traditional 'transmission' kinds of classroom practices. The traditional method of teaching would be to introduce the concepts to students first before letting our students try out some problems to solve using those concepts taught. In our lesson, we had used use ICT to engage our students and provide them a platform to learn new concepts through simulation with computer software and interaction with peers before any mention the physics concepts.

The students derived the concepts and the teachers will follow-up with consolidation or reinforcement of the concepts in the lessons that follows.

## 4.3. What is Self-Directed Learning ?

**Gibbons** stated that "SDL is any increase in knowledge, skill, accomplishment, or personal development that an individual selects and brings about by his or her own efforts using any method in any circumstances at any time" (Gibbons, 2002, p.2).

**Knowles** describe Self-Directed learning (SDL) in broadest meaning as "a process in which individual take the initiative, with or without the help of other, to diagnose their learning needs, formulate learning goals, identify resources for learning, select and implement learning strategies, and evaluate learning outcomes" (Knowles, 1975, p.18) while other describe this process as self-planned learning, inquiry method, independent learning, self-education, self-instruction, self-teaching, self-study, and autonomous learning. These labels seem to imply learning in isolation, whereas Knowles pointed that SDL usually takes place in association with various types of helpers. For example, teachers, tutors, mentors, and peers. In addition, there is a lot of mutuality among a group of self-directed learners.

Meanwhile, **Abdullah (2001)**, describes the slight variations in how different educators define SDL in his review of literature show as the following:

- SDL views learners as responsible owners and managers of their own learning process. SDL integrates self-management with self-monitoring.

- SDL recognizes the significant role of motivation and volition in initiating and maintaining learners' effort.
- In SDL, control shifts from teachers to learners.
- Teachers scaffold learning by making learning visible.
- SDL develops domain-specific knowledge as well as the ability to transfer conceptual knowledge to new situations

#### **4.4. What is collaborative Learning ?**

Wikipedia defines Collaborative learning as a situation in which two or more people learn or attempt to learn something together. Unlike individual learning, people engaged in collaborative learning capitalize on one another's resources and skills (asking one another for information, evaluating one another's ideas, monitoring one another's work, etc.). Collaborative learning is heavily rooted in Vygotsky's views that there exists an inherent social nature of learning which is shown through his theory of zone of proximal development.

#### **4.5. What is Critical Thinking Skills?**

A statement by Michael Scriven & Richard Paul, presented at the 8th Annual International Conference on Critical Thinking and Education Reform, Summer 1987 defines Critical thinking as the intellectually disciplined process of actively and skilfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action. In its exemplary form, it is based on universal intellectual values that transcend subject matter divisions: clarity, accuracy, precision, consistency, relevance, sound evidence, good reasons, depth, breadth, and fairness.

### **5. Methodology**

The Research Lesson was undertaken by 4 Physics Teachers in the Science department. The title of the research is "ICT-Enhanced TfU Research Lessons to construct concepts in Newton's Laws" and the Research Question is "ICT enhanced Research Lesson promotes SDL, CoL and CTS in students". The title and Research questions were so chosen as it was decided that the whole research project be aided by ICT from the google site embedded with video, google form with PHET simulation for students to answer 3 worksheets online using google form to collecting quantitative and qualitative data on how students' are learning collaboratively, inter-dependently and whether they are making use of Critical Thinking Skills. Google forms were used to conduct a Quiz, students' survey and then teachers' feedback on the lesson. Teachers observed the Critical Thinking skill aspect to see if students were able to make multiple connections between Free-Body Diagrams to represent forces, quantitative data given on Forces and graphs on acceleration, velocity and displacement against time to arrive at the concepts in dynamics and make connections with the earlier concepts on kinematics.

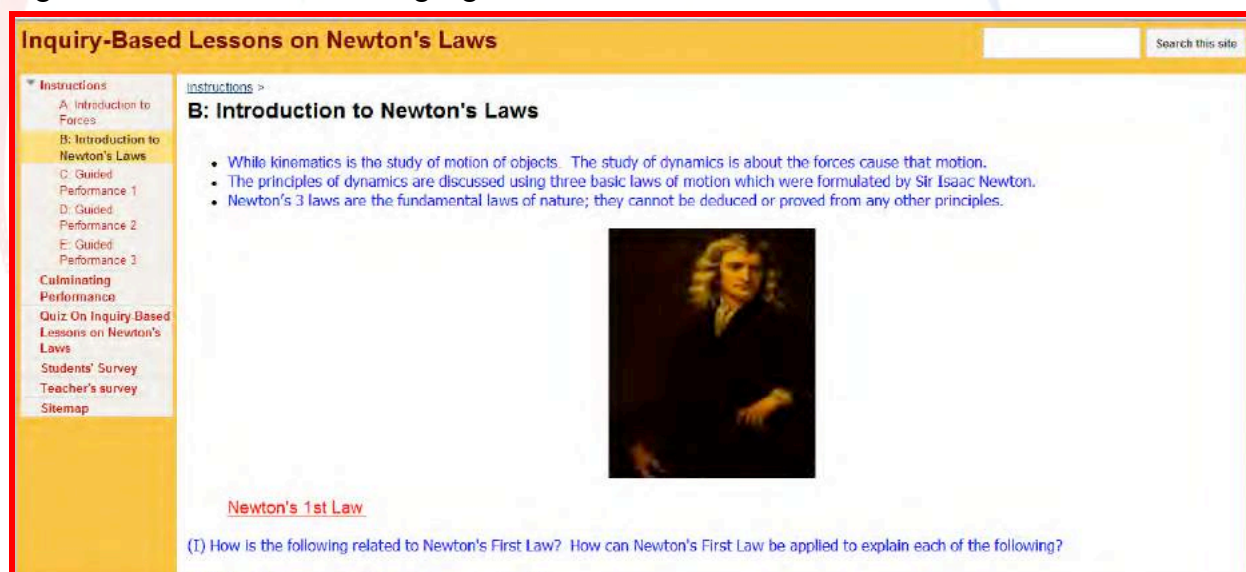
A google site was created and the activity and google/form/worksheets were crafted based on the TfU framework in the form of Performances of Understanding, namely Introductory Performance

of Understanding (IPU), Guided Performance of Understanding (GPoU) and Culminating Performance of Understanding (CPU). All Performances of Understanding were completed in groups of 2 or 3 to ensure there is self-directed and collaborative learning taking place throughout.

3 Classes of students were involved in this project. The classes chosen were two from High Ability Group, 2 from Mid Ability group due to the constraints in timetable which does not allow the teachers to observe the other classes in the level. All 4 teachers were in these classes during the online lesson to observe students' engagement, collaboration with one another, used of critical thinking skills to make multiple connections and to understand Newton's Laws through multiple visual representations. On top of these students answer a google form survey to assess themselves in these areas. Teachers also answered a survey form that assesses students in these key areas of engagement, collaboration and use of critical thinking skills after the lesson observations was conducted.

The Research project began in early April and was completed by May 2012. The Culminating Performances reflecting students understanding using Eduglogster were submitted by 23 May and the report was completed by end of October 2012.

Fig. 5.1 is a Print Screen of the google site



### 5.1.Introductory Performances of Understanding

In the Introductory Performances of Understanding, students were introduced to concepts of forces-from big picture of forces classified under 4 main categories to forces at work in Newton's Laws of Motion. Big guiding questions were asked to enable students to see some illustrations of Newton's 3 Laws in the form of images and videos from Youtube links in the site.

Fig. 5.1 Introduction to Forces

The screenshot shows a website with a yellow header titled "Inquiry-Based Lessons on Newton's Laws". On the left is a navigation menu with links like "Instructions", "A: Introduction to Forces", "B: Introduction to Newton's Laws", "C: Guided Performance 1", "D: Guided Performance 2", "E: Guided Performance 3", "Culminating Performance", "Quiz On Inquiry-Based Lessons on Newton's Laws", "Students' Survey", "Teacher's survey", and "Sitemap". The main content area is titled "A: Introduction to Forces" and "The Four Fundamental Forces". It explains that particles are acted upon by four fundamental forces: gravity, electromagnetism, the strong force, and the weak force. It then details each force: (A) Electromagnetism causes like-charged objects to repel and oppositely charged objects to attract; (B) The strong force binds quarks together; (C) Gravity is the phenomenon by which massive bodies are attracted to one another; (D) The weak force is responsible for different types of particle decays. At the bottom, there is a "YouTube Video" player.

Fig. 5.1(a) Sample of Introductory Performance of Understanding

The screenshot shows a website titled "Newton's 1st Law". It includes a heading "(I) How is the following related to Newton's First Law? How can Newton's First Law be applied to explain each of the following?" and a prompt "Click the following to watch the 2 Demonstration videos". Below this are two video players. The left player shows a ball on a stand with a circular path, and the right player shows a ball on a stand with a horizontal path. Below the videos are two URLs: <http://www.youtube.com/watch?v=8zsE3mpZ6Hw&feature=related> and <http://www.youtube.com/watch?v=uOSBC0SXVR4>.

Video and animations were used to help students relate to real life scenarios and formulate an initial understanding of the concepts in Newtons' Laws through what is observed.

Fig. 5.1 (b) Sample of Introductory Performance of Understanding

# Newton's 1st Law




(a) Jerking the ketchup from its bottle

How is Newton's First Law applied to get the ketchup out of the bottle effectively?

<http://www.youtube.com/watch?v=sabH4bJsxWA&feature=related>

<http://www.youtube.com/watch?v=8zsE3mpZ6Hw>




Fig. 5.1 (b) Sample of Introductory Performance of Understanding

## Newton's 2nd Law


Welcome to the new look of Google Sites! [Learn More](#) [Dismiss](#)

(II) How is the following related to Newton's 2nd Law?

(a) Egg trays cushioning the eggs in it.



How is Newton's 2nd Law applied here to keep the eggs from breaking on impact ? (b) Crumpled Zone of a car



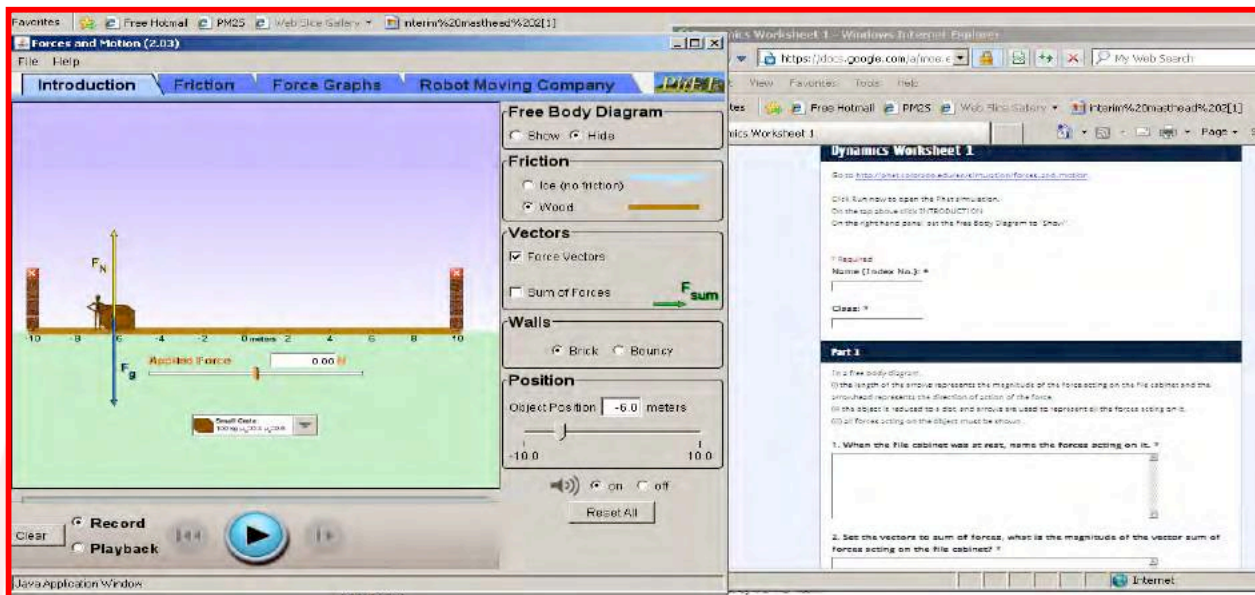
How does the crumple zone of the car reduced injury to the passengers in the car?

## 5.2. Guided Performances of Understanding

Under the Guided Performances of Understanding, students had to make sense of Newton's 3 Laws through answering the 3 google forms which helped them focus on the 3 Laws as was

demonstrated by the PHET simulation. Students work in groups of 2 or 3 on the simulation exercises, putting in values of forces to simulate its effect as well the motion of objects as represented by graphs of displacement-time, velocity-time and acceleration-time to arrive at the concepts. Quantitative and Qualitative data collected surface students' concepts and misconceptions and allows for these misconceptions to be addressed by the teachers in the team during the time of consolidation of concepts in the lessons that follows.

**Fig 5.2 (a) Sample Guided Performance of Understanding with Google form Worksheet**



**Fig. 5.2 (b) Sample of Guided Performance of Understanding (POU 1)**

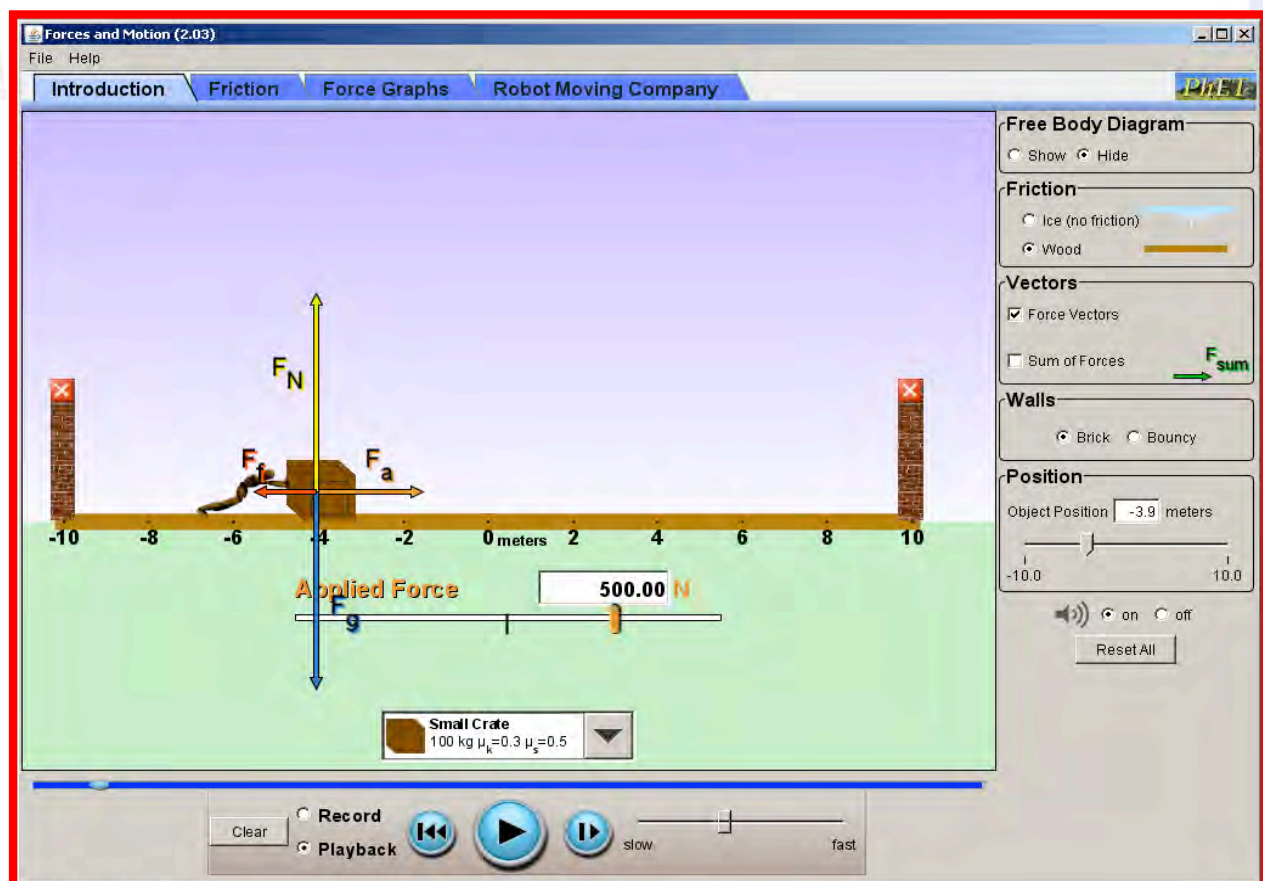


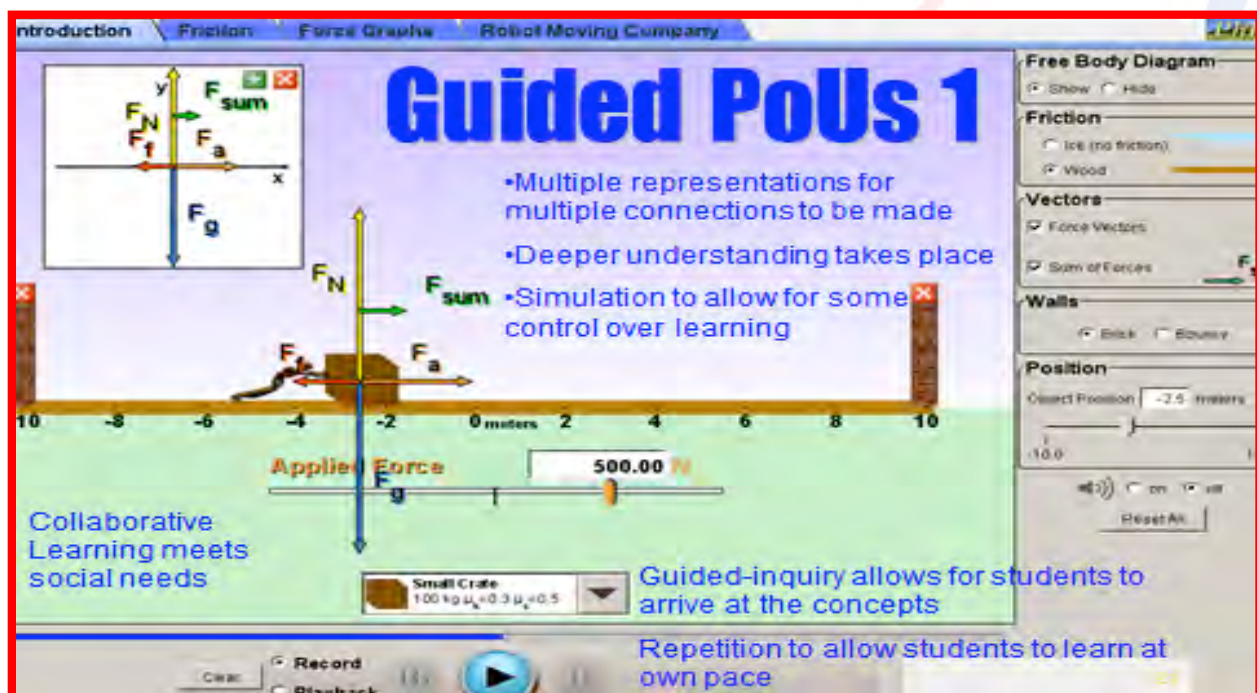
Fig.5.2 (b) shows how a force that is fixed or varying can be applied to the object to observe its effects on Friction and other interacting force like weight of object and the Normal Reaction Force. Students are able to observe the magnitude of the force and the vector sum of forces as they vary the applied force.

Fig. 5.2 (b) shows how students can look at the effects of application of fixed or varying forces from the free-body diagram in terms of sum of forces, the magnitude of the friction as related to the applied force before objects starts moving and after the object starts its motion. Students can be drawn to observe that

- the friction is equal to the applied force before motion begins and application of the force does not immediately move the object unless the force applied is equal or larger than the frictional force.
- the horizontal forces applied do not affect the magnitude of the vertical forces.
- when the object is not moving it does not mean that there are no forces acting on the object.
- when the surface is frictionless, the object can continue to move even when the applied force is totally removed and vector sum of forces in the horizontal direction equals to zero- hereby deducing Newton's First Law.
- the vector sum of forces is zero when applied force equals to the force of friction

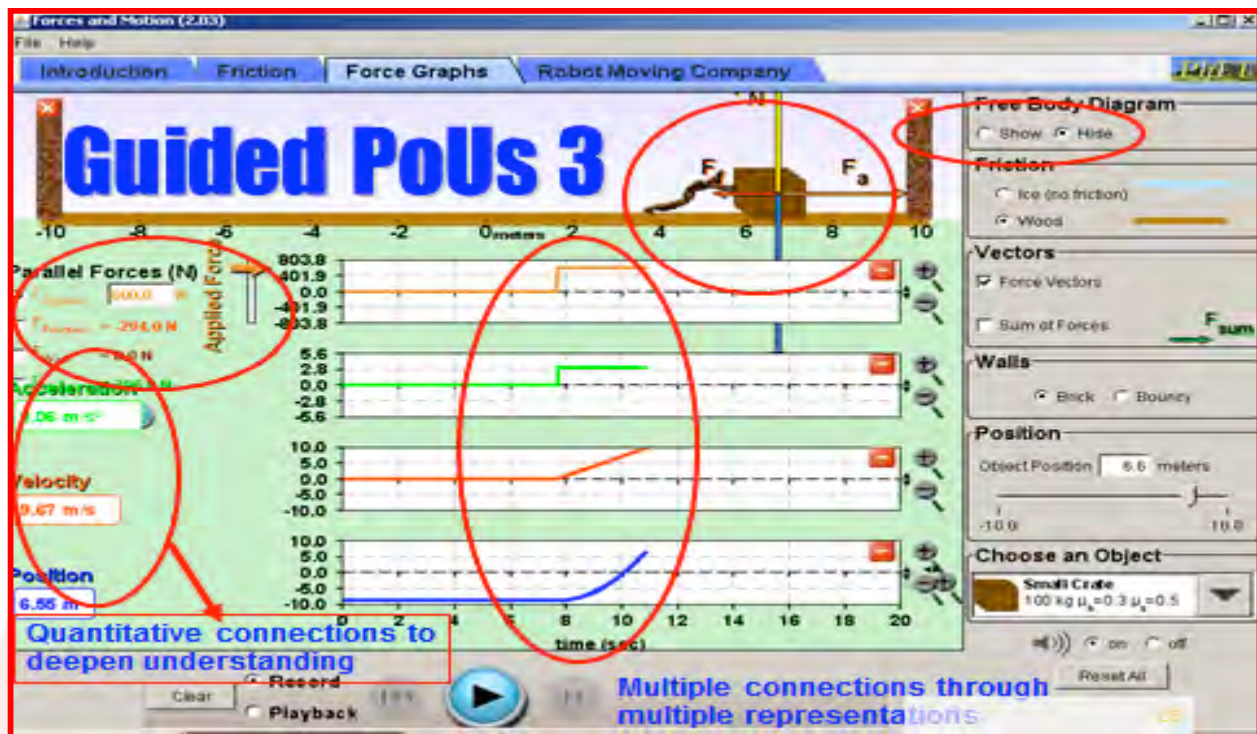
From these initial interactions with visible forces, concepts and questions will be formulated and students will gain initial understanding of concept of resultant force and deduce for themselves Newton's First Law of Motion: that when the resultant force acting on an object is zero, an object at rest will remain at rest and an object in motion will continue in constant velocity when the resultant force is reduced to zero. With the forces made visible, students can be drawn to deduce from the quantitative data the law before it is introduced in a didactic form in a formal classroom.

**Fig. 5.2(c) Sample of Guided Performance of Understanding (PoU 1)**



Students can explore force applied on frictionless surface and surfaces with friction and observe the different effects.

**Fig. 5.2(d) Sample Guided Performance of Understanding**



In this guided performance of understanding students can explore application of varying or fixed force and its effect on motion as observed in graphical forms. From this students will have to make multiple connections with the force applied deduce Newton's 2<sup>nd</sup> Law of motion, observe the effect of force and the relationship to motion as seen by the displacement-time graph, the velocity-time graph and finally the acceleration-time graph. This serves to build upon their prior knowledge in kinematics and reinforce their learning.

### 5.3. Culminating Performances of Understanding

The students then completed a Culminating Performance of Understanding by working in groups of 2 to 3 to demonstrate their understanding of the 3 Laws of Motion using 2 examples of each to explain how those examples demonstrate each of the 3 Laws of Motion. They completed the Culminating Performance of Understanding using Eduglogster as illustrated below. Again students had to collaborate online in groups of 2 or 3 to demonstrate their understanding. The deadline was for the work to be submitted by the end of the term in which the research project started.

Fig.5.3(a) Sample of Culminating Performance of Understanding using EduGlogster

**Glogster** poster yourself **EDU** Dashboard Best Glogs Categories Ambassador Blog Hi [Laktin](#) [Logout](#) [Create a Glog](#) 6

**sw8w5bd**

yiiing cindy vating Female

How do I feel right now?  
G!-)

2 Glogs 0 Glogs in portfolio 2 Views 6

[Message me](#) [access student's account](#)

**Teachers**

[Mrs. Lee](#)

**Egg Drop Experiment**

Newton's 1st Law of Motion

Friction from leaning into the wall will cause the egg to accelerate. However, the egg has inertia. The inertia will overcome the friction from the egg and cause the egg to not accelerate with the table and fall into the water.

**Tablecloth pulling trick experiment**

As the tablecloth is pulled from it will cause the utensils to accelerate. However, the utensils have inertia. The inertia is greater than the friction thus it is overcome and the utensils will not accelerate along with the tablecloth.

**Newton's 2nd Law of Motion**

In the first example, the red car had a greater mass than the yellow one being bigger in size. According to Newton's 2nd law,  $F=ma$ , the greater the mass, the lesser the acceleration with the same force applied. Thus, the red car accelerated lesser than the yellow one had it had a greater mass.

**Experiment: Two cars with different mass**

**Newton's 3rd Law of Motion**

In this example, the bowling ball had a greater mass than the foam ball. According to Newton's 2nd law,  $F=ma$ . The greater the mass, the lesser the acceleration with constant mass. Thus, the bowling ball accelerated less than the foam ball as it had a greater mass.

**Experiment: Two balls with different mass**

**Newton's 3rd Law of Motion**

As the ball exerts a force on the wall, the wall exerts an equal and opposite force on the ball.

**Example: Ball against**

**Example: Bicycles leaning on tree**

As the bicycles lean against the tree and exerts a force on the tree, the tree exerts an equal and opposite force on the bicycle. This is why the tree will not fall over from the force exerted by the bicycle, nor will the bicycle fall from the force exerted by the tree.

The culminating performance of understanding allows students the free expression to choose how they want to represent their learning. They demonstrate their understanding through use of multi-media, videos and text explaining and relating to the concepts they have learnt earlier to give expression to what they have learnt. There is differentiation here in the way they choose the video to represent the concepts they have learnt and the way they would demonstrate their understanding.

Fig. 5.3 (b) Sample of Culminating Performance of Understanding



## 6. Students' Survey

Students' survey allows the students to give feedback on how they feel about the lesson in terms of engagement level, collaboration, confidence in Self-directed, Collaborative learning with use of Critical Thinking skills.

Fig. 6. 1. Sample of Student's Survey

*Student Survey*

\* Required

**Name (Index No.) \***  
Please enter the names and index nos. of all the members in the group:

**Class \***  
3A

**1. How would you rate your engagement level during this series of lessons? \***

☐ 20%  
☐ 40%  
☐ 60%  
☐ 80%  
☐ 100%

**2. What kind of activities am I actively engaged in? \***

☐ Discussion  
☐ Calculation and problem solving  
☐ Research  
☐ Experimenting with the simulation  
☐ Formulating theories or concepts / principles  
☐ Making multiple connections between the different representations

**3. What proportion of the content / syllabus for this topic was covered within these series of lessons? \***

☐ 20%

## 7. Teachers' Survey

Teachers' Survey allows teachers participating in the Research Lessons to give feedback on students in the area of engagement, self-directed learning, collaborative learning with use of critical thinking skills. This feedback was based on the lesson observation of the classes selected for this project.

Fig. 7.1. Sample of Teachers' Survey

**PLC Teachers' Survey**

\* Required

How would you rate the engagement level of students during this online lessons on Newton's Laws? \*

☐ 20%

☐ 40%

☐ 60%

☐ 80%

☐ 100%

What kind of activities are the students actively engaged in? \*

☐ Discussion

☐ Calculation and problem solving

☐ Research

☐ Experimenting with the simulation

☐ Formulating theories or concepts / principles

☐ Making multiplex connections between the different representations

☐ Other: \_\_\_\_\_

What proportion of the content / syllabus for this topic was covered within these series of lessons? \*

☐ 20%

☐ 40%

☐ 60%

## 8. Qualitative Analysis of Students' Work

### 8.1 Concepts and Misconceptions from Worksheet 1

For the first part of the worksheet, students were first guided using an applet and google form to name the forces acting on an object at rest and observe the magnitudes and directions of the force, then deduced Newton's 1<sup>st</sup> Law for an object at rest.

The second part of the worksheet required the students to apply a force on an object, observe and deduce Newton's 1<sup>st</sup> Law for an object in motion. Subsequently, the students were guided to observe and explain the motion of the moving object after the applied force was removed.

The last part of the worksheet guided the students to evaluate the effect of resultant force by bringing in friction on a stationary object and a moving object.

Fig. 8.1 (a) Analysis of students answers to worksheet 1

(a) When the file cabinet was at rest, name the forces acting on it.

Gravitational force and Normal reaction force. Gravitational Field Strength, Normal Reaction Force from the floor. Normal force and gravitational force. Gravitational Force

Normal Reaction Force. gravitational force normal reaction force. 1)Gravitational Force 2)Normal Reaction Force 3)Frictional Force. Normal Reaction Force and Weight. Gravitational Force Normal Reaction Force. Downward gravitational force and normal reaction force. The forces acting on the file cabinet are gravitational force and normal contact force. Normal reaction force and Gravitational force. Normal Reaction force and Weight. Gravity.

(b) With the file cabinet at rest, set the vectors to sum of forces, what is the magnitude of the vector sum of forces acting on the file cabinet (represented by green arrow)?

The magnitude of vector sum of forces is zero. Zero, the object is at rest. 0N. 0. 0. 0 Newton. Positive magnitude. 0Newton. 0. The magnitude of the vector sum of forces acting on the file cabinet is zero. 0 N. 0. the same. 0. 0. 0 N. 0. Vector sum of forces while file cabinet is at rest magnitude = 0.0N. 0. 0N. 0N. 0. 0. N. 0. 0. 0. 0. no magnitude. 0. 0N. the magnitude of the file cabinet is 0. 0. 0. 0. 0. There is no magnitude. 0N. 0. 0. 0. 0N. 0N. 0. 0N. (-10) +10=0. 0. 0. 0N. ZERO. 0N. 0.00N. 0N. zero. 0N. Zero. 0. 0. 0. 0. Magnitude: 0N. Magnitude = 0. 0.0N. 0N. 0.0N. No direction. 0N. 0. The magnitude of the vector sum of the forces acting on the file cabinet is zero. 0. no magnitude. 0N. 0. 0. 0N. 0. 0. 0. 0N. 0. 0N. 0N. 0N. 0. ...

Students' answers showed that they were able to name the pair of forces acting on a stationary object and deduced that they are equal in magnitude which resulted in zero resultant force.

Fig. 8.1 (b) Sample of students' answers on Worksheet 1

(b) State what happened to the file cabinet after letting go of it.

constant velocity motion   It continues to move at constant velocity.   It continues moving at constant speed.   It moves at constant velocity.   It starts to accelerate.   It travelled at constant velocity and with ...

(c) Repeat the observation in step (2) with a larger force applied. How is the motion of the file cabinet different when a larger force is applied to it and then let go?

larger constant velocity   It moves at a greater constant velocity.   It moved at a faster, constant speed   It moves at a constant but higher velocity   It accelerates at a faster rate   It has a greater final c ...

(d) Complete the following for Newton's 1st Law for an object in motion. When no resultant force acts on an object, an object in motion

continues with its current motion   When no resultant force acts on an object, an object in motion moves at a constant velocity.   continues moving at constant speed.   It will continue moving at constant velocity (with friction being negligible).   moves with constant velocity   moves with constant velocity with zero acceleration   When no resultant force acts on an object, an object in motion will continue to travel in a constant velocity in a straight line.   when no resultant force acts on an object, an object in motion will continue to move in the same direction at constant velocity.   continues in its state   ...

From the results, the students were able to describe the motion of a moving object on a frictionless ground without applied force as object moves with constant velocity.

Fig. 8.1 (c) Sample of students' answers on Worksheet 1

[illegible]

The results reflected the students' ability to

- (a) state that the applied force is equal in magnitude to the frictional force for an object at rest.

- (b) When the resultant force equal zero Fig. 8.1 (b) the object move with constant velocity
- (c) state that the applied force is more than the frictional force for a moving object.
- (d) deduce that a positive resultant force will accelerate the moving object.

Students gave varied answers for a constant resultant positive force applied on the object. Answers include :

- (a) acceleration
- (b) deceleration
- (c) constant velocity

The reasons for this could be students did not know how to control the setting to bring about a constant positive force as it involves holding the force steady or setting a constant applied force that is larger than friction.

## 8.2. Concepts and Misconceptions from Worksheet 2

In the first part of this worksheet, students applied a constant force on an object at rest and deduced the magnitude of the different forces acting on the object (Gravitational force, Normal Reaction Force, Friction and applied force). The students were also asked to deduce the vector sum of horizontal forces and the vector sum of the vertical forces for this stationary object.

Fig. 8.2 (a) Sample of Students' answers to Worksheet 2

**Part 1**

Apply a force of less than 500 N, eg 300 N force. State the magnitude of

**Gravitational Force**

10 -500N 9.8 9.8m/s<sup>2</sup> 9.8m/s<sup>2</sup> 980 9.8m/s<sup>2</sup> 9.8m/s<sup>2</sup> 980N 1.00\*10<sup>3</sup>N 980N 980N -490N 9.8N 9.8 9.8 50 9.8 980 N 9.8 9.8 N/kg 300N 980N 980 9.8 -980 300N -980N -980N 980 980 N 980N 100 980 980 N 980N 10 980 980 9.8 N kg-1 0N 9.8 1000 N 980 9.8m/s<sup>2</sup> ...

**Normal Reaction Force**

300N 500N 9.8 10N 9.8m/s<sup>2</sup> -980 9.8m/s<sup>2</sup> 9.8m/s<sup>2</sup> 980N 1.00\*10<sup>3</sup>N 980N 980N -490N 9.8N 9.8 9.8 50 9.8 -980 N 9.8 980 N 300N 980N 980 -9.8 980 490N 980N 980N 980 980 N 980N 100 980 980 N 980N -10 -980 980 9.8 N kg-1 0N 9.8 -1000 N 980 9.8m/s<sup>2</sup> 980 ...

**Vertical Vector Sum of Forces**

310N 0N 0 10N 19.6 0 19.6 0 0N 0N 0N 0N 0N 0 0 0 0 19.6 202N 0 0N 600N 0N 0 0 0 0N 0 0 0 0 N 0N 200 0N 0 0N 0 0 2940 0 0N 0 0N 0 dsf 0N 0N 0 0N 0 0 0 0N 0N 19.6 0 0N 19.6 N equals to 10N 0 0N 0N 0N 0 0N

Maximum Static Friction( $F_s$  max)

2.0N	98.0N	4.9	0.5kg	0.5	490	0.5	4.9	490N	500N	490N	490N	245N	0.5	4.9	4.9	25	0.5	98N	0.5	490												
N	2	150N	490	0.5	327	245N	5	5	490	490 N	490N	300	0N	0	147N	-5	-500	1470	0.5	150N	2.94	-500										
N	490	sdf	0.5	0N	245	0.5N	4.9	392	0.5	490	0.5	0.5	0.5	0.5	0.5	490	4.9 N	...														

Applied Force

300N	300N	300	300N	490	400	490	445	300N	300N	300N	300N	300N	300N	300	300	300	300	300N	200	300											
N	300N	300N	300	490	300	300N	300N	300N	400	300 N	300N	300	302.50N	300	300N	300	300	300	300	300	300N	300N	300								
N	300	300N	300N	300N	300	300N	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300N	300N	300								

Frictional force

4.0N	98.0N	300	0.8kg	-490	-490	-490	445	300N	300N	300N	294N	-98N	300	4.9	2.9	40	0.8	98N	200	300 N	300N	-300N	300	-490								
300	300N	-300N	-300N	400	50 N	300N	more than or equal to 300	302.50N	0.8	300N	-300	-300	300	0.3	0N	300N	-300N	-300	sdf	300	...											

Horizontal Vector Sum of Forces

304N	202N	0	300N	0	0	0	0	0N	0N	0N	6N	-202N	0	0	298	200	300N	0N	0	0N	600N	0N	0	0	0N	0	0	0	0	0	0
N	0N	600	0N	0	0N	0	0	0	300N	0	0N	0	sdf	0N	600N	202	202.0N	0	0	<0	0	0	0	0N	600	0	0N	600			
N	200N	153	0N	0N	250N	-200	0N																								

From the students' answers, most were able to deduce that since this object is stationary, the gravitational force and the normal reaction force are equal in magnitude; hence the vector sum of the vertical forces is zero. Their answers also show understanding that the applied force and frictional force must be equal and the vector sum of horizontal forces must be zero for an object that is not moving.

Being able to answer the first part of worksheet 2 correctly shows that students have understood the concepts from worksheet 1 and are able to apply Newton's first Law: If there is no resultant force for a stationary object, it will continue to remain at rest (i.e. no change to its state of motion). Conversely, if a stationary object remains at rest, it would mean that there is no resultant force on the object.

Fig. 8.2 (b) Sample Answers to Worksheet 2

<b>Part 2</b>																													
Apply a force of more than 500 N, eg 600 N force. State the magnitude of																													
<b>Gravitational Force</b>																													
10	500N	9.8	9.8m/s <sup>2</sup>	9.8	980	9.8	9.8	980N	1.00*10 <sup>3</sup> N	980N	980N	490N	9.8N	9.8	9.8	50	9.8	980N	9.8	9.8N/kg	600N	980N	980	9.8					
980	490N	-980N	-980N	980	980N	980N	100	980N	980N	980N	10	980	980	9.8N kg-1	0N	9.8	1000N	980	9.8m/s <sup>2</sup>	980N	980N	490	4	...					
<b>Normal Reaction Force</b>																													
600N	500N	9.8	10N	9.8	980	9.8	9.8	980N	1.00*10 <sup>3</sup> N	980N	980N	490N	9.8N	9.8	9.8	50	9.8	-980N	9.8	980N	600N	980N	980						
9.8	980	490N	980N	980N	980	980N	980N	100	980N	980N	980N	-10	-980	5880	9.8N kg-1	0N	9.8	-1000											
N	980	9.8m/s <sup>2</sup>	980N	980N	490	490	...																						
<b>Vertical Vector Sum of Force</b>																													
610N	0N	0	10N	19.6	0	19.6	0	0N	0N	0N	0N	0N	0	0	0	19.6	402N	0	600N	1200N	0N	0	0	0N	0	0	0	0	0
N	0N	200	0N	0	0N	0	0	0	0N	0	0N	0	sdf	0N	1060N	0	0N	0	0	0	0	0N	0N	19.6	0	0N	19.6N	more than	
500N	0	0N	0N	0N	0	0N																							

In the second part of this worksheet, students were instructed to apply a force greater than the frictional force, hence causing the object to move. Since there are no changes in the forces in the vertical direction, the answers to the gravitational force, normal reaction force and vector sum of vertical forces remains unchanged as in part 1.

Most students were unable to arrive at the correct answer to the frictional force because they were unsure of the equation as the subscripts were unclear in the Googleform. The disadvantage of the googleform as a ICT tool was that no superscript or subscript could be used to represent physical quantities in Physics and that created hurdles to student understanding how to derive the value of both kinetic and static friction. The limitations can be overcome if this tool included some mathematical functions and symbols as well as allows diagrams to be included into the form to aid understanding of the questions posed.

Fig. 8.2 (c) Answers to Worksheet 2

In part 3 of the worksheet, we wanted students to relate the applied force and the acceleration. Students were told to observe the motion of the object and deduce how the motion differs with a larger applied force. All students were able to reach the intended conclusion, that is, the object has greater acceleration, or that it moves faster with a larger applied force. Students were also able to explain for this observation by applying to Newton's second Law. In

their answers, students correctly pointed out that it is the “unbalanced force”, or the “resultant force” that leads to the acceleration and not the “applied force”.

### Summary of concepts learnt

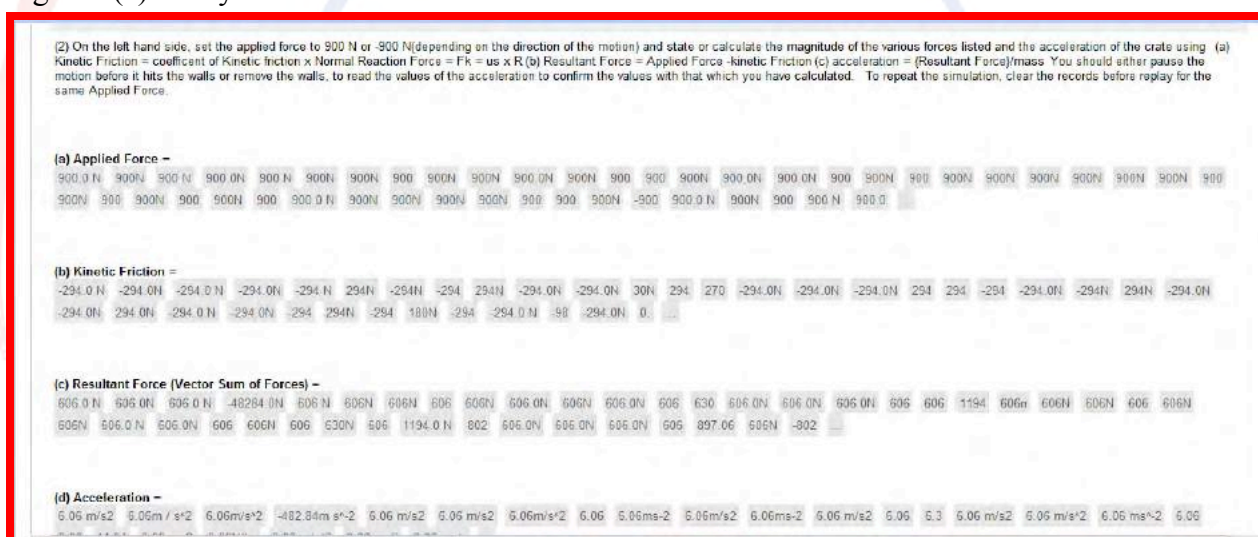
Students are able to understand better the concepts of

- (a) unbalanced/ resultant force
- (b) relationship between the resultant force and the acceleration

### 8.3. Concepts and Misconceptions from Worksheet 3

In this worksheet, students were guided to calculate the resultant force as a vector sum of applied force and kinetic friction. From this, students calculated the value of acceleration and observed the graph of displacement-time graph as a parabola, velocity-time graph as a constant rate of increase in velocity and constant acceleration as a graph parallel to the x-axis. This reinforces the earlier concepts of kinematics and helps them to deduce Newton’s Second Law by deducing that the Resultant force is a product of mass and acceleration.

Fig. 8.3 (a) Analysis of students answers to worksheet 3



Students’ answers reveal that they did not have problem with arriving at the resultant force or the calculation of the acceleration.

Fig.8.3(b) Sample of students' answers on Worksheet 3

**PART 3**

(3) At the bottom right hand corner click "+" to open up the graphs acceleration, velocity and displacement. Describe the graph shape and the type of motion represented by each of the shape of the graphs.

**(a) Acceleration against time graph**  
Horizontal line representing constant acceleration Constant acceleration The gradient of the graph is zero. The type of motion represented by the graph is of uniform acceleration constant The graph is tr

**(b) Velocity against time graph**  
Upward slope in a straight line, representing constant increase in velocity. Increasing velocity at a constant rate The gradient of the graph is positively constant. The type of motion the graph repre

**Displacement against time graph**  
Upward curve, representing a faster increase in displacement over time. Increasing displacement at an increasing rate The gradient of the graph is positively increasing. The type of motion is increas

Fig. 8.3 (b) shows student ability to state the following relationship :

- (e) displacement and time for an object in constant acceleration as moving with increase in displacement at an increasing rate,
- (f) constant increase in velocity,
- (g) constant acceleration

Fig. 8.3(c) Sample of Students' Answer to Worksheet 3

**(b) Kinetic Friction =**  
-98.0 N -98.0 N -98.0 N -294N -98 N 98N -98N -98 98.0N -98.0N 98.0N 10 N 98 180 -98.0N -98.0N -98.0N 294 -98 -98 -98.0N -180N 98N -98.0 N -98.0N 98.0N  
-98.0 N -98.0N -98 98N -98 180N -98 -245.0 N -98 -98.0N 0.2N 0.2N 270 2.94 -98N -98 -98.0

**(c) Resultant Force (Vector Sum of Forces) =**  
802.0 N 802.0N 802.0N 606N 802 N 802N 802N 802 802N 802.0N 802.0N 802.0 N 802 720 802.0N 902.0N 902.0N 902.0N 906 802 998 502.0N 720N 802N 802.0 N 802N  
802N 802.0 N 802.0N 802 802N 802 720N 802 1145.0 N 802 802.0N 802.0N 802.0N 630 897.06 802N

**(d) Acceleration =**  
16.04 m/s<sup>2</sup> 4.01m/s<sup>2</sup> 16.04m/s<sup>2</sup> 6.06N 16.04m/s<sup>2</sup> 16.04 m/s<sup>2</sup> 16.0m/s<sup>2</sup> 16.04 16.0ms<sup>-2</sup> 16.04m/s<sup>2</sup> 16.04ms<sup>-2</sup> 16.04 m/s<sup>2</sup> 16.04 14.4 16.04 m/s<sup>2</sup> 16.04 m/s<sup>2</sup> 16.04 ms<sup>-2</sup>  
6.06 16.04 19.96 16.04ms<sup>-2</sup> 14.4N/kg 11.46 m/s<sup>2</sup> 16.04 ms<sup>-2</sup> 1

**PART 6**  
The relationship between an object's mass m, its acceleration a, and the applied force F is F = ma. Acceleration and force are vectors (as indicated by their symbols being displayed in slant bold font), in this law the direction of the force vector is the same as the direction of the acceleration vector.  
The acceleration of an object as produced by a net force is directly proportional to the magnitude of the net force, in the same direction as the net force, and inversely proportional to the mass of the object.  
When a resultant force acts on an object of constant mass, the object will accelera

From the students' answer it was clear that students were able to derive the relationship between resultant force, mass and acceleration with no difficulty.

**Fig.8.3(d) Sample of students answer to worksheet 3**

**PART 7**

**(7)(a) Predict the motion of the file cabinet with mass 50.0 kg,  $\mu_k = 0.2$  and  $\mu_s = 0.5$ , if a force of 600 N is first applied for 2.0 s, after which the applied force is decreased to 245 N for the next 2.0 s.**

From 0 s to 2.0 s, the file cabinet moves at an increasing velocity with a constant rate of acceleration. At 2.0 s, the acceleration of the file cabinet decreases. From 2.0 s to 4.0 s, the file cabinet continues to move at an increasing velocity but with a lower constant rate of acceleration.

The file cabinet will accelerate at a constant rate for the first 2.0 s, then, at 2.0 s, it will continue to accelerate at a constant rate, but at a slower rate.

The file cabinet would accelerate in the direction of the resultant force for the first 2.0 s, causing the velocity of the file cabinet to increase.

**7(b) Explain the motion in PART 7(a) using Newton's Laws of Motion.**

The applied force, the mass of the file cabinet and the acceleration is related through the equation  $F=ma$ . Therefore, when the force applied decreases, the acceleration will decrease as well since the mass of the object is constant.

For the first 2.0 s, the acceleration is constant as the same net force is exerted on the object throughout the 2.0 s, but at 2.0 s onward, the acceleration is still constant due to a constant net force, but at a slower rate since the acceleration is directly proportional to the net force.

According to Newton's second law, the formula of the acceleration would equal to  $a = F/m$ .

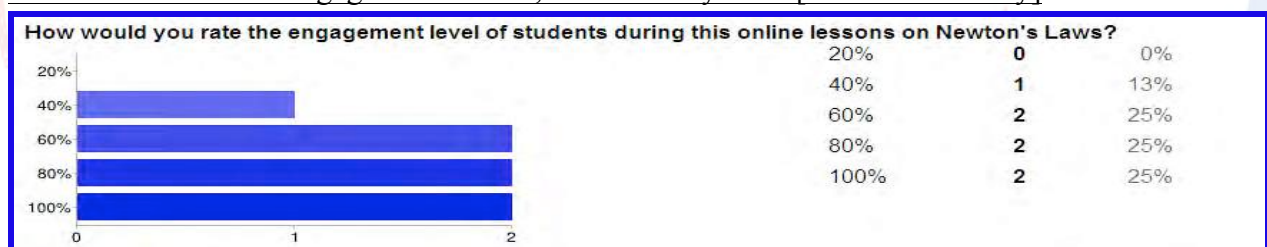
The above shows the extension to learning where students had to predict the effect of a reduced resultant force on motion. Answers revealed students ability to arrive at the concept of the reduced acceleration with a reduced resultant force and the right explanation with it of acceleration being proportional to the resultant force acting on the object.

## 9. Analysis of Teachers' Survey

For the teachers' survey, 3 teachers submitted their feedback according to their observations for each of the classes, 3A, 3B, and 3F. Students' survey was collected from 57 students after the series of 3 ICT lessons on Newton's Laws.

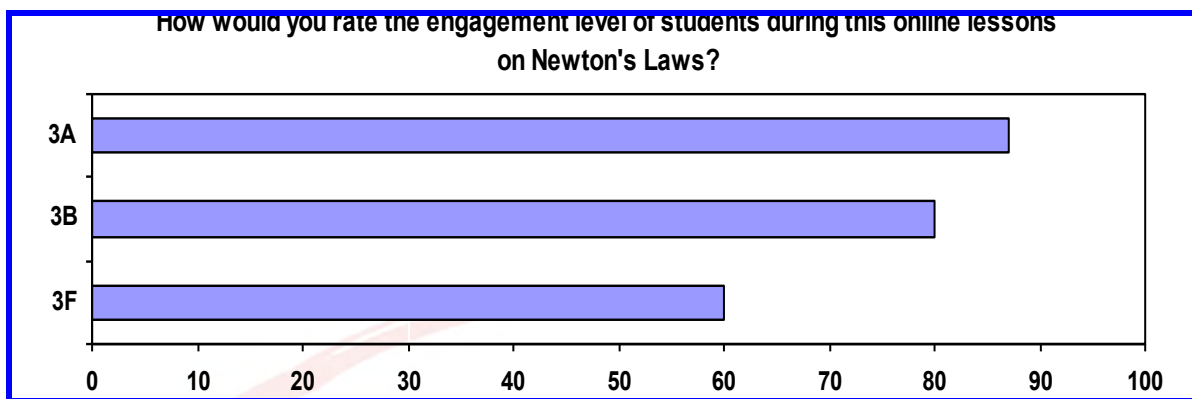
### 9.1. Students' Engagement Level

**Chart 9. 1: Students' Engagement Levels, not sorted by class [Teachers' Survey]**



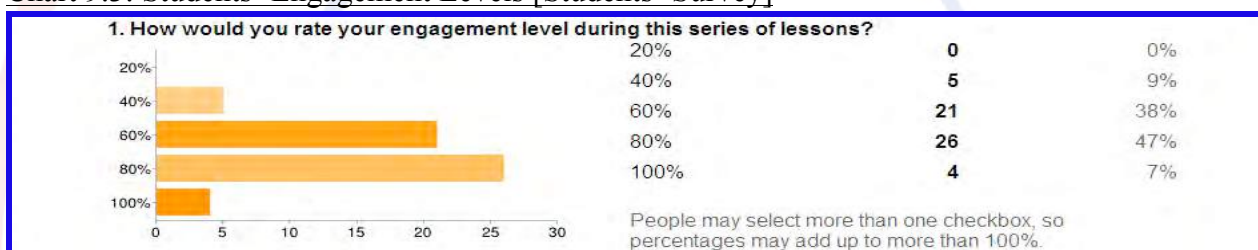
We noticed that students' engagement level during this activity varies from class to class. As there is no objective and measurable yardstick for scoring the engagement level of students, the average of teachers' scoring for each class is taken as teachers' perceived engagement level of the class. We can see from the survey [Chart 9.1] that there is a range of engagement levels from 40% to 100% for the different classes. 75% of the teachers rate the engagement level of the students at more than 60 %. The use of percentages scaled at 20 %, 40 %, 60 %, 80 % and 100 % does not accurately reflect what is observed as the scale is too discrete and better measures have to be designed to overcome this.

Chart 9. 2: Average Students' Engagement Levels by class [Teachers' Survey]



According to teachers' responses [Chart 9.2], teachers observed that the students' engagement level in the activity is high for classes 3A and 3B. However, teachers felt that students in class 3F have a slightly lower engagement level even then it is at least 60%. The limitation comes in that the engagement level comes in discrete steps of 20 % and teachers could only estimate their perception represented by these percentages. A better designed survey question could measure the engagement level on a scale of 10 perhaps.

Chart 9.3: Students' Engagement Levels [Students' Survey]



From the students' survey [Chart 9.3], students also reported engagement levels of about 40% to 100% during the lesson, and this corresponds to our Teachers' Survey in Diagram 1. 92 % of Students however, reflected an engagement level of more than 60 % and 7 % reflected that they are totally engaged in the lesson. Students therefore perceived themselves as more engaged than the observation by the teachers. The difference could have been due to differing understanding of what engagement meant to students and how it meant to teachers. Probably the high percentage more accurately reflected students being actively involved in the learning whereas the teachers were looking at students who got distracted by other options on the simulation bar and were less focused on the worksheet at hand and thus deemed as less on-task during the lesson.

## 9.2. Students involvement in Activities

Chart 9.4: Activities Involved in during the lesson [Teachers' Survey]

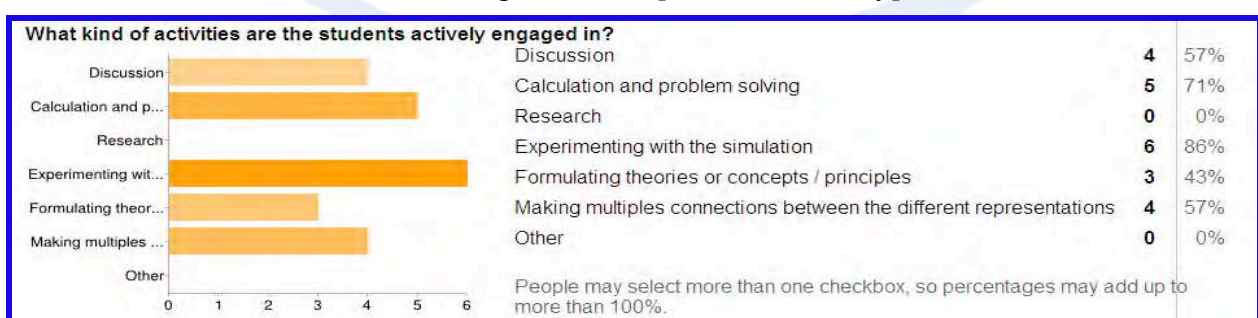
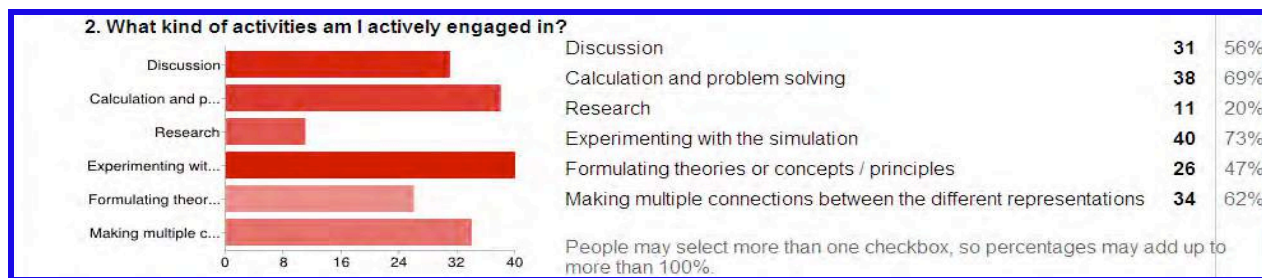


Chart 9.5: Activities Involved in during the lesson [Students' Survey]



From the teachers' observations [Chart 9.4], the activities that the students are engaged in are mainly discussion, calculation and problem solving, experimenting with the simulation, formulating theories or concepts, making multiple connections between the different representations. However, a small percentage of the students [Chart 9.5] reported that they were also engaged in research during the lesson.

This was surprising as we had not build in questions or activities that require any form of research into this lesson. However, as there was availability of use of internet, some students tried to use Google to search for the Newton's Laws of motion to aid them in this exercise instead of coming up with their own understanding of what Newton's laws, which might explain why they considered research part of this exercise.

We are hearten also to know that students recognized that knowledge is at their fingertip and with the pressing of a few keys on the computer key boards they can easily search for answers to give understanding of something that they do not understanding or is trying to figure out.

Chart 9.6: Content Coverage [Teachers' Survey]



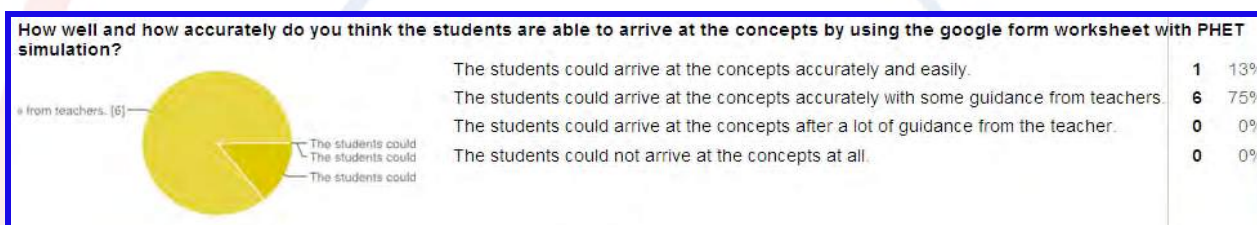
Teachers agreed that more than 60% of the syllabus [Chart 9.6] for the topic of Newton's Law could be covered through the use of the simulation and guided questions on the Google worksheet. The topics covered in this series of ICT lessons are: Free-body diagrams, resultant force, balanced and unbalanced forces, Newton's laws, kinetic and static friction, and the calculation of acceleration using **Newton's Second Law**.

However, there were certain key concepts that could not be adequately covered in this series of lessons. They are: explanation of Newton's 3 laws, the applications of Newton's 3 laws in other situations, and problem solving using Newton's Law. This would become our addition to the future Research Lessons when we use Youtube videos and guide students in arriving at the explanation to the concepts found in Newton's 3 Laws of Motions. We also have to acknowledge that there are multiple pedagogies that have to be used to engage students to arrive at the understanding of concepts and ICT tools is one but not the only way.

### 9.3. Student Understanding and Teacher Involvement

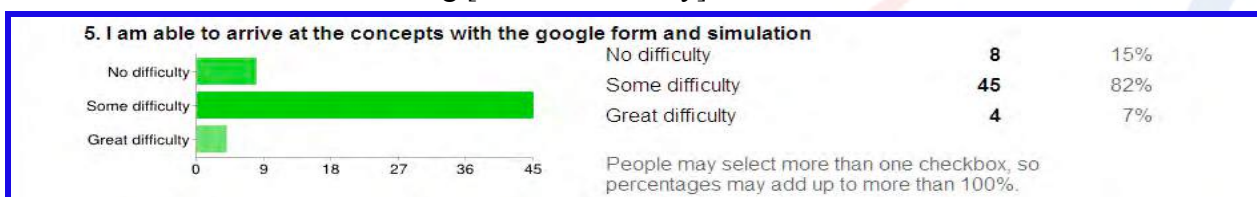
Most teachers noted that students were able to arrive at the desired concepts accurately with some guidance from the teachers [Chart 9.7]. Some students expressed that they faced some difficulty [chart 9. 8] with the use of the simulation (how to use it) and understanding the questions. And all teachers agreed unanimously that only about 20% of the lesson is spent focusing and paying attention to the teacher [chart 9. 9]. This 20% of the lesson spent on paying attention to the teacher was for the purpose of conducting a briefing for the students before they start experimenting with the simulation. Again this 20 % could be lower if we have given the teacher the freedom to fill in a number rather than be guided to click on what was provided. The advantage of this is analysis is made easier with a quantitative rather than a qualitative representation of the teachers' answer. The disadvantage of this is that the answers are too discrete and there are no values possible in between for a more accurate representation to be given. In future research, we have to bear this in mind and attempt to strike a better balance in getting more accurate responses with the ease of analysis of results with discrete numbers which compromises on the accuracy.

Chart 9. 7: Students' Understanding [Teachers' Survey]



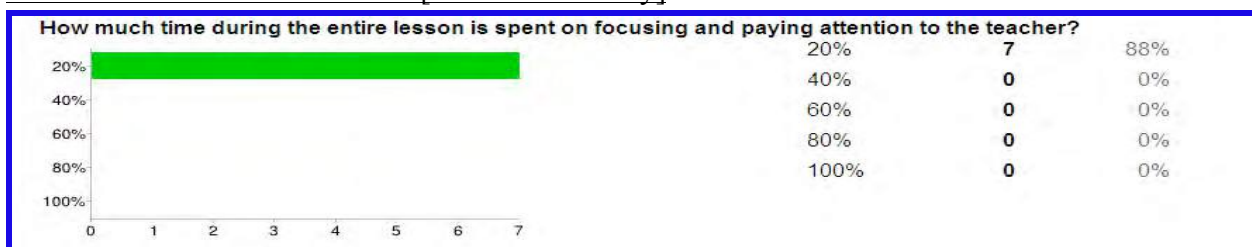
All the teachers are confident that the students were able to arrive at the concepts accurately with some guidance from the teachers. This guidance were usually technical in nature dealing with either the software or it could be the way the questions were phrased and students needed some clarification to aid them in understanding what was being asked.

Chart 9.8: Students' Understanding [Students' Survey]



97 % of the students reflected that with some help they were able to arrive at the concepts. When the students indicated some difficulty, it was usually related to the way the questions were phrased and some getting used to maneuvering the stimulation. They were not necessary related to the difficulty in arriving at the concepts per se as was reflected in the answers collected from the 3 worksheets which reflected a high percentage of students deducing the correct concepts at the end of the simulation exercise. To determine what this difficulty is, we could have clarified by following up with a question requiring students to elaborate on the difficulty faced.

Chart 9.9: Teacher-Centredness [Teachers' Survey]

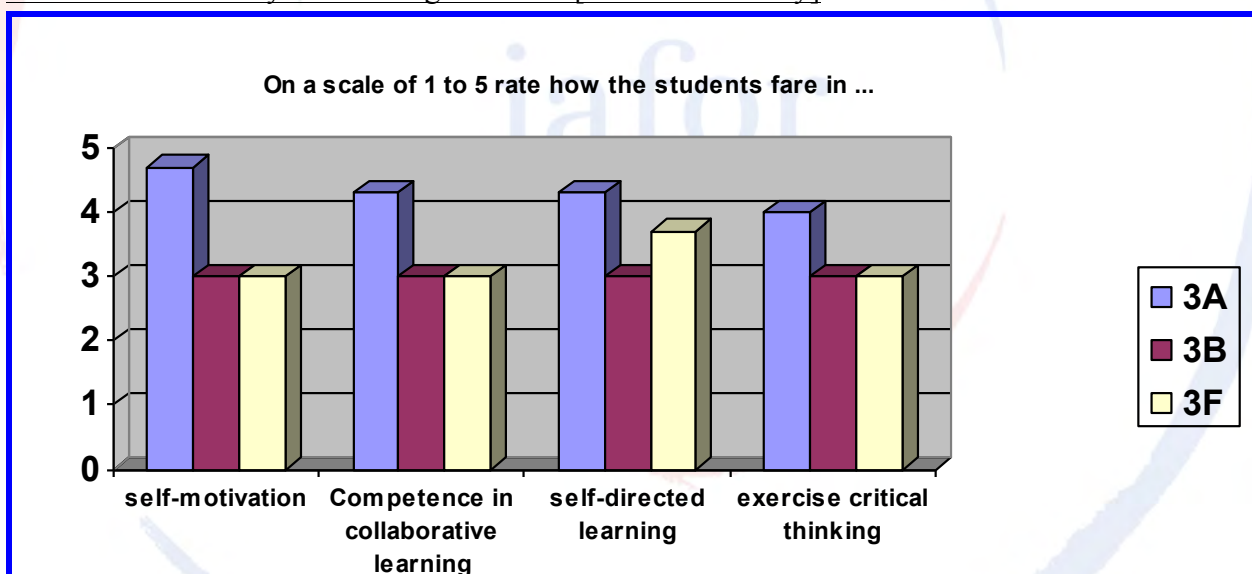


Without the teacher doing didactic teaching in front of the class for the 80% of the time, the role of the teacher during this lesson is mainly to interpret and to clarify questions in the worksheet and to provide technical support on how to use the simulation during the lesson itself. No teaching of the concept was done before the research lesson or during the implementation of the research lesson. Students were left to explore the simulation with the guided worksheet and to derive their own understanding after discussion with their peers.

#### 9.4. Learning Attitudes and Behaviours

Teachers scored students with respect to our observations on how students fared in terms of self-motivation, competence in collaborative learning, self-directed learning and critical thinking during this lesson, and the observations are as follows:

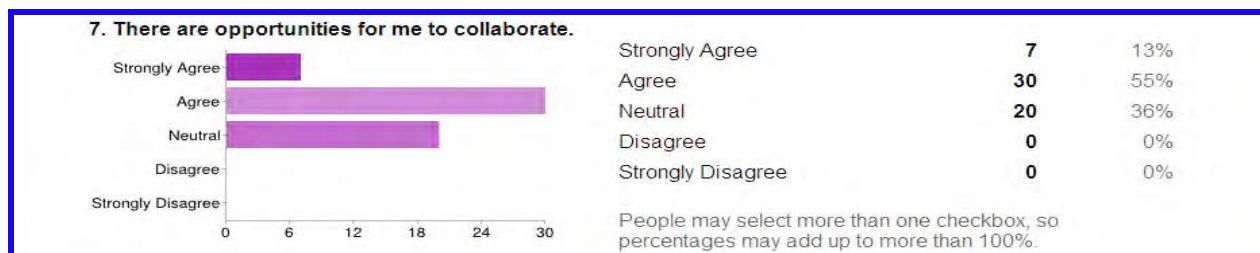
Chart 9.10: Summary of Learning Attitudes [Teachers' Survey]



Feedback from students showed that there were opportunities for collaborative learning, self-directed learning and critical thinking during the lessons [Charts 10.1,10.2 and 10.3].

## 10. Analysis of Students' Survey

Chart 10.1: Students' Feedback on Lesson – Collaborative Learning [Students' Survey]



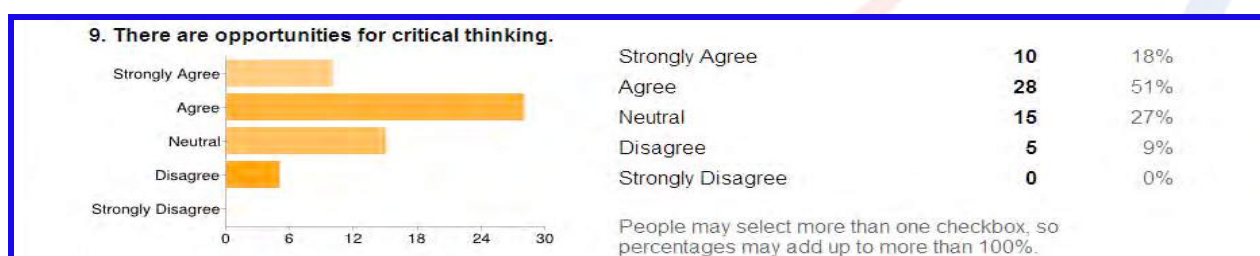
68 % of the students responded that they had opportunities to collaborate in this research lesson with 0 % disagreeing. This reflected that students' were generally positive to the collaboration opportunities provided through the way the lesson was conducted. As usual with a choice for a "neutral" answer, respondents who are less expressive has tendency to be non-committal and so we have the disadvantage of having 36 % who chose to sit on the fence.

Chart 10.2: Students' Feedback on Lesson – Self-Directed Learning [Students' Survey]



88 % of students indicated they had opportunity for self-directed learning. One student disagreed. Question is raised as to why this student disagreed to having the opportunity for self-directed learning. The single student who disagreed could either be not used to this method of learning or is not incline or willing to adopt a new way of learning or there may be other reasons.

Chart 10.3: Students' Feedback on Lesson – Critical Thinking [Students' Survey]



Students showed more confidence in Collaborative Learning and Self-directed learning after this lesson [Chart 10.4 and 10.5]. About 70 % to 88 % agreed that there were opportunities to collaborate, opportunities for Self-Directed Learning as well as exercising of Critical Thinking Skills. Though there are still a handful of students who felt insecure and would like to have more hand-holding from the teacher. This might be because one of students' more comfortable modes of learning is didactic teaching [Chart 10.6], as we can see from the Students' Survey, and not having a teacher to teach directly in front of the class could have made them insecure about their ability to learning. Students are still not exposed enough to independently learning and therefore feel that they can learn only when a teacher teaches well.

Chart 10.4: Students' Confidence in Collaborative Learning [Students' Survey]



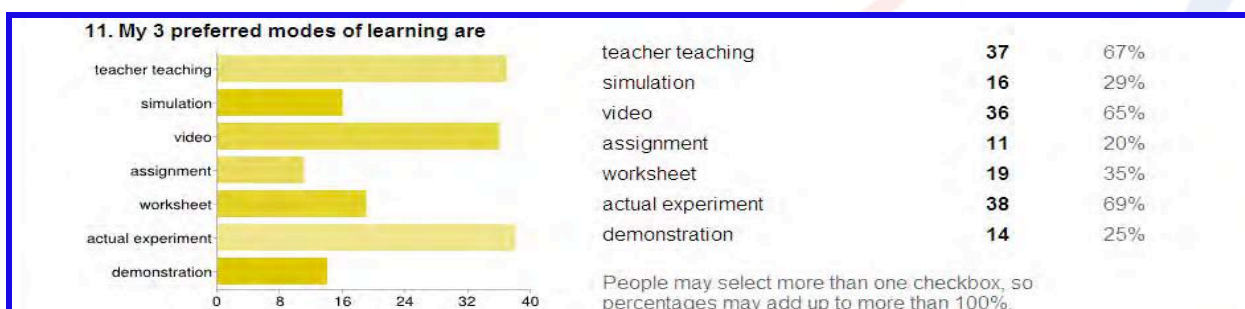
In general students scored high on the level confidence in CoL-82 % [Chart 10.4], SDL-88% [Chart 10.2]. Results show that students of high calibre would benefit greatly with well-designed lessons that includes these component of collaborative learning and self-directed learning. However, this need not necessarily be confined to students of high ability as the simulation used for experiential learning should also benefit students of any ability group. However, this is area of research can be undertaken at another platform perhaps across schools with students of different ability.

Chart 10.5: Students' Confidence in Self-Directed Learning [Students' Survey]



We also scored students based on their self-managing, self-monitoring and self-modifying behaviours. 89 % indicated they were more than 60% confident in self-directed learning.

Chart 10.6: Preferred modes of Learning [Students' Survey]



As can be seen from the above chart, students preferred mode of learning are in this order, actual experiment, teacher teaching and video, as compared to their ability to do SDL and CoL. This indicated that there are still a group of students who have not moved away from teacher teaching and learning to learn by themselves even though they have the capacity to do so. It is important for the school to realize the capacity of the students through assigning work which increasingly move away from direct teaching so as to allow students with the capacity to become the independent learners who will be the ready workforce of tomorrow. This has to be a more school-wide practice so that it becomes a school culture and students come to expect this to be

the way to learn.

Chart 10.7 shows how the teachers' rate the students in the 3 classes in terms of their ability to self-manage, self-monitor and self-modify. As the teachers have no clear rubrics to meaningfully measure these qualities, with different teachers having different perceptions of what these could mean, the scoring by different teachers therefore differs. However, from perceptions the high ability group scores best in self-managing, self-monitoring and self-modifying compared to the other two classes that are classified as students with mid-abilities. In future, we have to have a rubrics to assess students in this area so as to be able to rate the students in this area meaningfully.

Chart 10.7: Teachers' Scoring on Students Learning Behaviours [Teachers' Survey]

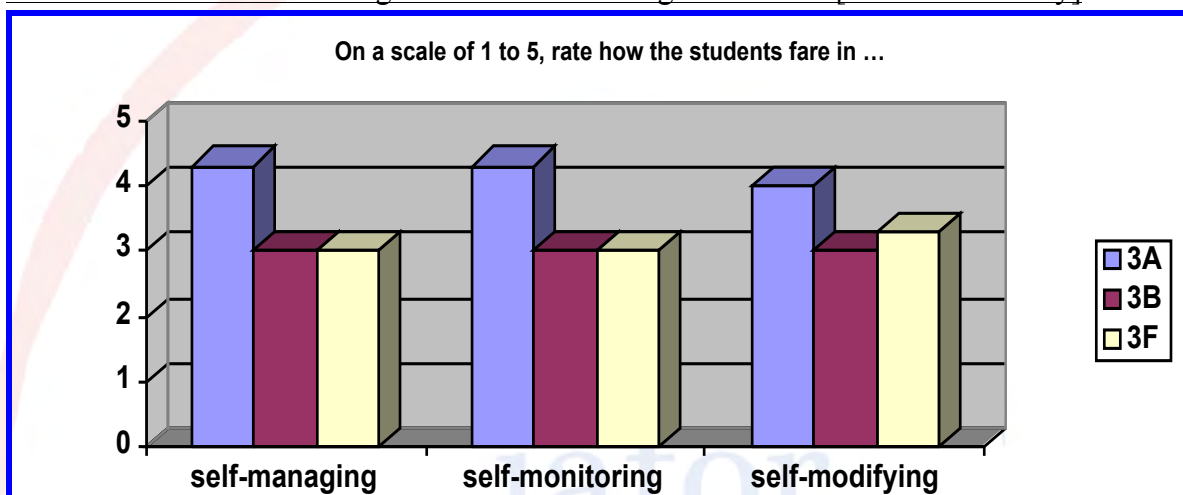


Chart 10.8: Pace of Lessons [Students' Survey]



About 40 % of the students felt the lessons were satisfactory with about another 41 % expressing that it was good. Here the answers could have been scaled so as to them less probability of picking the neutral answer or satisfactory when they are not too sure how they feel towards the lesson. To the students, satisfactory could mean that they are as the term suggests, satisfied with the lesson.

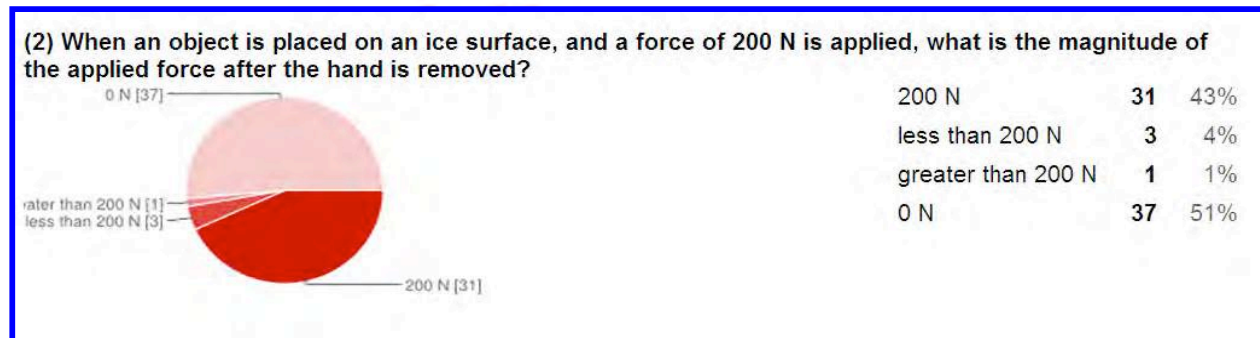
Charts 10.9: Overall rating of lesson [Students' Survey]



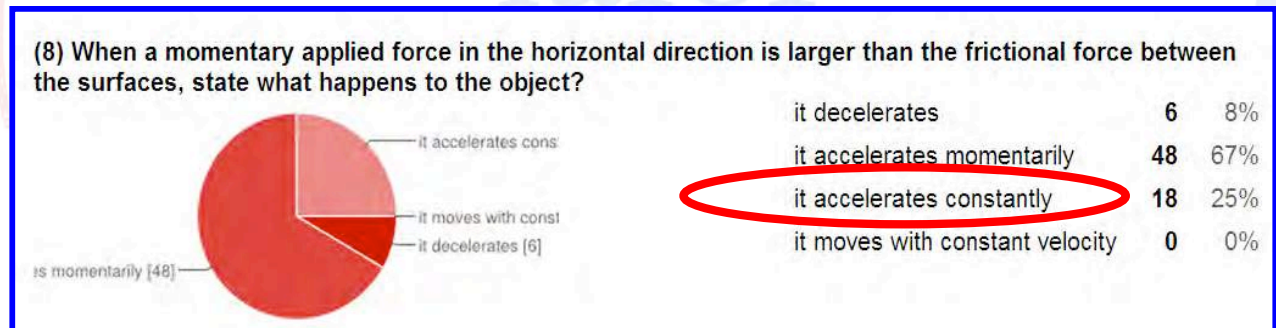
Overall, 79% of students found the pace of lessons suitably well-paced [Chart 10.8]. This series of ICT-based lessons also received positive feedback [Chart 10.9] from the students, though there are about 20% of the students who do not take to this method of learning. We do agree with the 18 % of the students that the lesson can certainly be improved.

## 11. Analysis of Quiz

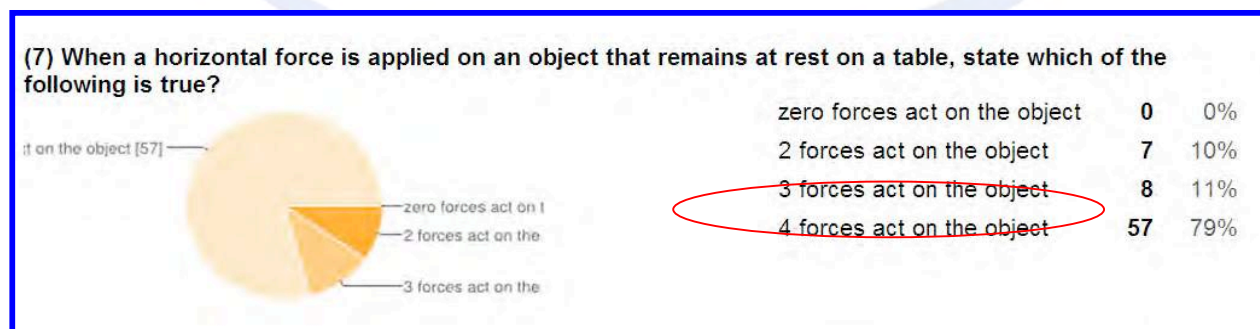
### Concepts and Misconceptions from Quiz



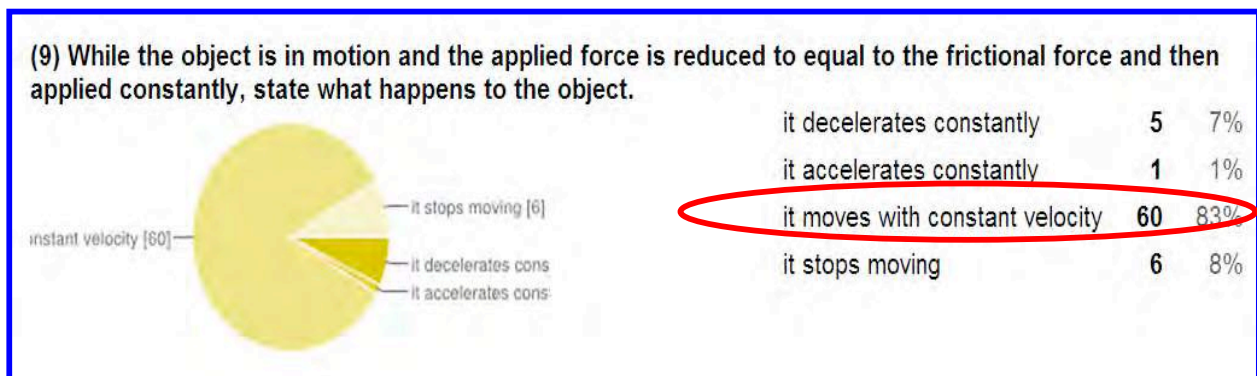
The answer to the above questions indicated that students have misconceptions that after the hand was removed, the applied force is of 200 N is still present. There were 43 % who had this misconception which also surfaced in the test that followed although the number with the same misconception had reduced. A small percentage still had the misconceptions that after the object was thrown it will continue to accelerate under the action of the momentary applied force.



This same misconception is reflected in question (8) where students indicated that the momentary applied force is able to accelerate the object constantly.



Question (7) indicates students demonstrating understanding of the concepts of object at rest may not mean no force acting on it. 79% understood that there could be 4 forces acting on it even though it is at rest.



Question (9) indicates students understanding of the concept that when forces are balanced an object in motion moves with constant velocity with a small number still having the misconception that it will stop moving and another small percentage of 5% having the misconception that it will decelerate.

## 12. Teachers' Post-Lesson Reflections

- (1) Time to be given for students to complete the three worksheets instead of one in class. This is because being able to see their partners face to face in a discussion promotes more exchange of ideas.
- (2) Teachers could also make the instructions on worksheet and questions clearer by getting other teachers teaching the same subjects to try out the questions and surface any questions/instructions that are unclear.
- (3) We can also try to assign pairing between the better students with the weaker students instead of leaving it open to student instructions.
- (4) The guided inquiry can include not just PHET simulation but also Youtube videos that demonstrate Newton's Laws of Motion and so that students learn with real life examples and are able to explain them on their own. That will take the learning to another level as they learn using multimedia.
- (5) The 20 multiple choice questions to be administered to a control group as well to check for the difference with the intervention measures using ICT and that taught by the traditional method.
- (6) The questions to gather both teachers and students feedback on Self-directed learning, ability to collaborate and opportunities for use of Critical Thinking Skills should not be in discrete steps of percentages of 20% if it is to more accurately measure and reflect the abilities and confidence of the students for SDL, CoL and CTS. Suggestion for the next project to be collecting data which allows easy analysis of data yet allows for a wider range of responses to accurately reflect the situation.
- (7) To gather qualitative data on student's response to engagement level, activities engaged in, ability to collaborate, self-directed and ability to engage in critical thinking, it is recommended that teachers craft a rubrics or checklists to observe this grade these abilities.

- (8) The same rubrics could be used for students to grade themselves so that both teachers and students taking part in the Research have the same understanding of what each of these terms collaborative, self-directed and critical thinking skills mean.
- (9) Answers like neutral or satisfactory are usually selected by students who choose to be non-committal and hinder us from getting accurate data and therefore some modifications may have to be done to the responses provided to avoid it.
- (10) When we asked students the level of the difficulty they encounter in deducing the concepts, clarification could be made as to the nature and type of difficulty they encounter.

### **13. Conclusion**

The use of ICT-enhanced lessons has proven to be engaging for most students. It provided students with the opportunity for collaborative learning (CoL), self-directed learning (SDL) and to use critical thinking skills (CTS) in problem solving. Using Teaching for Understanding framework to guide our crafting the inquiry-based and by applying technology has enabled us to see students collaborating, doing self-directed learning with use of critical thinking skills and thus preparing a generation of students who will be the workforce of the future.

A parting word is that ICT-enhanced TfU lessons will have to be done as a school so that it becomes a culture and then we can altogether build the workforce of tomorrow.

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<http://www.youtube.com/watch?v=uOSBC0SXVR4>

*The Effect of Computer Assisted Instruction in the Course of Educational Psychology  
for Students of Faculty of Engineer, Division of Industrial Education, Rajamangala  
University of Technology Lanna, Chiangmai Campus*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

The objective of this research was to find out the effect of studying of computer assisted instruction program in the course of Educational Psychology in 2 units: Intelligence quotient Emotional quotient and Aptitude and Learning and transfer of learning for students in the division of Industrial Education, Faculty of Engineer, University of Technology Lanna Chiangmai Campus who took class in Educational Psychology in semester 2/2011, and to compare the learning achievement of students between the use of computer assisted instruction program and usual instruction. The samples were selected by using a purposive sampling method. There were 35 students in the experimental group studied with computer assisted instruction program and 35 students in the control group studied with usual instruction. An achievement test was administered to both groups after completion of the experiment. The efficiency was analyzed by using KW-CAI formulas. The learning achievement between the two groups was compared by using a t-test independent statistic with SPSS program. Results of the study found that:

1. The efficiency of the computer assisted instruction program was 81.20 percent in which it was at a fair level.
2. The learning achievement of the experimental group was significantly higher than that of the control group at the level of .05.
3. The satisfaction of the computer assisted instruction program was good.

Key-Words: - computer assisted instruction/ educational psychology

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## Introduction

RMUTL aims to enhance students' professional development in language, science and technology. Instructors play an important role in creating teaching strategies according to their students' needs. Learning and teaching today is necessary to develop and apply advanced technologies used in conjunction with the teaching and learning in order to optimize the learner. Student-centered learning is an approach to education focusing on the needs of the students, rather than those of others involved in the educational process, such as teachers and administrators. It seeks to empower and enable students to take autonomy for their own learning, thus relying less and less on the teacher. A certain university sought to promote student-centred learning across the entire university by employing many methods such as analysis of good practice by award-winning teachers in all faculties to show that they made use of active forms of student learning, subsequent use the analysis to promote wider use of good practice, a compulsory teacher training course for new junior teachers, which encouraged student-centred learning etc. (Kember, 2009). CAI is one of several student-centered approach which used multimedia program to encourage students to learn and retain greater interest. It assists students to learn by themselves without restrictions of time or place.

**Objectives of the research** are as follow:

1. To study the result of using CAI in the course of educational psychology
2. To compare students' achievement between using CAI and normal classroom methods
3. To study the students' satisfaction towards CAI in the course of educational psychology

### Research hypothesis

This study seeks to find out:

1. The CAI is effective more than 80%
2. The difference in students' achievement between CAI and normal classroom is statistically significant.

### Benefits of the research

CAI brings with it several potential benefits as a teaching/learning medium. These include self-paced learning, self-directed learning, the exercising of various senses and the ability to represent content in a variety of media. With self-paced learning, learners can move as slowly or as quickly as they like through a program. If they want to repeat some task or review some material again, they can do so as many times as they choose. The program will not tire or complain about repetitions. Learners can skip over a topic if information is already known, making the learning process more efficient. With self-directed learning, learners can decide what they want to learn and in what order. Various studies (Entwistle, 1981; Schmeck 1988; Ford and Chen, 2001) have shown that when

learners can learn in a way that suits them, improvements in the effectiveness of the learning process normally ensue. However the benefits of this study are as follow:

1. To study the results from using CAI in the course of educational psychology in unit of Intelligence and Learning
2. To be a guideline in developing CAI in other subjects
3. Students have positive attitude towards self access learning.

## **Literature search**

What is 'Computer Assisted Instruction' (CAI)?

Since technology has been used to streamline many educational tasks. There are different types of educational computer use. The educational uses of computers that are considered to be computer-assisted instruction (CAI) or computer-based instruction (CBI) are those cases in which either instruction is presented through a computer program to a passive student, or the computer is the platform for an interactive and personalized learning environment. CAI can be used either in isolation, bearing the whole responsibility for conveying instruction to students, or face-to-face teaching methods. Lots of researches have shown that the combination of conventional and CAI instruction has been most effective in raising student achievement scores.

## **Types of CAI**

CAI falls into two basic types which are tutor or tool (Levy, 1997), although the term CAI often refers to computer tutors. In the tutor classification, the computer has the information to be learnt and controls the learning environment. A CAI tool enhances the teaching process, usually by focusing on one particular learning task and aiming to improve it. Within the tutor classification, there are four modes: drill and practice, tutorials, simulations and games (Gloor, 1990). Drill and practice is suited to the behaviourist model, with repeated practice on lower-level cognitive skills. Although often frowned upon, it can be useful in certain contexts. The tutorial mode is probably one of the most common ones within CAI. In this mode, the computer presents the information, guides the learner through the system, allows the learner to practice and then assesses the learner. This research was working in this mode.

## **The efficiency of media**

In order to find the efficiency of learning media, learners have to achieve the objectives at the minimum level from the pre-test, assignments or post-test. Generally, the benchmark comes from the average of assignments and testing which refer to  $E1$  and  $E2 = 90/90$ ,  $85/85$  or  $80/80$

For instance, Suraporn Gaikhan has developed a computer assisted instruction for website programming II class. The study revealed that the package was developed more effectively as  $84.03/83.56$ , which perform better than the criteria set  $80/80$ . The criteria of the effectiveness

of learning are assessed from performance before learning was 19.61 and efficient post learning was 83.56, so computer assisted instruction developed allows the students effectively increase learning 63.94, which met the criteria set is 60. The satisfaction of samples are an average 4.37 which is high satisfaction. Moreover, Duangnapa pitathanang has developed computer assisted instruction for computer instruction class. The result of the study showed that effectiveness of the lesson was at 84.33/86.92 higher than the criteria set at 80/80. The performance after learning is equal to 86.92, compare with performance before learning, which is equal to 84.33 show that the performance during the study is better.

### **Testing the effectiveness of CAI**

There is a research about teaching and learning using computer assisted instruction (CAI), which found that achievement and perform better than students taught by traditional instruction. Tests to evaluate the effectiveness of CAI usually follow the psychometric tradition. This involves using standardized proficiency tests to measure the effects of instructional programs or methods on student learning outcomes and comparing the results. There will be two groups of students. The group that use a CAI program was called experimental group another group was the control group which will be taught in the traditional classroom setting. Sometimes a pre-test is carried out whereby each group is examined on knowledge before partaking in the learning process. At the end of the instruction period, the two groups undertake a test to determine what has been learnt. This type of evaluation of the CAI process is the most common because it follows traditional methods and is easiest and least labour intensive to perform.

### **Related theories**

Connor et al. (1999) report that CAI should be based on educational theory, otherwise the learning is left to chance. Although there are no clearly defined boundaries between the various different educational psychologies, there are four basic groups. Behavioural psychology (Skinner, 1968) focuses only on objectively observable behaviours and discounts mental activities. The cognitive model (Merrill, 1991) holds the view that knowledge is constructed and is not simply a learned response. This model considers the active mental processing that occurs and the setting (individual, group and environment) when acquiring knowledge. The constructivist approach (Jonassen, 1991) considers the nature of knowledge, the mental activities of learners and how knowledge develops in learning. In this model, learners use their intuitions to link prior understanding and new knowledge, which can be acquired by new experiences and interaction with the physical world. The humanist psychology of Maslow (1954) and Rogers (1969) is complex and based on personality. It is founded on generally accepted principles of human nature (Merriam and Caffarella, 1991) and argues that learning occurs as a result of intrinsic motivation and reflection on personal experience. Thus, as more experience is gained with CAI and better technology becomes available, CAI applications based on more advanced educational psychologies have been developed.

## Research Methodology

The research methodology of this study are as follows:

1. Create the CAI in the course of Educational Psychology
2. Study the result of analyzation of the test group of student's performance using CAI
3. Analyze the test group of students' and their satisfactions' towards using the CAI method

## Steps for creating CAI

There are 6 steps for creating CAI in this research.

1. Analyzing the content from the topics of Intelligence quotient, Emotional quotient, Aptitude, Learning and transfer of learning. All contents should be divided in a series of short lessons. Each lesson consists of images, text labels, video clips and sound waves. We call these simplified objects as 'templates'
2. Setting the behavioral objectives of those topics.
3. Presenting to content experts
4. Writing the script or the story board. Hence the name implies; what goes in, what comes out and what point of time as stated 'CAI' is a form of interactivity which also means real time scripts for each and every object(s) coming in and out to interact with the user.
5. Studying the programs for creating CAI. Choosing the preferred program/utility for creating each 'object template' is also an important factor. Such as when working with high quality 'Images' (ie. JPG/JPEG) retouching them; we would use the practical software 'Adobe Photoshop', but if we were to aim for a lower quality or a rather small sized animated image such as a 'GIF' file (a type of pre-packed animation sequence images) we would rather use 'GIF animator studio' or the like, Choosing the right software for the job can save much time and effort.
6. Presenting multimedia production to the experts. For the final part, professional production experts such as animation studios can help render both, in and out the necessary parts of the final script making the final impact to the user more practical.

## Software used

The researcher used many types of software in order to create CAI:

1. Macromedia Author ware (the main software)
2. Macromedia Dreamweaver
3. Macromedia Flash
4. and Adobe Photoshop

## Research instruments

The instruments used in this study are as follow:

1. Computer assisted instruction in the course of educational psychology
2. CAI's experts evaluation form
3. Achievement tests
4. Satisfaction questionnaires

Researchers create questionnaires for content experts, questionnaire for multimedia production experts, and questionnaire for students' satisfaction. Each questionnaire consisted of 23 statements in 4 sections : 5 items in content and use, 4 items in figure and semantics, 5 items in font and color, 4 items in testing and 5 items in management lessons. Each section presented in 5 point Likert scale : excellent, good, average, fair, and poor.

## Data analysis and statistics used

In order to find out the effectiveness of the CAI, researcher applied these statistics.

1. Determination of compliance between the test and the objectives using these formula

$$IOC = \frac{\sum R}{N}$$

$IOC$  = Item objective congruence index  
 $\sum R$  = Total of experts' opinions  
 $N$  = number of experts

Formula for finding level of difficulty

$$p = \frac{R_H + R_L}{N_H + N_L}$$

$p$  = the difficulty of the selected items  
 $R_H$  = number of students selected the high scores group  
 $R_L$  = number of students selected the low scores group  
 $N_H$  = number of students in the high scores group  
 $N_L$  = number of students in the low scores group

Formula for finding level of discrimination Power

$$r = \frac{R_H - R_L}{N_H} : (N_H = N_L)$$

$r$  = discrimination power of the items  
 $R_H$  = The number of students who have correct answers in the high scores group.  
 $R_L$  = The number of students who have correct answers in the low scores group.  
 $N_H$  = Total of the students in high scores group

$N_L$  = Total of the students in low scores group

Formula for finding level of reliability by Kuder and Richardson

$$KR-20 = \frac{K}{K-1} \left[ 1 - \frac{\sum pq}{\sigma^2} \right]$$

KR-20 = Reliability of the test

K = Number of items in the high score group.

P = The ratio of the students who did correct answers in each item

q = The ratio of the students who did incorrect answers in each item

item

$\sigma^2$  = Variance of the scores

$$= \frac{N \sum X^2 - (\sum X)^2}{N^2}$$

X = Scores of each students

N = Number of students who take the test

Formula for finding the mean of the experts' opinions

$$\text{สูตร} \quad \bar{X} = \frac{\sum X}{n}$$

$\bar{X}$  = Mean of the sample group

$\sum X$  = Sum of the score in all group

X = individual score

## 2. Determining the effectiveness of CAI

The researcher used KW-CAI : Qualitative analysis of the efficiency of the lesson for finding the effectiveness of CAI

$\bar{E}_b$  = Average of the students who do right answers on the assignments

$\bar{E}_a$  = Average of the students who do right answers on the tests

$$\frac{\sum \left( \frac{x}{A} \right)}{n} = F$$

$$\bar{E}_b = \sum_{i=1}^n \left( \frac{x}{B} \right)_i$$

$$KW-CAI = \frac{\bar{E}_a + \bar{E}_b}{2} \times 100$$

Evaluation as a percentage follows :

95-100 = Excellent

90-94 = Good

80-89 = Fair

Below 80 = Poor

## Sample group

The sample groups are third year students from industrial engineering and second year students from electronics engineering who enrolled in Educational Psychology. Respondents were selected by purposive sampling

## Research Results

### 1. The result from CAI's expert evaluation

Topic	n	$\bar{X}$	S.D.	Meaning
Content	2	4.78	0.10	Excellent
Multimedia production Technique	3	4.75	0.41	Excellent
<b>Total</b>	<b>5</b>	<b>4.76</b>	<b>0.25</b>	Excellent

### 2. The result of students' achievement

Achievement test	n	Total score	Means	Effective
Assignments (40 cores)	35	18.35	0.53	81.20
Tests (60 scores)	35	29.00	0.83	

### 3. The result of students' achievement analysis

Experimental group	n	$\bar{X}$	S.D.	t
CAI classroom	35	51.08	4.728	3.364*
Normal classroom	35	45.31	4.694	

## Conclusions

Conclusions from The effect of computer assisted instruction in the course of educational psychology for students of faculty of engineer, the division of industrial education, Rajamangala University of Technology Lanna, Chiang Mai Campus are as follows: Learner-centered approach did change and develop the students' behavior. The CAI has been effective at 81.20% which is higher than 80% the research hypothesis and the achievement test compared between CAI classroom and normal classroom is statistically significant at .05

## Suggestions

The suggestions from this study are: CAI is a teaching instrument which should be designed cooperatively by the instructors, the curriculum developers and the technicians and CAI in other subjects should be developed and evaluated for the effectiveness, and should be easily accessed by students.

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*Pedagogical Approach for an Integrated E-Learning*

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Official Conference Proceedings 2012

Abstracts

Teaching human anatomy and pathophysiology involves memorizing names, visualizing pictures and also understanding difficult Latin and Greek terminology. This paper provides an insight in the use of the Computer Based Teaching (CBT) as a pedagogical approach to create e-learning material which can be integrated and used across different courses for better learning outcomes. This study focuses on three CBTs that were developed in-house by the biological sciences department, namely Bone Box, Coronary Artery Disease (CAD) and Histobox. The survey result on students learning using CBTs showed significant improvements in their learning behaviour and test grades. The students preferred choice of learning is e-Learning with Histobox compared with traditional lecture and practical using microscopy,  $Z=13.107$ ,  $p<0.001$ . Our student survey revealed that 98% of the students agreed that the CBTs helped them to understand and learn the subjects better. The survey results also revealed that 94% of the students agreed that the CBTs can help to replace traditional teaching by practical sessions. About 89% of the students also agreed that the CBTs helped them to improve in their assessment grades. Thus the student learning outcome of better knowledge and test grades were achieved. The case-scenarios and assessment quizzes used in the CBT improved the higher order critical thinking. One interesting finding of the survey showed that student preferred interactive quizzes and assessment tools more than game based learning activity. These CBTs are used seamlessly as an integrated e-Learning tool to teach across the seven different courses for Health Sciences and Engineering students.

**Keywords:** e-Learning, Biological Sciences, Instructional Design, Pedagogy, Computer Based Teaching (CBT), Bone Box, Skeleton, Heart disease, Histology, Anatomy

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## **Introduction**

E-Learning includes the use of electronic devices such as computer for a network enabled transfer of skills and knowledge to the learner. Pedagogy is the art and science of education. There are numerous pedagogical approaches that can be used for e-Learning. Such as use of quizzes, interdisciplinary learning, teaching through games, problem based learning, team teaching, case study. A recent study involving 227 courses in 31 educational institutes in Ireland for mental health professionals showed benefits of interprofessional pedagogical approach for health science education (McCann et al, 2012).

Generally, students in vocational schools are expected to spend much more time and effort in learning a variety of technological skills as compared to those in academic universities (Shen et al, 2008). If one of the primary goals of e-Learning is to promote active involvement, then the teachers and instructional designers need to better understand the design of learning tasks in stimulating and sustaining learner engagement (Hedberg, 2003). The combination of problem based learning and self-regulated learning can improve student involvement in the vocational course from beginning to end (Lee et al, 2008).

Integration of e-Learning technologies in an interprofessional health science course enhances student's perception of their learning without compromising pedagogy (Mike et al, 2008). Many health sciences information technology initiatives were designed to use asynchronous technology to replace face-to-face classroom teaching in health disciplines like medicine, nursing, occupational therapy, pathology and dentistry (Ricciardone et al, 2003; Spinello & Fischbach 2004; Mash et al, 2005; Upton, 2006). Research provided evidence of broad acceptance of the existing model with practioners, but indicated that teachers would take this tool and remodel in for their own contexts of learning to make it meaningful, relevant and useful to their level of skill and knowledge (Freitas et al, 2007).

In this paper, we describe how different instructional designs were used to develop three biological science CBTs for an integrated e-learning. The pedagogical instructional approach is also varied to suit the content and the expected student learning outcome. Our current model of CBT is based on customized content to cater to the needs of our multidisciplinary teaching of biological sciences topics across different courses and specialties. We believe that this approach of e-learning in health sciences education will increase student involvement and motivation to learn with their own pace when compared with face-to-face learning. A survey on the student learning outcome and preference of content delivery will be done. This will clarify if our current practice of using custom made CBTs will have a positive implication for our integrated e-Learning approach in the School of Health Sciences, Nanyang Polytechnic.

## **Methodology (Pedagogy)**

The School of Health Sciences ventured into e-learning by continually expanding its e-Learning curriculum by developing new multimedia packages. Currently there are more than 40 computer based e-Learning packages providing learning experiences that lead to students' comprehension and mastery of new skills and knowledge in diverse areas. The use of integrated teaching is a new pedagogic approach used to maximise the effectiveness of health sciences teaching and learning, especially in the field of nursing and allied health topics which is highly integrated and multi-disciplinary in nature. Here, we describe three CBTs with different instructional designs and pedagogical approach.

*HistoBox*: Histology is studied under Anatomy as “Microscopic Anatomy”. The HistoBox is designed as an integrated e-Learning platform for students to learn basic histology. It is customized for the learning needs of students in the School of Health Sciences (SHS) and School of Engineering (SEG), Nanyang Polytechnic (NYP). Users should begin learning with “*Learn*” to read theory then “*Practice*” with slides followed by assessment of their learning through the interactive “*Play*” and finally use “*Think*” to apply their learning to some clinical conditions. The lecture, tutorial, practice and assessment of various tissues are integrated into a single package using e-learning as an enabling technology.

*BoneBox*: Traditionally skeletal system and bones are the first topic to be taught for all SHS and also SEG modules. Students had difficulty coping with the subject content, while our lecturers found it challenging to teach. They had difficulty learning bones and needed several rounds of tutorial and practical sessions. With the limited bone specimens and increased student intake, the students were thronging the bioscience resource center to learn bones. They had to scramble to get hold of the bones to revise for the practical test. Through a seamless collaboration between the subject expert and multimedia developers, we produced a highly integrated interactive e-learning package for studying bones. The design and development of the bone box is based on the *famous dictum of Confucius*,

**“Tell me**, and I will forget.

**Show me**, and I may remember.

**Involve me**, and I will understand.”

*Coronary Artery Disease (CAD)*: This CBT provides a basic understanding of the heart and its common disorder “myocardial infarction”. Myocardial infarction is regarded as a single top killer disease in Singapore and other developed countries. The design and development is based on the “*step by step*” approach in learning and understanding the topics from basic “Anatomy of heart” to ultimately managing a patient with “myocardial infarction”. It will help in understanding the topics at following levels.

- 1: Knowledge
- 2: Comprehension
- 3: Application (quiz)
- 4: Critical thinking and above (Case scenario)

## Results

All the three CBTs were uploaded into the NYP “Course Management System” (CMS) as a digital media repository (DMR). They are then tagged into any individual modules offered by the biological sciences department to the SHS and SEG course modules. A detailed survey was carried out to assess the effectiveness of learning and assessment outcomes. A Wilcoxon test (Table 1) was conducted to evaluate students’ preference for the Histobox or the microscope method in terms of ease of operation. The results indicated a significant difference ‘ $Z=12.99$ ,  $p<0.001$ . The students also found the content for the HistoBox to be more interesting than for the microscopy session,  $Z=13.23$ ,  $p<0.001$ . The students preferred choice of learning is HistoBox compared with microscopy,  $Z=13.107$ ,  $p<0.001$ . The figure 1 shows the screen capture of the four segments of HistoBox. The “Learn” segment of the CBT gives information and figures similar to the lecture concept. The “Practice” segment gives information similar to a practical lab set up. The case studies

in the “Think” segment in the CBT help to bring about higher order critical thinking and apply their knowledge learned in a clinical setting. The “Play” segment is mainly used as an assessment tool to learn in a fun way, like answering MCQs in an SMS format using an iPhone interface. The HistoBox is an integrated package to teach histology for students across various modules, courses and schools in NYP. The survey results indicate that the students preferred it over the actual face-to-face practical lessons. They can zoom in and zoom out their slides as viewed using microscope.



**Table 1. Wilcoxon Signed Ranks Test for HistoBox (E-histo) survey (n=242)**

		Ranks			
		N	Mean Rank	Sum of Ranks	
Ease of use for E-histo - Ease of use for microscopy	Negative Ranks	1 <sup>a</sup>	33.00	33.00	a. Ease of use for E-histo < Ease of use for microscopy
	Positive Ranks	218 <sup>b</sup>	110.35	24057.00	b. Ease of use for E-histo > Ease of use for microscopy
	Ties	23 <sup>c</sup>			c. Ease of use for E-histo = Ease of use for microscopy
	Total	242			d. Content for E-histo < Content for microscopy
Content for E-histo - Content for microscopy	Negative Ranks	1 <sup>d</sup>	24.50	24.50	e. Content for E-histo > Content for microscopy
	Positive Ranks	225 <sup>e</sup>	113.90	25626.50	f. Content for E-histo = Content for microscopy
	Ties	16 <sup>f</sup>			g. E-histo as the choice for learning < Microscopy as the choice for learning
	Total	242			h. E-histo as the choice for learning > Microscopy as the choice for learning
E-histo as the choice for learning - Microscopy as the choice for learning	Negative Ranks	4 <sup>g</sup>	24.50	98.00	i. E-histo as the choice for learning = Microscopy as the choice for learning
	Positive Ranks	223 <sup>h</sup>	115.61	25780.00	
	Ties	15 <sup>i</sup>			
	Total	242			

**Test Statistics<sup>b</sup>**

	Ease of use for E-histo - Ease of use for microscopy	Content for E-histo - Content for microscopy	E-histo as the choice for learning - Microscopy as the choice for learning
Z	-12.988 <sup>a</sup>	-13.233 <sup>a</sup>	-13.107 <sup>a</sup>
Asymp. Sig. (2-tailed)	.000	.000	.000

a. Based on negative ranks.

b. Wilcoxon Signed Ranks Test

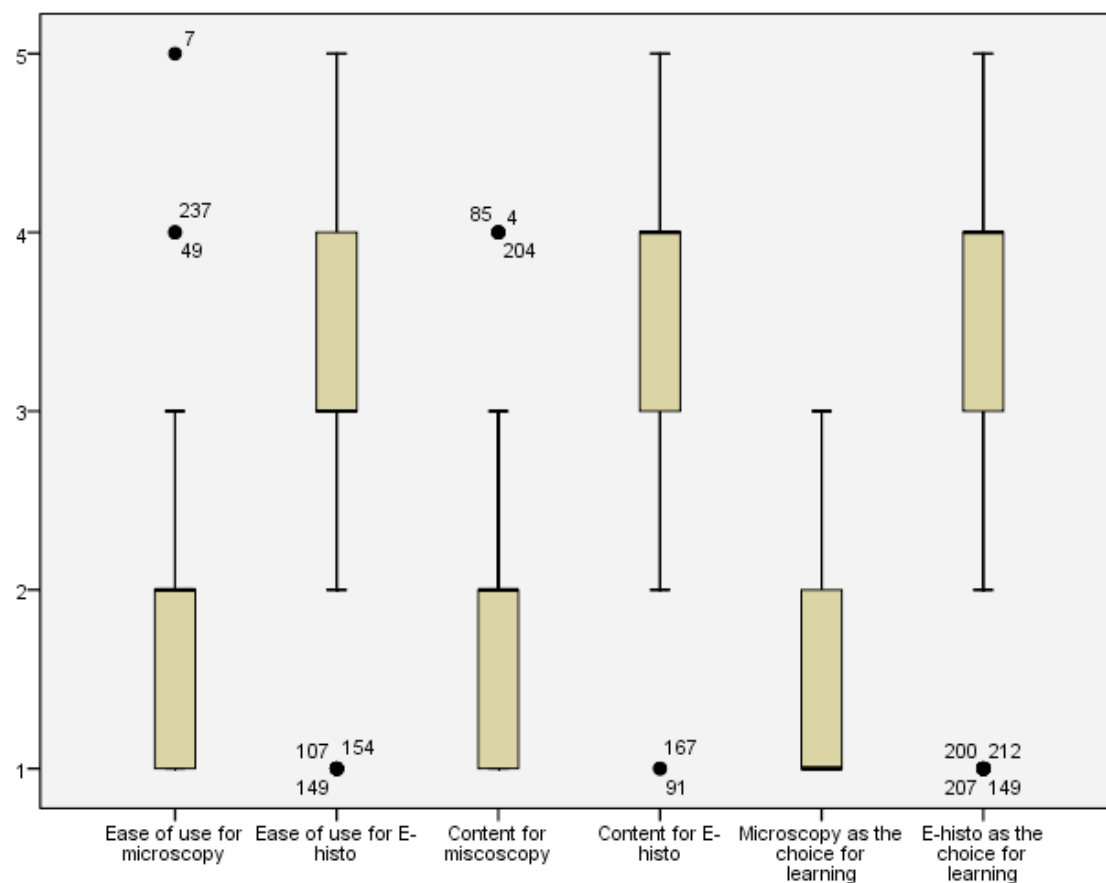



Figure 1. Screen shots of HistoBox CBT




# NYP e-Bone Box



**Pelvic girdle**

The pelvic girdle consists of a pair of hipbones.



**Show & Tell**


**Cranium**

The skull consists of 22 bones. It is formed by two groups of bones.

- A. Cranium is formed by 8 bones.
- B. Face is formed by 14 bones.

The cranium consists of 8 bones:

- 1 frontal bone
- 2 parietal bones
- 2 temporal bones
- 1 occipital bone
- 1 sphenoid bone
- and 1 ethmoid bone



**Practice**

1. Skull  
2. Bones  
3. Build a skeleton  
4. Identify the bone

**The design and development of the "NYP e-Bone Box" is based on the famous dictum of Confucius:**


**Tell me, and I will forget.**

**Show me, and I may remember.**

**Practice, and I will understand.**

**Student learning is active and integrated.**

**The Bone Box is also integrated to teach across various modules, courses and schools.**





**Table 2. Summary of sample survey questions for BoneBox**

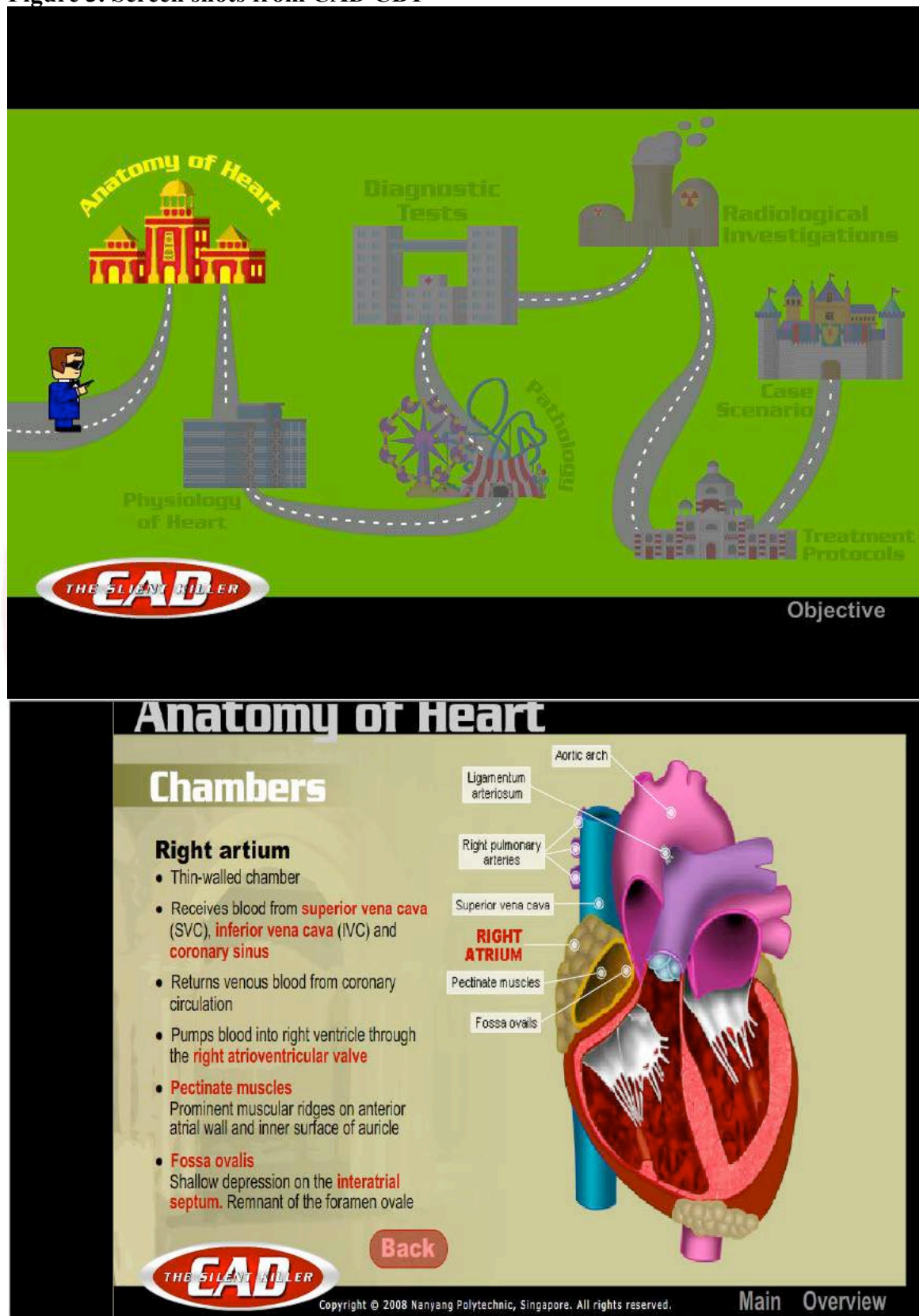
Survey Questions for BoneBox		% options selected (n=100)			
		Strongly disagree	Disagree	Agree	Strongly Agree
Q1	Learning the new terminology on bones is difficulty.	11	27	55	6
Q2	Learning bones without practical is difficult.	6	3	23	68
Q3	Bones are better learned with pictures and models.	5	2	19	74
Q4	The current external web sites on bones are either simple or complex with too many details.	3	45	48	3
Q5	<b>The NYP bone box is designed to our learning needs.</b>	<b>42</b>	<b>53</b>	<b>0</b>	<b>5</b>
Q6	<b>The design of NYP bone box is simple and interactive.</b>	<b>3</b>	<b>2</b>	<b>60</b>	<b>35</b>
Q7	The NYP bone box helped me to understand and learn the bones better.	5	2	74	19
Q8	The NYP bone box can be used as an e-Learning tool to enhance our practical lesson on bones.	2	3	56	39
Q9	The NYP bone box can be used to replace our practical on bones.	43	51	5	2
Q10	<b>The NYP bone box has helped me score better grade for my practical test.</b>	<b>2</b>	<b>10</b>	<b>68</b>	<b>21</b>
Q11	<b>The feature that I liked most in the NYP bone box is/are (You may select more than one options)</b>	<b>66</b>	<b>66</b>	<b>79</b>	<b>60</b>
		<b>(Picture)</b>	<b>(Text)</b>	<b>(Quiz)</b>	<b>(Game)</b>
Q12	I enjoyed doing the skeleton building game and it helped in my understanding on the orientation of bones.	3	2	76	19
Q13	My overall rating on the interactive features in the NYP bone box is	0	2	62	36
Q14	<b>My overall rating of the "NYP bone box" computer based learning aid pedagogy is</b>	<b>0</b>	<b>2</b>	<b>68</b>	<b>31</b>
		<b>(Poor)</b>	<b>(Satisfactory)</b>	<b>(Good)</b>	<b>(Excellent)</b>

The BoneBox is user friendly and interactive. It also injected an element of fun by including a skeleton building game. The "BoneBox" was developed as a "3-in-1" educational tool that can be used for: (i) **e-Learning** (including e-Learning reusable objects), (ii) **m-Learning** (the file size is small and it can be loaded into mobile devices), (iii) **i-Learning** (integrated to teach multiple modules across different courses and schools). The "e-Bone Box" is an effective "borderless educational package" and can be used for over 10 modules in various courses and schools (SHS, SEG and SCL). The contents were pitched to student's needs. Students can learn and revise at their own pace and convenience. The practice quiz and other interactive tools can translate to better understanding of the subject content and better test grade for the practical component of their individual course module.

The coronary artery disease CBT is designed with the student acting as an agent trying to explore "step by step" the different learning segments, starting from basic anatomy of the heart, followed by pathophysiology, diagnostic lab tests (including radiology for our radiography students), followed by treatment protocols and nursing management of a myocardial infarction patients. The final segment is on case scenarios where the students are given different patients scenarios and area asked to do the nursing and physiotherapy management for these patients. If students fail to understand the cases and answer the quizzes wrong they go back to the basic topics and redo the learning and come back again to redo the final critical thinking segment. This enables the student to

integrate different concepts learnt and understand interprofessional care management protocols a doctor, nurse, radiology and physiotherapist.

**Figure 3. Screen shots from CAD CBT**



### **Some descriptive feedback from students:**

“Great effort and creativity. Please keep up the effort and good work.”

“Even though I did not go through all the elements in the bone box, I find it really useful. It is a fun way of learning! I had a good laugh building the skeleton and watching it collapse before me! It is a good complement to the practical lab, practical test. More practice definitely helps us learn better. Thank you so much for the effort!”

“It is hard to grasp so many bone terminologies within such a short period of time, but with the help of the NYP bone box and also our lecturer, Dr Ponraj, it definitely makes my learning easier.”

“It is really fun and enjoyable using the NYP bone box.” “I like the skeleton game! So cutie!”

“Learning histology became more interesting and fun with the help of e-learning materials, specifically the NYP HistoBox.”

“Retain learning bones with practical lab. It enhances my understanding better than the computer-based learning. The "NYP bone box" can be mind-boggling one. I see it as another useful tool for topic (theory) learning when practical lab isn't available.”

“Very entertaining experience for learning coronary artery disease using CAD.”

### **Discussion**

Previous studies have highlighted the importance of using technologies to help in student learning (Connolly et al, 2007; Liu & Tsai 2008). Computer Based Teaching is synonymous to e-Learning in the School of Health Sciences, Nanyang Polytechnic. The CBT are mainly used for teaching biological sciences and nursing skills and allow greater flexibility to learn and to maintain their own pace. The CBT pedagogy is one of the effective approaches to deliver up to 30% of e-Learning in our student curriculum where face-to-face class time is reduced but not eliminated. It complemented and increased our student confidence to reach out to real world clinical situation.

The CAD CBT in particular is an excellent tool for an integrated e-learning across various allied health course students and nursing students and enables them to understand inter-professional team work. The CBTs help to create better understanding of the contents, improve team work and to understand the roles of doctors, nurses, radiographers, physiotherapist and biomedical engineers in integrating different tasks of various health care professionals. One of the unexpected out-come of our survey results is that students value the text content and quizzes over games. This is a clear indication that our student learning appetite is focused on assessment as the key element of learning. Although game based pedagogy can be a part of e-Learning, it should not be the main focus e-Learning CBTs. The current study shows CBTs are our student's preferred choice of e-Learning pedagogy than the third party websites and soft wares.

The various segments of our CBTs can be used as reusable learning object where small chunks of learning material are stored digitally and reused or can be referenced for a new module. For example the myocardial infarction and radiological investigation part of the CBT can be used in Radiological pathology module. This concept was promoted by Hodgins (2005) using a lego metaphor. A new CBT can thus be assembled just like a child can combine lego blocks to create a

new object. These Learning objects (LOs) offer a quicker and more effective means of creating a new course material to achieve a new learning outcome. The biological sciences team also used this strategy to develop a new CBT on “Basic Medical Terminology” using the multimedia and learning objects of our existing CBTs.

Recent study showed that the new generation of e-Learners is more demanding and the early enthusiasm has waned and current approach needs a more humane touch (Harden et al 2011). It can be likened to having a tutor constantly available for the student as they work through the CBT, thus a need for a “personal learning assistant”. A commentary or a personal teaching assistant can be used when a learning object is complex, as with some anatomical diagrams or body radiology image tracings. This commentary can be linked to the LOs, like a story as told by the teacher or an animated character. This can complement the student learning and make it as efficient and effective as possible and to contextualize the LOs in the local setting (Harden et al, 2011). Finally, the future direction of our CBTs should focus on developing inbuilt LOs with a humane touch and emotional elements. Such an addition of emotional elements will help learner to have a more personal learning experience as being taught by a private tutor at their own pace and time. A recent unpublished survey on all our CBTs and the student’s preference of mobile educational apps for e-Learning will also be presented at the conference.

## **Conclusion**

The CBT based e-Learning pedagogy has achieved our student learning outcomes as evidenced by the improvement in our students assessment grades. Our studies highlighted the importance of using an assessment-based approach to the instruction design, so that the learners’ outcomes are one of the key rationales for the pedagogical approach, rather than the provision of content. The case-scenarios and other assessment components in our CBTs have improved our student critical thinking skills. The study concludes that the bioscience and health science content is best learned by using customized CBTs to suit our local student needs.

## **Acknowledgements**

The author is grateful to the Directors, School of Health Sciences (AH & N) for the support to develop the CBTs and to conduct the survey. He would like to thank the multimedia technologists Ms Grace Pheang and Ms Melissa Tan for their technical support in the development of these CBTs. The author is grateful to the staff of School of Health Sciences for embarking and promoting the use of CBTs for e-Learning.

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*Techno-humanistic-Based Character Education  
(A Series of Perspectives and Education Policies for Meeting Global Challenges)*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

**Abstract:**

Mastering and developing science and technology that are growing from time to time bring out positive effects on human prosperity, such as the less time and space needed for doing the same activity and more practical techniques used to accomplish a complex task. Beside the many such positive effects, there is a concern about the negative effects of the development of science and technology (which if cannot be brought under control) will be able to destroy this life. Dantes (2009) developed a perspective on the integration of character values into the development of science and technology applied in education called techno-humanistic-based character education.

The above concept was followed up with a study by Dantes (2010) with the focus: techno-humanistic-based character education at formal schools in Indonesia. The study found out that the character aspects (humanistic values) that have to be developed together with the development of science and technology consist of moral awareness, knowledge of moral values, ability to give a moral view and consideration, recognition/ understanding of oneself, work (a perspective on work), conscience, self esteem, empathy, love for virtues, self control, humbleness, compassion, honesty, discipline, responsibility, friendship, courage, perseverance, and decision making.

As a consequence, science and technology development has to be based on the character value aspects that are consonant with humanity, since life in the future will be hard and competitive. References on the change in time has been done by various scholars such as Rossabeth Moss Kanter (1994), Niesbet (1997), Rowan Gibson (1997), Peter Senge (2004), etc who gave a description that in the future there will be a need for education which, in addition to the mastery of science and high technology it should be based on the understanding and mastery of noble character values.

Then, based on techno-humanistic-based character education and the results of the need assessment above, Dantes (2012) develops an initial prototype of techno-humanistic-based character education at formal schools in Indonesia that consists three dimensions, namely (1) mastery of science and technology, (2) mastery of moral values (knowledge, feelings and moral behavior) as well as (3) application of wisdom. The science and technology dimension, moral values (knowledge, feelings and moral behavior) can be transformed through the pillars of learning how to know, learning to do, and learning to be, while the values of wisdom can be transformed through learning to live together and learning to live sustainably. The transformation of the first and second dimensions are at the stage of forming and developing the character values until they are mastered by the student (that is concerned with the aspects found by Dantes (2010), while the third dimension is the implementation of the values themselves in life.

The next stage in the study is to find the techno-humanistic-based character education process to create a school as a caring community.

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Keywords: techno-humanistic education

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## 1.Introduction

Education is a process of humanization of humans, in terms of the optimizing of the development of human dignity ( Dantes, 2010). It implies that basically, education has to occur within the human community, and it is in this process that the human cultural transformation occurs from one generation to the next.

The development of the human community is more and more advanced with the finding of science and technology by human-beings in order to overcome problems that they face in addition to the development for the sake of the development of science and technology themselves. In that context, science has three dimensions, namely, ontology, epistemology, and axiology. The ontology of science deals with the object of science itself, which in its development is based on scientific procedure that adopts an open , objective and honest verification in the science epistemological framework, that is expected to offer prosperity to human-beings as the axiological dimension. That is the basis that the development of science on human values ( Jujun Suryasumantri, 2000).

The more advanced the human community, the more differentiated and specialized the needs and demands of life in such a way that makes it possible to create a life that tends to be individualistic that is based on material needs that gradually but surely will cause the life of the community that tends to stress extreme egoism and cronyism.

The community life in today's world is becoming more obsessed with the material needs which are becoming more urgent so that the development of science and technology is also becoming more oriented toward the fulfillment of the material aspects of life and tends to lead to the dwindling of human values as the basis of the development. The domination of material needs in the communities in various parts of the world brings out various non-normative behaviors such as violence, human right violation, murder, etc. such events are happening in Europe, Arab world, United States, and symptomatically in Indonesia. The form of such behaviors as ethnic , racial, religious, and group conflicts are seen in Sambas conflict (2000), that was an interethnic fight between Madura and Dayak ethnic groups. Sampang Madura conflict (2012) or inter-religion sect conflict, Lampung conflict (2012) or an attack of Balinese, Jakarta conflict (2012) or a fight between SMAN 6 and SMAN 70 students, and also the fight between the students of Universitas Negeri Makasar or between the students of the Art Faculty and those of the Faculty of Engineering (2012) and many other events , all of which with casualties. These events are suspected to have been caused by the tendency to giving more priority to the development of science and technology to meet the material needs by neglecting the transformation of human values of the young generation both in the formal and the non-formal education.

In relation to this, Dantes (2010) describes that human activities in mastering science and technology becomes more intensive, especially in the formal education. Almost all activities in

education ( schooling) are oriented toward the development of science and technology alone that all activities are dominated by the reasoning activity only. This occurs very fast and in uniform that with the same speed we feel the dryness of life based on the basic value of togetherness. This condition is strengthened more intensively by the symptoms of global life that every person and nation have to be ready all the time for living a borderless life. Globalization is a logical implication of the advance of science and technology. Related to this, to live in a global community, every nation is required to be ready all the time for competitions to be able to exist in the dynamic life constellation. Information and communication revolution as the direct effect of the advance of science and technology has eliminated regional and territorial borders so that for a particular community this condition has to be addressed quickly and comprehensively in order it does not lose its characteristics ( Schement, 2002; Jannes, 2001). For education, this condition is of course a reality that has to be faced, especially when there is the tendency in education to focus on the mastery of science and technology alone.

In the real life which has become more complex and more globalized, there are more evidence that shows the shallow understanding, the mastery and application of life values in social interactions. The mastery of science and technology which is not based on human values, is thus used as a weapon to master and violate other human dignities. The very low mastery of the human values causes the various human conflicts. Thus, our education should not only be based on the mastery of science and education but should be based on also on human values. The combination of the two dimensions has to be orchestrated in an integrative way in the education of our generation. It is in this relation that education must be able to meet the challenges. Education should provide opportunities to every student to obtain knowledge, skill, and values as his or her preparation to enter global competitions that have become tougher and tougher. Beside the provision of the most ample opportunities, one thing that is also important is offering meaningful learning, since only by meaningful learning the student can be provided with life-skill, while meaningless learning will only become a burden in life.

## **II. Theoretical Background**

### **2.1 Education and Nation Character Building**

Since 1920s Indonesia's educator, Ki Hajar Dewantara has launched an idea that education is basically humanizing humans. To achieve this aim, the condition that is needed in education is the condition that is based on the principle of family relationship, kindheartedness, empathy, love, and respect for every member, *there is no education without love*. Thus, education should help the student to develop free personality, physical health, mental health, intelligence and to make him or her a useful member of the community. A free human being is a person with the ability to develop wholly and harmoniously in all aspects of his or her humanity and the ability to appreciate and respect the humanity of everybody; to achieve this aim, Indonesia with its multiculturalism should adopt the method of education with *among* system, since the

application of this method is based on the principles of *asah*, *asih* and *asuh*. While, the principle in administering the education needs to be based on “*Ing ngarso sung tulodho, Ing madyo mangun karso. Tut wuri handayani.*”

Indonesia as the society with most of whose members belong to the traditional typology. To be able to live harmoniously and happily in the new global environment the society needs a new traditional norm, namely, new values that are rooted in traditional (original/native) values and in the process of development and change, the values can change according to dynamic integrated norm which implies that the change of values is always originated and integrated with the original values that may take the form of the nation's noble values and the values that are originated from local genius.

When we examine some references in relation to the issue above, it is clear that there is a picture of very fast changes of times. Nisbet (1997) offered *ten global megatrends* which will occur in the future and which are known as global millennium megatrends. While Rowan Gibson (1997) stated three things in relation to life in the future, namely, *first, the road stops here*, which, essentially, states that the future will be very different from the past, and that is why there is a need to be able to understand the future well. *Second, new time calls for new organizations*, which, basically, states that with different challenges there is a need a new form of organizations/institutions with the characteristics of high efficiency and the speed of motions. *Third, where do we go next*, which, basically, says that with various changes that will happen, every organization, institution, needs to formulate the right direction of the desired destination. Peter Senge (1994) also stated that in the future there would be changes in the detail complexity to the dynamic complexity that would make an interpolation difficult. The changes that will occur will occur suddenly and unpredictably. While Rossabeth Moss Kanter (1994) stated that the future would be dominated by cosmopolitan values and ideas and every actor in every field, including education is required to have 4Cs, namely, **Concept, Competence, Connection and Confidence**. Thus, in the future there is a need for education that, in addition to the mastery of science and high technology there should be a basis for understanding and mastery of values and strong morality, which the writer calls ***techno-humanistic education***.

Material prosperity that has been achieved by the human being in life is the result of reasoning in science and technology with a direct effect on the prosperity of life. Various findings in science and technology have been obtained, such as the ability to shorten time, various kinds of diseases can be cured, Information Technology grows very fast, etc. have caused the quality of life is getting higher and higher. The facilities that have been obtained will have no meaning if they are not based on values, ethics and strong morality of the users. This can become a boomerang for the human beings themselves. The findings in science and technology can destroy them or even the . Thus there is a need for a basis of a deep understanding of human values. The touch of education is must, since education is *a process of humanizing humans*.

Thus, education is a means of transformation of culture, and education itself is *intangible social culture*. It is also and at the same time supports the culture system, so that advances in the civilization of a society can be measured the level of the quality of its educational institutions. In relation to this, education is required to play a role as an agent in developing the nation's civilization. It is required to be able to form modern values remain Indonesian in their characteristics with various local geniuses, and in many nations, including the developed ones, formal education is an important process for the *nation and character building*. Martin Luther King Jr. said “ *Intelligence plus character, that is the true goal of education*”.

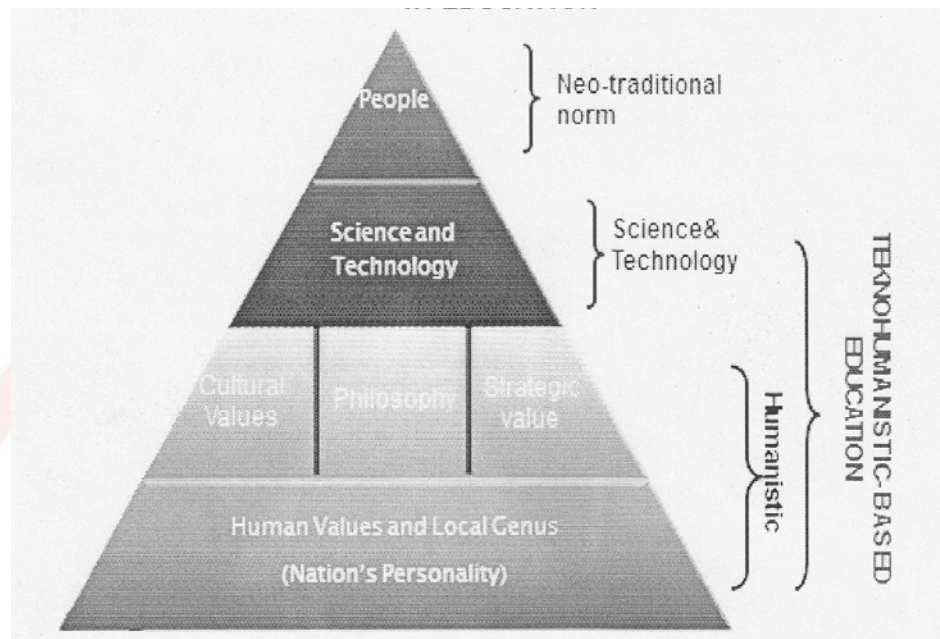
## 2.2 The Paradigm of Education in the Future

Future oriented education is an education that can meet the future challenges, namely, a process that can produce individuals who are equipped with knowledge, skill and values that are needed for the life in the global era.

The International Commission for the 21<sup>st</sup> Century Education that was formed by UNESCO reported that in this globalization era education is administered on the basis of four pillars of education, namely, learning to know, learning to do, learning to be and , learning to live together (Delor, 1996), and Dantes (2010) added one more pillar, that is, learning to live sustainably, which means that the student has to understand the meaning of life, and the sustainability of life in this , so that the sustainability of human life and the support from nature that are harmonious and sustainable can be realized. In this way, through the pillars of the education it is hoped that the student grows into a whole individual, who is aware of all of his or her rights and responsibilities, and who masters science and technology for preparing and sustaining his or her life and for preserving the natural environment where he or she lives.

The learning paradigm that has been used for a long time puts more emphasis on the role of teacher in transferring knowledge to the student. As has been mentioned at the beginning of this paper, today this paradigm has shifted to the one that gives more role to the student to develop the skill he or she , the society, the nation and the country need. Therefore, a model of education that is capable of transforming the intellectual provision with the strong basis of culture is needed, the one that has been called Techno-humanistic Education model. The concept of techno-humanistic education can be shown in the following figure.

## THE CONSTELLATION OF VALUE-SCIENCE-TECHNOLOGY IN EDUCATION



As the implication of globalization and reform, there occurs a change in the paradigm of education. The change is concerned with, *first*, the paradigm of process of education that is oriented toward teaching in which teacher is the center of information is shifted to the learning in which the student becomes the source ( student centered ). With the abundance of alternative learning resources that can replace the function and role of the teacher, the teacher's role has changed into that of facilitator. *Second*, the traditional paradigm of the process of education that is oriented toward classical approach and format in the classroom shifts to the more flexible learning model, such as distance education. *Third*, the quality of education becomes the priority ( which means that quality becomes international quality). *Forth*, the growing popularity of life-long education and the diminishing border between in-school education and out of school education. *Fifth*, with the growing development of science and technology education, and for the sake of human prosperity and good environment, the development of science and technology has to be based on the human values.

### 2.3 Principles of Techno-humanistic Education

Techno-humanistic education is the education that transforms science and culture values that are based on the principle of human dignity. In its administration the techno-humanistic education refers to an effective character education, with the following principles:

1. Techno-humanistic education should develop “ Core Ethical Values” as the basis of good human characters. The basis of the administration of the techno-humanistic education starts from the philosophical principles, that objectively regard pure ethical

- values or core ethical values, such as care, honesty, openness, responsibility, and respect of oneself and others as the basis of good character, that is the basis of the mastery of science and technology that are becoming more complex.
2. Character and techno-humanistic education has to be defined comprehensively, including in them ratio, feeling, and behavior. In the character education program as the core of the techno-humanistic education that generally touches on the cognitive, affective and psychomotor and metacognitive domains contain a broader meaning, and finally can be concerned with behavior aspect in moral life. The techno-humanistic education is based on the mastery of science and technology that is strongly based on understanding and care of basic ethical values, and actions on the basis of the core ethical values.
  3. In relation to formal education, the effective techno-humanistic education requires serious intention, proactivity and comprehensive approach that can stimulate the core values in all stages of school life. It would be better if the school in administering the techno-humanistic education is seen from the moral lens and from this perspective one can see how everything affects the values in the school and the character of the students.
  4. School has to be “a caring community.” The school itself has to show itself as an educational institution that has a good character.

#### 2.4 Comprehensive Approach in Techno-humanistic Education

There are three dimensions of the goal that are covered in the techno-humanistic education, namely, the mastery of science – technology, wisdom and virtues. Education for mastering science and technology has to be based on the axiology of knowledge, namely, for the sake of welfare and prosperity of human beings. School (formal) education that matches the application in various fields/sectors is a strategic endeavor to achieve the objective. Education about virtues is the basis of democracy. Education about values in the framework of student character building needs to be made effective since there are various negative effects that can influence the student’s behavior such as the tendency to deviate from the norm. considering such negative symptoms, what values need to be taught? Two major moral values are “ respect and responsibility”. In addition, there are some values that need to be taught, which include honesty, fairness, tolerance, prudence, self discipline, helpfulness, compassion, cooperation, courage and host of democratic values” (Lickona, 1991;43-45), which will at the end simultaneously build the character of the student.

The character is related to moral knowing, moral feeling, and moral behaving. A good character consists of knowledge about virtues, desire to do something good, and doing something good, or the habit of thinking, the habit of feeling in one’s heart, and the habit of behaving well. In the “moral knowing” component there are six aspects, namely, (1) conscience, (2) knowing moral values, that consists of showing respect to life and liberty, responsibility for others, honesty, openness, tolerance, politeness, self-discipline, integrity, virtues, love, and commitment., (3)

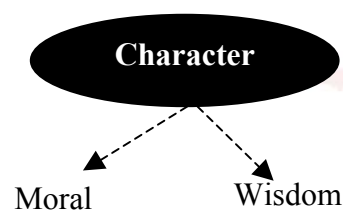
Perspective-taking ( ability to give one's view to other , looking at the situation as it is, thinking about how other should think, react, and feel). (4) moral reasoning is an understanding of what is meant by having morality and why we have to have morality. (5) Decision-making is the ability to make a decision in facing moral problems. (6) self-knowledge ( ability to recognize or understand oneself), and this is the most difficult to achieve, but this is needed for moral development.

In the “moral feeling” component, there are six important aspects, namely, (1) conscience, that has two sides, cognitive ( knowledge about what is right) and emotional side ( feeling that one is obliged to do something good). (2) self-esteem and if we measure our self-esteem, it means that we evaluate ourselves; if we identify ourselves it means that we evaluate ourselves; if we evaluate ourselves it means we respect ourselves. (3) empathy ( ability to identify oneself with other, or as if one is experiencing what is being experienced by other and what other is doing. (4) loving the good. . This is the highest form of character, including becoming interested in the actual virtue. If one loves the good, then he or she will do the good thing and has morality. (5) self-control, and this functions to control one's pleasure. (6) humility, that is the moral virtue that is sometimes forgotten or neglected, although it is the essence of a good character.

In the “moral action : component, there are three important aspects, (1) competence ( moral competence), that is the ability to use moral considerations in an effective moral behavior; (2) will, that is the correct choice in a particular moral situation, which is usually difficult; (3) habit, that is a habit to act correctly and appropriately.

### III. Concept

On the basis of the theoretical review above, character education and development is classified into two dimensions, that is, moral and wisdom, that can be shown as follows.



The mastery and development of science and technology which from time to time is on the increase, brings positive effects on human prosperity, such as the shortening of time and time needed for doing the same thing, the more practical ways of accomplishing complex tasks. Beside the many positive things, there is a concern about the negative effects when the development of science and technology is not controlled. This will destroy this life. Dantes (2009) developed a perspective about integrating character values with the development of science and technology that are implemented in education, which is called character education in the techno-humanistic perspective.

The above concept was followed up with a study by Dantes (2010) with the focus, techno-humanistic-based education at formal schools in Indonesia and found out that the character aspects (humanistic aspects) that have to be developed simultaneously with the development of science and technology cover: *moral awareness, knowledge of moral values, ability to give perspective and moral consideration, recognizing/understanding oneself, work( one's view about work), conscience, self-esteem, empathy, loving the good, self-control, humility, compassion, honesty, loyalty, faith, moral competence, will, habit, self discipline, responsibility, friendship, courage, perseverance, and decision making.*

As the consequence, it is very important to develop science and technology based on the value aspects of character that are consonant with human culture, since life in the future is very hard and competitive. The review of references on the change of time has been done by various scholars such as Rossabeth Moss Kanter (1994), Niesbet (1997), Rowan Gibson (1997), Peter Sange (2004) and others who give a description that in the future there is a need for education that, in addition of focusing on the mastery of science and high technology, it should be based on understanding and mastery of noble character values.

Then, based on the perspective of techno-humanistic-base character education and the result of need assessment above, there is a need to develop an initial prototype of techno-humanistic-based character education at the formal education in Indonesia that consists of three dimensions that are covered in it, namely (1) mastery of science and technology, (2) mastery of moral values ( moral knowledge, feeling and behavior ), and (3) application of wisdom. The science-technology dimension, the mastery of moral values ( moral knowledge, feeling and behavior) can be transformed through the education pillar of learning to know, learning to do and learning to be; while wisdom values are transformed through learning to live together and learning to live sustainably. The first and second dimensions transformation are at the stage of formation and development of the character values until they are acquired by the student ( that concerns the aspects that have been found out by Dantes (2012), while the third dimension is the implementation of the values in life.

#### **IV Research Methodology**

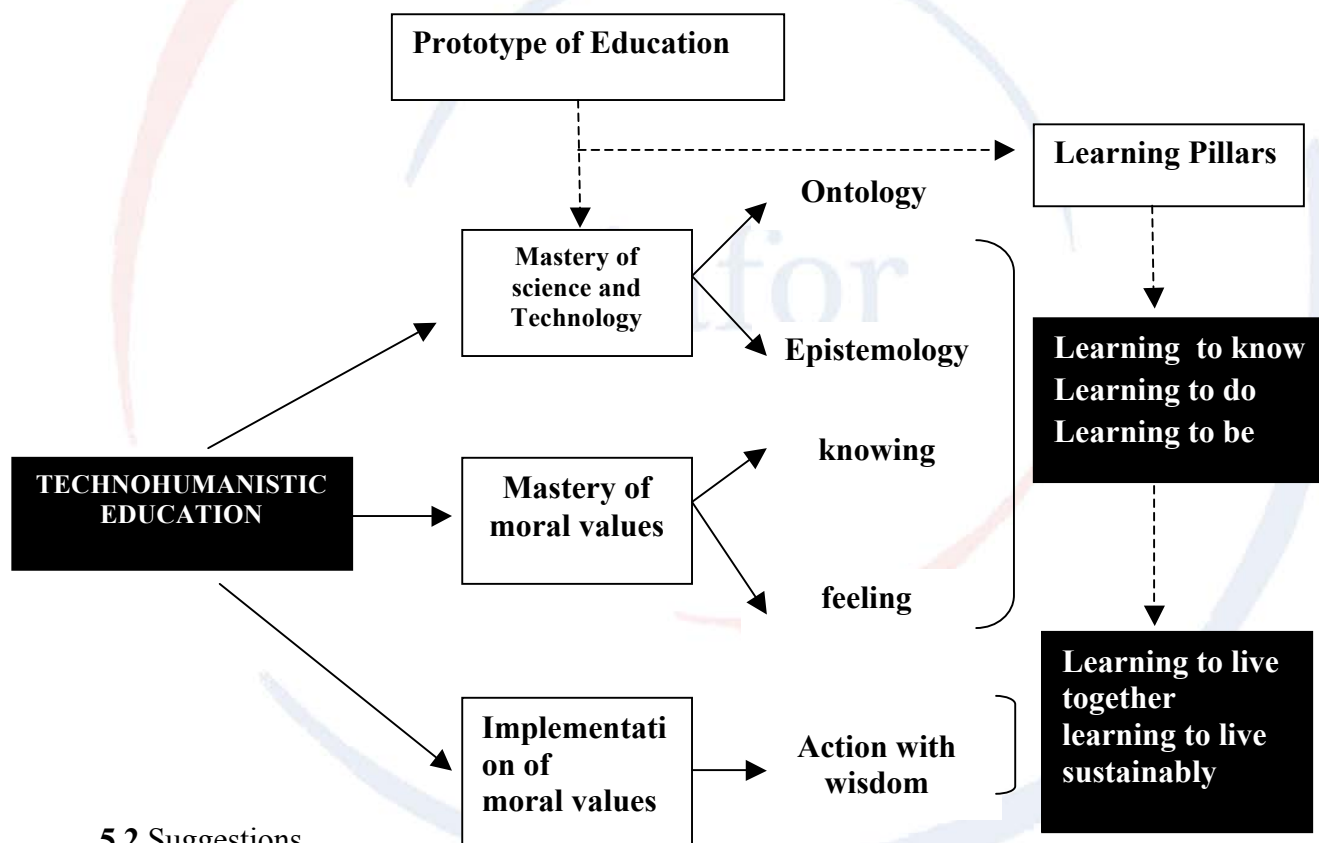
The population of this study was the students of secondary schools in the province of Bali. The sample was selected by cluster random sampling. The sample consisted of 214 secondary school students, 50 teachers, and 50 parents. The data were collected by Delphi pattern questionnaire. Selected interview, and focus group discussion. The methods of data analysis used were trend analysis and qualitative analysis.

## V. Conclusion and Suggestions

### 5.1 Conclusion

Based on the analysis of the data it was found out that the dimensions and indicators of the character education are (1) moral dimension, that covers the indicators: moral awareness, knowledge of moral values, ability to give moral perspective and moral development, understanding of self, perspective about work, self-esteem, empathy, love to goodness, self-control modesty, compassion, honesty, loyalty, faith. (2) wisdom dimension that covers the indicators: moral competency, willingness, habit, self-discipline, responsibility, friendship, courage, perseverance, decision making.

The implementation of the techno-humanistic-based character education found from trend analysis and qualitative analysis as follows:



### 5.2 Suggestions

Suggestions or recommendations are given to (1) formal educators, nonformal and informal educators to try to implement this in the education task domain, in order to achieve optimal level of students' character development. This can give an effect on the social conducive behavior that in its turn has an effect on the comfort in the social interaction of the people in our nation; (2) the government to seriously support the implementation of the proposed prototype. With the participation of the government it is hoped that this will have a positive impact on the life of people in our nation.

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*Turning Adversity at Home into Advantage at Destination: Malaysian Chinese Students  
in Taiwan*

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The Asian Conference on Education 2012

Official Conference Proceedings 2012

Abstracts

This paper examines how Malaysian Chinese students turned their ethnic minority status into their advantage in pursuing higher education in Taiwan. Taiwan started actively recruiting overseas Chinese students since 1950 mainly as a soft power policy. Faced with the deprived access to local higher education under the racial quota system, some Malaysian Chinese students, especially those from local Chinese high schools, chose to study abroad. Owing to the benefits granted by the Taiwanese government based on their Chinese lineage, the marginal ethnic status of Malaysian Chinese at home is transformed into a privileged right to in Taiwan's higher education system. Despite their localized ethnic identity, many young Malaysian Chinese take advantage of their ethnic heritage in order to seek higher education in Taiwan, a strategy to both overcome the deprived opportunity to have access to local higher education as well as to fulfill the dreams of getting higher education and studying abroad. In this process, the dense ethnically-based transnational student migration networks are especially crucial in directing and facilitating such migration decisions and movements.

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## ***Introduction***

Owing to its rapid growth in volume and scope, international student mobility has attracted increasing attention in research and policy-making. Much attention has been paid to the economic, political, social-cultural and academic dimensions of this phenomenon (Adams, Banks, and Olsen, 2011). From the economic perspective, the force of the market has become increasingly dominant. Driven by privatization, decreased public funding for higher education and the need of HEIs' to generate revenue, the increasingly expanded international market of higher education mobilizes large numbers of students to study overseas (Healey, 2008; Meadows, 2011). Moreover, overseas credentials can be valuable "position goods" for students themselves to enhance their chances in upward social mobility (Hirsch, 1976; Marginson, 2006). From the political perspective, recruiting international students can be employed as an important strategy to exercise a country's soft power (Nye, 2005; Watanabe and McConnell, 2008). From the social-cultural and academic perspectives, countries send students abroad to enrich mutual understandings, and institutions recruit international students to enhance their international competitiveness and reputation. For international students, while study abroad often implies cultural clashes and adjustments, they gain degrees, quality education, language training by studying overseas (OECD, 2004). Moreover, the direction and magnitude of international student mobility as well the practices of internationalization of HEIs worldwide often manifest the way linguistic hegemony (such as the dominance of English) operates in the international higher education market (e.g., Brock-Utne, 2007; Kerklaan, Moreira, and Boersma, 2008).

Nevertheless, little has been said about the role of ethnicity in transnational student mobility. Based on the observations of ethnicity as a significant factor in affecting social interactions and mobility, it is hardly convincing that student transnational mobility can be ethnically-blind. To fill in this mission piece, the objective of this paper is to examine how ethnicity plays a role in international students' migration decisions and movements. This paper is based on recent research on transnational student mobility and the internationalization of higher education in Taiwan. The materials discussed in this paper were generated in 2008 and 2009 through semi-structured in-depth interviews with eight Malaysian Chinese students studying at four leading universities (two public and two private) in Taiwan. The average length of the interviews was approximately two hours. The interviews were digitally recorded with the permission of the interviewees and transcribed for analysis.

### ***Taiwan's Overseas Chinese Recruitment Policy***

International students in Taiwan consist of “overseas Chinese students” (*chiaosheng*) and “foreign students” (*waichisheng*). These two groups are recruited through distinct channels and administered by different government agencies, despite the fact that all but a few overseas Chinese students in Taiwan are either foreign nationals or have dual citizenships. According to the Taiwanese government regulations, the term “overseas Chinese student” is reserved for those of Chinese ancestry who were born and raised overseas (except Hong Kong, Macau and PRC<sup>1</sup>) until the time of school application, or Taiwanese citizens residing overseas for at least six consecutive years and acquired visas for studying abroad (OCAC, 2011a). The term “foreign student” refers to a student of foreign nationality who is not a citizen of Taiwan and does not possess an overseas Chinese student status (Ministry of Education, 2011). According to these regulations, ethnic Chinese overseas generally fall into the category of “overseas Chinese students” when they come to study in Taiwan.

The recruitment of overseas Chinese students in Taiwan began in 1950. Owing to the fact that approximately 80 percent of overseas Chinese residing in Southeast Asia, the recruitment focused specifically on this region. This effort was in part a continuation of preceding policies on overseas Chinese affairs instituted by the KMT government in the 1930s due to the strong support received from overseas Chinese communities in founding the Republic of China (ROC) (Chang, 1991; Chu, 1973). Soon after the retreat of the KMT government to Taiwan in 1949, overseas Chinese affairs were resumed with added purposes. Faced with its most threatening enemy, the People's Republic of China (PRC) led by the Chinese Communist government, Taiwan were in need of international alliances. Overseas Chinese communities were considered by the KMT government in Taiwan to be a plausible source of support based on years of cultivation in overseas Chinese affairs. However, since the ethnic Chinese overseas were generally migrants or descendants of early migrants from China, establishing bonds with overseas Chinese communities and redirecting their loyalty became a tricky mission for the Taiwanese government. In this context, providing education for overseas Chinese students became a constructive means of developing ties with overseas Chinese communities and an important soft-power policy. With the aid from the United States (US) from 1954 to 1965 and the efforts made by the Taiwanese

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<sup>1</sup> Students from Hong Kong and Macau belong to a distinct category called “Hong Kong and Macau students” and are governed by a tailored recruitment policy. Nevertheless, they enjoy the same benefits granted to overseas Chinese students and are included in the Taiwanese government's statistics of overseas Chinese students (MOE, n.d.). The recruitment of Mainland Chinese degree-seeking students to Taiwan started in 2011, and Mainland Chinese students are categorized into yet another category called “Mainland students” and are governed by a discrete policy.

<sup>2</sup> The Sijil Pelajaran Malaysia (SPM), or the Malaysian Certificate of Education, is a national

government and universities, the number of overseas Chinese enrollments in Taiwan's higher education institutions soared from sixty in 1951 to its first peak of 11,582 in 1989 (Yu, 2001). The decline in overseas Chinese student enrollment figures in the 1990s might be related to the rapid economic developments in Southeast Asian countries, the rise of China and its "Open Door" policy, and the Taiwanese government's cut in benefits originally granted to overseas Chinese students in response to the mounting cry from the local population for greater access to higher education (Lee, 1991; Ma, 2012). After 2000 the enrollments of overseas Chinese students increased again. In 2011, there were 13,334 overseas Chinese students studying in Taiwan's higher education institutions. They came mainly from Asia, of which Malaysia sends the largest numbers (OCAC, 2011b).

### ***Ethnic Chinese in Malaysia***

Ethnic Chinese formed a significant minority group in Malaysia, constituting approximately 30 percent of the total population over the past decades (Suryadinata, 2004). Mass Chinese immigration to the Straits Settlements (Penang, Malacca, and Singapore) began in the nineteenth century as a result of both voluntary and forced migration. Since then the Chinese started to establish their own schools, business and cultural clubs, and dialect-based associations to safeguard their culture and commercial interests. By the 1920s, a Chinese community emerged in British Malaysia, and the source of its strength in maintaining Chineseness was the ties among the local ethnic Chinese, with other Chinese groups in Southeast Asia, and with those in Mainland China (Shamsul, 2004).

Wang (1970, 2001) suggested that the Chinese overseas can be divided into three groups (not including the fourth group of those who did not identify themselves as ethnic Chinese), and these three groups represented three stages of changing identities: *huaqiao* (overseas Chinese), *huaren* (ethnic Chinese), and *huayi* (Chinese descent). In the past, most Chinese overseas considered themselves *huaqiao*. They maintained links with the politics of China and identified with the destiny of China. Moreover, since both the Chinese and the British colonial government claimed Malaysian Chinese as their subjects, these Chinese often possessed dual citizenship (Shamsul, 2004). After World War II, the independent Malaysia and its subsequent nation-building challenged the local Chinese to choose their citizenship. The majority of the Malaysian Chinese took on the new Malaysian national identity, and faced the prospect of transforming their culture-based community into one that was required to pledge its loyalty to the new nation-state (Wang, 2004). Nevertheless, the drive to

preserve a strong communal Chinese identity remained very strong. Consequently, the Chinese in post-war Malaysia were gradually transformed into *huaren* or *huayi* (Suryadinata, 2004). Post-war Chinese identity and Chineseness of Malaysia Chinese is in effect based on their ethnic language and culture imparted mainly through education, and the Chinese schools are perceived as the custodian of Chinese language and culture in Malaysia (Shamsul, 2004; Tan, 1997). Although Malay is the main teaching medium and that no access to higher learning was possible without it, students can choose to attend government-approved Chinese-language primary schools (Wang, 2001).

It is noted that the growing preference of Chinese schools is based not only on communal sentiments but also on these schools' education quality, discipline, and the acquiesce of additional language skills (Mandarin Chinese). It is estimated that some 70 percent of Chinese parents (including a significant number of English-educated Chinese) send their children to Chinese schools (Hing, 2004).

In addition to primary schools, there are sixty Chinese privately-funded "independent" high schools in Malaysia. The United Chinese School Committees Association of Malaysia (UCSCAM, better known as "*Dong Jiao Zong*") coordinates the curriculum adopted by these schools and organizes the annual Unified Examination Certificate (UEC) standardized test (UCSCAM website: <http://www.djz.edu.my/v2/school.php>). Although the certificates of independent schools are not recognized by the Malaysian government, non-government sectors and foreign institutions generally recognize these certificates.

It is noted that for the past forty years, Malaysia has been the only Asian country that officially discriminate against a division of its population in regards to higher education. As an act for affirmative action, a racial quota system for university admissions was set through the National Economic Policy and National Education Policy to assist the ethnic Malays (Hing, 2004). By allocating generous admission opportunities to ethnic Malay students, the policy has essentially been geared toward improving the social mobility of the country's majority Malays over their financially dominant Chinese counterparts, an imbalance created during the British colonial period. As a result, though Chinese Malaysians account for approximately 30 percent of the country's overall population, by some estimates they constitute less than 10 percent of the students at national universities (Cohen, 2001).

## ***Data Analysis***

### **Studying abroad as a pre-programmed decision**

Although no statistical figures are available, field data indicate that all international students from Malaysia are ethnic Chinese. All but a few came to Taiwan as overseas Chinese students, and a vast majority of them had attended government-approved Chinese-language primary schools and graduated from Malaysian independent high schools before they came to Taiwan. From the life storied told by informants, it is clear that their decision to choose Taiwan for higher education had been pre-programmed in their upbringing and schooling back home.

These ethnic Chinese grew up mostly from middle-class or lower middle-class families. They were sent by parents to public Chinese-language primary schools in order to “learn Chinese” and “learn to be Chinese.” After they finished primary schools, they often faced the decision to study in either public Malay high schools or private independent Chinese high schools, and sometimes private English high schools as well. Their decision to study in independent Chinese high schools was often based on the well-received high quality of independent schools, family’s financial capacity, and the influence from social networks within the Chinese community to “maintain Chineseness”:

Many *huaren* (ethnic Chinese) do not attend private schools mainly because of financial concerns; their parents are not willing to pay for high tuitions. (BB007)

[The reason for me to get into the independent high school system] was first because my relatives’ children all studied in independent high schools. In addition, the independent high school in Malacca was a prestigious school and its students were perceived as top students. Second, because it’s a private school and students have to pay tuitions, so you get a feeling that these students must be good and come from well-off backgrounds. (BB005)

Because independent high schools do not follow the national curriculum and adopt the curriculum coordinated by UCSCAM, their students often face the difficulty in passing the national examinations Sijil Pelajaran Malaysia (SPM) and Sijil Tinggi

Persekolahan Malaysia (STPM), both are prerequisites to enter local universities.<sup>2</sup> Although independent high schools use three languages – Mandarin Chinese, English, and Malay – in their curriculum, Mandarin Chinese is the main teaching language. In addition, ethnic Chinese normally speak Chinese (either Mandarin or other Chinese dialects) at home and use minimum Malay in daily life. The Chinese language and cultural identity thus is effectively imparted not only at home but more importantly through Chinese schools. However, the independent high school students' strong Mandarin Chinese language ability is often coupled with their relative weakness in Malay and English. This creates barriers for them to pursue local higher education in which Malay is the only language and that both SPM and STIP are conducted in Malay. Some independent high schools join only the Unified Examination Certificate (UEC) standardized test organized by UCSCAM and do not encourage students to take the national SPM or STPM examinations. Moreover, they may be less confident in pursuing higher education in Western countries with their English language ability.

Independent high schools emphasize three languages; that is, you have to learn Chinese, Malay and English. However, I feel that we do not excel in any of these three languages. (Q: What do you mean?) You may be better than others in Chinese, but your Malay and English would be weaker in comparison with students from public high schools. (BB007)

[One of the reasons] for me to come to Taiwan was because of my English ability. My English is terrible, at that time it was terrible. I would face the pressure if I go to the Western countries. If I come to a Chinese environment, it would be very easy for me. This is an opportunistic attitude. (AB001)

Aside from language issues, the costly education in the Western countries often prevent these students, mostly from middle- to lower-middle class families, from pursuing higher education in major destinations such as the United States, the United Kingdom, or Australia. Singapore and China sometimes are possible options; the former for its high-quality education and geographic proximity and the latter for its Chinese environment. However, many of the informants mentioned the

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<sup>2</sup> The Sijil Pelajaran Malaysia (SPM), or the Malaysian Certificate of Education, is a national examination taken by all fifth-year secondary schools in Malaysia. SPM is equivalent to the O-Level and is the second last public examination at the secondary school level before the entry into a first bachelor degree course at a Malaysian university. The Sijil Tinggi Persekolahan Malaysia (STPM), being a pre-university study and equivalent to the A-Level, is the last public examination at the second school level.

competitiveness of scholarships from and admissions to Singaporean universities as well as the costly tuition paid by international students in China prevented them from considering these two countries as possible destinations. Moreover, those who long for a “real” overseas experience would see the close proximity between Malaysia and Singapore as a downside for choosing Singapore. Taiwan, by providing low-priced education, academic freedom and a resourceful Chinese learning environment at a reasonable distance, become an attractive option:

Many of my classmates went to the United States or Australia...their families are wealthier. Generally speaking, those who choose to come to Taiwan are because of its much cheaper tuition. (BB007)

The majority of those studying in independent high schools normally would either come to Taiwan or go to Western countries...I didn't hear much about going to China, because China is more expensive. If we come here, it's New Taiwan Dollars. If we go to China, it's US Dollars. It's a big difference. (DB008)

Furthermore, the cultural influence from Taiwan on the local Chinese community, manifested through popular culture and the independent high school system, can also explain why these students chose Taiwan as their destination:

I felt that I would go to Taiwan, I did not consider going elsewhere...because we watch Taiwanese TV programs and receive information from Taiwan. My brother and sister also went there to study. My own Chinese ability is better [than other language abilities], and my parents respected my decision. Some of my friends also came to Taiwan to study, so I took for granted of my decision to study in Taiwan. (AB009)

I read some books published in Taiwan back in high school, and many of them I still read, such as [the ones written by] Lung Yingtai, Bo Yang. Maybe not many in the younger generation in Taiwan would read their books, but many in Malaysia still read their books. That's because our social situation is like the old days with martial law in Taiwan, and these books can fit our needs. (AB001)

### **Double-edged sword of ethnicity**

To the Chinese in Malaysia, their ethnic minority status put them at a disadvantage in getting access to local higher education. Many informants indicated that because their certificates from independent high schools are not recognized by the Malaysian government, and the racial quota system in Malaysian higher education further barred many qualified Chinese from entering local universities, many were pushed overseas to study:

I studied in an independent high school. Many students from Malaysia in Taiwan are independent high school graduates. Because our country does not recognize our certificates, so once we graduate we would study in some local private colleges or study abroad. (BB005)

It is very difficult to study in a local university in Malaysia...although maybe it is not good for me to say this; there are some racial issues involved. As you know, there are three major races in Malaysia: Malay, Chinese, and Indian. Malay stands as the largest racial group, and it is easier for Malays to enter local universities. There was news before reporting things like Chinese students had very high scores but could not enter local universities. (DB009)

Our government set the quota system in Malaysian universities...many seats are reserved for Malays, and we feel like, why is this? We are also Malaysian citizens! We are very furious about it... the government does not recognize us [independent high schools], and we don't want to stay in Malaysia even if we have good examination scores. In fact, the quality of independent high schools is better, and the government says that we only want to run outside and study overseas and blame us for not helping our home country. I think that's because you don't recognize us that we run away. (BB005)

Faced with the deprived access to local higher education under the racial quota system, some Malaysian Chinese students, especially those from independent Chinese high schools, chose to study abroad. Owing to the benefits granted by the Taiwanese

government (such as scholarships and assistantships, subsidies, privileged admission policy) based on their Chinese lineage and advantages given by universities (such as guaranteed school accommodation, priority part-time employment opportunity on campus) due to their status as overseas Chinese students, the marginal ethnic status of Malaysian Chinese at home is transformed into a privileged right to in Taiwan's higher education system.

### **Transnational ethnic social network at work**

The Taiwanese government's recruitment policy and programs on overseas Chinese students initiated in 1950 successfully generated significant student migration streams from Malaysia. The efforts exerted by the Taiwanese government and universities, together with high returns of Malaysian Chinese students, dense social networks within the Chinese community, and the operation of independent Chinese high schools in Malaysia, created a self-sustained transnational student migration system between Malaysia and Taiwan based on Chinese ethnicity.

At home, the influence from family members, especially parents, can be significant in influencing students' migration decisions. Many informants indicated that their parents, relatives, and/or siblings had studied in Taiwan, and these people set the example for them to follow:

My father graduated from Taiwan's Chung Hsing University...my brother will come in this September to study at the National Central University...[The reason for me to choose Taiwan to study] was because of its low tuition, and also because my uncle is here...He graduated from National Taiwan University and got married [to a local Taiwanese] and stayed here [in Taiwan] since... I originally wanted to study in China, but my father had studied in Taiwan and he supported me to come here; also my uncle was here. (CB001)

For these Chinese students, the independent Chinese schools they attended and their school cohorts often put forth a more powerful influence on their decision to study in Taiwan. First, the significant number of Malaysian Chinese students studying in Taiwan over the last few decades, mostly from independent Chinese high schools, created a large base for a homogeneous hierarchical system of student and alumni associations based not only on nationality and ethnicity but also on origins of high school and region. The Malaysia Students Association in Taiwan (MSAIT, also

known as Da Ma Tzung Huei) is the top student incorporating and coordinating all Malaysian student associations in Taiwan. Under MSAIT there are two sub-divisions of Malaysian student associations, one based on the members' high school alma maters and the other based on the universities that members attend. The high-school based student associations play a critical role in transmitting information of Taiwan to independent high schools and ushering the independent high school graduates in getting to Taiwan and to their respective universities. The university-based Malaysian student associations later take over, helping these Malaysian Chinese students to adjust to campus life, mediating between these students and the university administrative system, and forming a safety net for these students in their daily life: :

We have a regional student association back in Malaysia. Every summer the *shueijie* (the female senior students) and *shueijang* (the male senior students) would come back and arrange the affairs such as visa and airport pick-up for incoming students. The student association will also hold an orientation seminar and welcoming activity for incoming students and take these students to the respective universities they will attend once they arrive. If a school does not have a large number of students going to Taiwan to study, the independent schools in that region will organize a united student association together. There are four independent high schools in my region, and together they formed the Selangor [Independent High School] Student Association. (CB001)

The teachers in independent Chinese high schools, many of them received higher education in Taiwan, can be very influential in these students' choices of destination. In addition, some of the independent Chinese schools also encourage students to study overseas, including Taiwan:

It was mainly my high school to do the coordination (to help students to go to Taiwan). Teachers would be responsible for taking students' names [in joining the travel group to Taiwan], and the school would take charge in contacting students, the [high school] alumni association [in Taiwan], and the UECOS...My school is very serious about this and is very happy to help... Our teacher would bring the whole group [of all incoming students from my high school] to Taiwan. (AB009)

At that time of my application [of admission to Taiwanese universities], I did not know how to fill out the priority form<sup>3</sup>, so I went back to my high school to ask my teacher. He suggested that I should first identify the programs I wanted to study, find out the schools that have these programs, then priority them by putting the national ones first and the private ones second. I did just that, very simple. At that time I did not think if this school is good or bad. (Q: So you just totally trusted your teacher?) Yes. (Q: You weren't afraid that maybe the teacher would lie to you? (laugh)) Oh no. All of them came back from Taiwan, so they couldn't be wrong. (DB009)

In short, this dense ethnically-based transnational student migration network plays a critical role in directing these Malaysian Chinese students' migration decisions to come to Taiwan and facilitating their movements.

### ***Conclusion***

The case study of Malaysian Chinese students in Taiwan demonstrates an important finding: ethnicity can be an critical factor in mobilizing international student mobility. Despite their localized ethnic identity, many young Malaysian Chinese take advantage of their ethnic heritage in order to seek higher education in Taiwan, a strategy to both overcome the deprived opportunity to have access to local higher education and to fulfill the dreams of getting higher education and studying abroad.

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<sup>3</sup> For overseas Chinese students to apply for admission to universities in Taiwan, they need to fill out a priority form with the prioritized choices of university programs. The University Entrance Committee for Overseas Chinese Student (UECOCS), an agency organized by universities and coordinates recruitment and admissions of overseas Chinese students, is responsible for assessing these students' applications and distributing these students to respective universities and programs based on their qualifications (such as the UEC test scores or high school records) and the priority forms they submit.

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June 6-9, 2013 - ACSEE2013 - The Third Asian Conference on Sustainability, Energy and the Environment

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October 23-27, 2013 - ACETS2013 - The Inaugural Asian Conference on Education, Technology and Society

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July 4-7, 2013 - ECSS2013 - The Inaugural European Conference on the Social Sciences  
July 4-7, 2013 - ECSEE2013 - The Inaugural European Conference on Sustainability, Energy and the Environment

July 11-14, 2013 - ECE - The Inaugural European Conference on Education  
July 11-14, 2013 - ECTC2013 - The Inaugural European Conference on Technology in the Classroom

July 18-21, 2013 - ECAH2013 - The Inaugural European Conference on Arts and Humanities  
July 18-21, 2013 - ECLL2013 - The Inaugural European Conference on Language Learning

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