A group of graduates in black gowns and caps are celebrating, with many caps thrown into the air against a clear blue sky. The graduates are looking upwards with joyful expressions, some with their arms raised.

# ACE2017

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***Operative Fiscal Management Mobility And Its Implications To School  
Performance In Compostela Valley Division***

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Philippines

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**Abstract**

The main purpose of the quantitative descriptive correlation study was to determine the significant relationship between the level of operative fiscal management and the level of school performance in Compostela Valley Division for School Year 2016-2017. Data were collected from the 44 school heads and 146 teachers both from elementary and secondary schools through a researcher-made questionnaire. The operative fiscal management was measured in terms of planning, procuring, controlling and reporting, while the school performance indicators were drop-out rate, promotion rate and NAT mean percentage. Results revealed that the level of operative fiscal management in terms of planning, procuring, controlling and reporting was very high with a mean of 4.52. Furthermore, there was a significant difference in the level of fiscal management when respondents were grouped according to length of service with a p-value of 0.002 and educational attainment with a p-value of 0.001. However, when respondents were grouped by gender and designation, it posted a p-value of 0.097 and 0.107 respectively no difference in perception was noted. The school performance in terms of drop-out rate was very low, while majority of the schools have above average performance in NAT and the promotion rate lodged high level. There was a significant relationship between the level of operative fiscal management mobility and the level of school performance in terms of promotion. However, for the operative fiscal management mobility and the level of school performance in terms of drop-out rate, no significant correlation has been revealed.

Keywords: Fiscal Management, School Performance, Philippines

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## Introduction

Financial management capacity is an important possession of a school administrator. This financial management includes tasks in order to manage all raised and allocated funds in a particular school. It is the concern of a particular educational institution to ensure and to keep track that there is a proper, adequate and accountable utilization of resources budgeted for education in the right manner. Thus, it is imperative that existing financial resources be managed efficiently. (Kaguri, et al 2014).

The mismanagement of funds often leads a shortage of critical resources in schools. This often results in the unsatisfactory performance of teachers and students (UNESCO, 2000). Thus, the quantity and quality of learning programs are directly dependent on the effective, efficient management of allocated funds. It follows that achievement of the school system's purposes can best be achieved through excellent fiscal management (Uxbridge Public Schools).

Fiscal management, as defined by Rivera (2015) is the process of having an organization running efficiently within the allotted budget. School administrators are commissioned to do proper operation on fiscal management for this significantly contributes to its achievement and performance. In this operative fiscal management, the school administrators must ensure that programs, projects and activities will address the access to education as to (getting children into school), drop-out rate (keeping children in school) and quality education (providing children quality education). The efficiency and effectiveness in the utilization of school funds towards the accomplishment of school goals and objectives must be of utmost consideration by the head of the school.

In Benue State-Nigeria, Tim (1992) stressed that financial management in secondary schools has not been given the desired attention over the years and therefore affects secondary schools adversely. Some head teachers or school managers are found to be inefficient in the way they manage the finances in their schools. Such observation supports the notion that proper management of school finances greatly depends on the care of school administrators responsibly taking part of it. It is in the school heads' discretion to bring out the best way of making this operative and functional for a certain goal-to heighten the academic level of learners.

In addition, Niemann (1997) cited that a school's financial management is the execution by a person in a position of authority of those management actions connected with the financial aspects of schools and having the sole purpose of achieving effective education. Similarly, Joubert and Bray (2007) described financial management as the performance of management actions connected with the financial aspects of a school for the achievement of effective education.

In the Philippines, the Department of Education has directly entrusted all school administrators to manage and utilize school funds and finances. This highlights principal empowerment which deals with total school-based management to improve public school conditions and upgrade the quality of education. Luistro (2013) explained that in this way the administration of the Department of Education is best seen in how the schools are managed and how well schools are maintained.

This is supported by the DepEd Order No. 13, s. 2016, otherwise known as, *“Implementing Guidelines on the Direct Release of the Maintenance and Other Operating Expenses (MOOE) Allocation of Schools Including Other Funds Managed by Schools”*. School heads and teachers will do the necessary planning and timely implementation for improving the learning outcome of the learners. Recently, the Department of Education intensifies its efforts to achieve high learning targets for some 20 million students in elementary and secondary public schools nationwide. This is more responsive to the requirements for improved classroom instruction and better school management. The importance of schools’ financial management posits a goal of achieving effective education (Luistro, 2013).

In Compostela Valley Division, all school administrators are tasked to manage their respective school finances. They take this managerial role so that each school’s intended goals and objectives will be achieved. However, it is noted that there are some schools that show inefficiency in the way they manage their school funds. There are some school could not exhaustedly expense their total allocation because of some unliquidated expenses. There were some cases of alleged misuse of school resources. The aspect of having financial management properly taken care of exhibits an assurance that better school performance stands out. On the other hand, its opposing side responds that poor management of financial resources in schools predominantly lead to underachievement. It is in this premise that the researcher was interested to conduct the study.

## **Conclusion**

Derived from the results of the study, the following conclusions are drawn: The level of operative fiscal management mobility in terms of planning, procuring, controlling and reporting is very high. For the school performance, the drop-out rate of schools is low; while the NAT performance when classified varies when grouped according to poor, below average, above average and superior, and finally the promotion rate is high.

There is a significant difference on the level of fiscal management when respondents are grouped according to length of service and educational attainment. The level of operative fiscal management mobility does not vary significantly when grouped according to gender and designation.

There is a significant relationship between the level of operative fiscal management mobility and the level of school performance in terms of promotion. However, while for the operative fiscal management mobility and the level of school performance in terms of drop -out rate, no significant correlation has been revealed.

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*Extraversion and Introversion in Young Adult ESL Learners*

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**Abstract**

Despite the best efforts of student advising, retention of first year university students remains a challenge in the world of academia. Student's personality types, specifically their tendencies towards extraversion and introversion, and the correlation to academic success have been studied before, but never with a population of young-adult Emirati students on a foundation year program. In this study, the researchers identify their students' extraversion-introversion preferences and then track said students' performance through to the end of their foundation experience. A majority of introverted students were successful within a two-year span while a majority of extraverted students failed to meet the expectations of the program. If universities wish to retain more students, teachers need to recognize their students' extravert-introvert preference, and lesson plan accordingly.

Keywords: MBTI, Extravert, Introvert, Carl Jung, Psychometric

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## Introduction

In 1922, Swiss psychologist Dr. Carl Jung published a book called *Psychological Types* which introduced the world to the terms extravert and introvert. The former is characterized by a focus on the outer-world of events and the cultivation of wide social relationships while the latter is characterized by a focus on the inner-world of thoughts and reflections, and a tendency to seek more quiet surroundings. However, it must be pointed out that “everyone possesses both mechanisms, extraversion as well as introversion, and only the relative predominance of one or the other determines the type” (Jung, 1976, p.4).

It was Katharine Briggs, a young graduate from Michigan whose interest in Jung’s theory eventually led to the production, in 1943, of the Myers-Briggs Type Indicator- a psychometric tool designed to identify a person’s preferences for energizing, learning, decision-making and organization. Briggs identified facets, or sub-personalities, for the extravert-introvert dichotomy as seen in Figure 1.

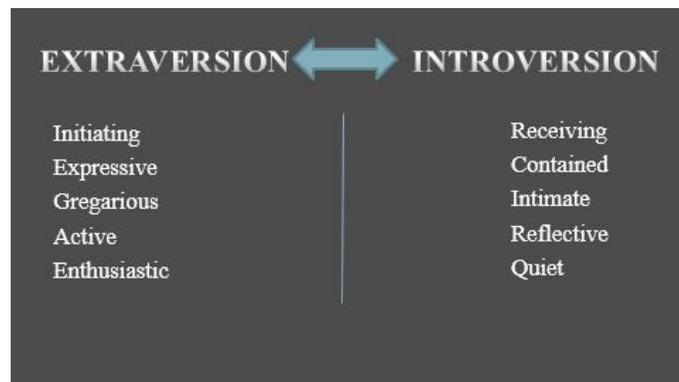


Figure 1: Facets of Extraversion and Introversion  
(Briggs-Myers, Mccauley, Quenk & Hammer, 2009)

Adding to the above definition of extraverts, we can say that they have a preference for initiating conversation and enjoy a stimulating environment which can subsequently feed their urge to collaborate and their desire to influence events. As a result, extraverts also tend to attach importance to the persona they project. Meanwhile, introverts are quite comfortable in their own company or with intimate others, and their reflective nature tends to contain their emotions and responses (Jung, 1976). Moreover, introverts may tend to view phatic communion, or the pleasantries of small talk as mundane and unnecessary.

While psychological tests such as the MBTI have often been dismissed as pseudo-scientific, it is thanks to the rise of brain imaging in the 1990’s and the subsequent growth of neuroscience that research now strongly suggests that the existence of extraversion and introversion is correlated to the blood flow within the brain. Blood flow to the temporal lobe is responsible for interpreting surrounding sensory data

(extraversion), and blood flow to the frontal lobe is involved in memory, planning and problem solving (introversion) (Johnson et. al, 1999). Further studies also suggest that the “activation magnitudes in the brain’s reward system” are more evident in extraverts than for introverts (Cohen et. al., 2005) and support the widespread idea that an extravert’s dopamine network is more active than that of introverts.

Jung’s theory has led us today to a body of research showing that in academic environments where introspection, self-reflection and hours of study without immediate reward are arguably the norm, extraverts tend to suffer and are more likely to struggle if they fail to adjust to the expectations of academia. This raised the question in our own minds as to whether or not a correlation between extraversion and poor academic performance was indeed the case with our own students. Consequently, we undertook a longitudinal study at the Petroleum Institute in Abu Dhabi with a view to the possibility of addressing student retention and enhancing student advising.

### **Literature Review**

There are a variety of different tools inspired by the MBTI, such as NEO-PI, the Five Factor Model (FFM) and Eysenck’s Personality Inventory (EPI), so researchers in the following studies may have used different tools to assess extraversion and introversion in their participants. Regardless of the tool used, a body of research over the past 50 years consistently suggests that extraverts are less likely to achieve academic success than introverts, and it is speculated that this is largely because extraverts prefer to invest more time socializing as opposed to studying (Chamorro-Premuzic, Furnham & Ackerman, 2006), (Eysenck, 1992) preferring instead to “make use of interpersonal relationships and personal information of individuals rather than technical analysis” (Ibrahimoglu, Unaldi, Samancioglu and Baglibel, 2013).

In 1966, research on Ghanaian students by Paul Kline was one of the earliest such studies to identify a correlation between poor academic performance and extroversion, and this finding revealed itself again in a subsequent study by Martey and Aborakwa-Larbi (2016) on another cohort of Ghanaian students. Since Kline’s study, the same findings have appeared widespread across different cultures. For instance, a study in Turkey by Ibrahimoglu, Unaldi, Samancioglu and Baglibel (2013) found that extraverts, according to Kolb’s Learning Styles Inventory, tend to favour a diverging and accomodating learning style which favours a more tactile approach to learning- suggesting extraverts prefer a more technical or vocational educational environment. In a Croatian study of 826 high school students, Banai and Perin (2016) not only revealed that extraversion was “negatively related” to academic performance, but was also linked to the type of school (gymnasium or vocational) that the respondents attended. Meanwhile, in the UK, a study by Chamorro-Premuzic, Furnham and Ackerman (2006) involved completion of a 60-item general knowledge test among 201 British university students whose results found that introverts outperformed their counterparts. As far as we have ascertained, there remains little or no research that focuses specifically on extroversion and academic performance in Emirati male students, so this study is one of the earliest- if not the earliest- to explore this subject.

## Method

In the Fall semester of 2015, thirty-three Emirati male students in the Petroleum Institute's Academic Bridge Program (ABP) in Abu Dhabi, the United Arab Emirates, were selected to complete an MBTI Form M in order to identify their personality type on the extraversion-introversion dichotomy. Twenty-three students (70%) typed as extraverts while ten (30%) typed as introverts. This ratio was consistent with previous assessments on the extroversion-introversion scale within the ABP. The data on the students' progression was then gathered in the Spring semester of 2017 by which time students had either passed through the program successfully with a coursework grade of C or higher coupled with and an IELTS overall band of 6, or they had been terminated from the program for excessive absence or not meeting the C grade and IELTS 6 requirements to continue into their degree program. This data was then analyzed in the context of the extraversion-introversion dichotomy.

## Results

At the end of the Spring 2017 semester, all thirty-three students who had begun their studies in the Fall semester of 2015 had exited the ABP through termination, withdrawal or had met the requirements to undertake freshman studies at the Petroleum Institute. Figure 2 shows that 35% of the extravert cohort continued their studies in freshman year while Figure 3 shows 60% of introverts were successful in reaching the same stage.

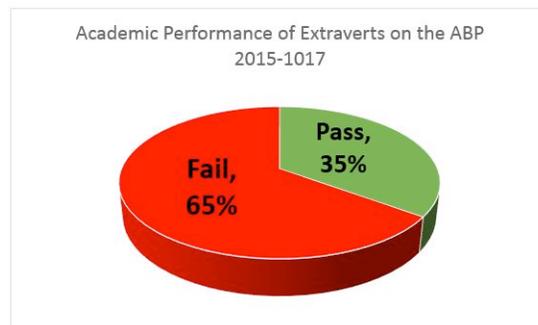


Figure 2: Academic Performance of Extraverts on the ABP 2015-1017

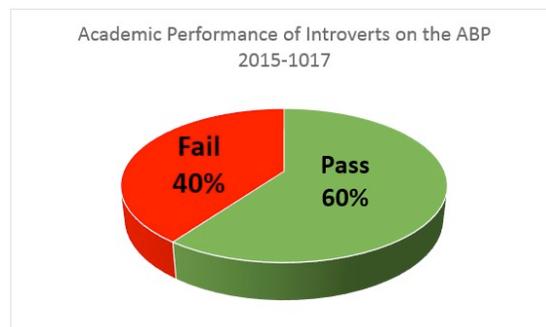


Figure 3: Academic Performance of Introverts on the ABP 2015-1017

## Discussion

This small-scale, longitudinal research project supports the findings of previous research highlighting the disparity in academic performance on the extroversion-introversion dichotomy. University, like high school, requires spending hours alone reading, taking notes, preparing for lessons, reviewing material etc., which is largely the realm of the introvert. Moreover, unlike the high school environment where socializing and self-image are predominant and influential among teenagers, the university environment is one that encourages scholars to take responsibility for their learning as well as prioritizing and contributing to the successful completion of their learning outcomes. Understandably, in a context such as this extravert students may interpret this environment as one lacking in social engagement and may also interpret periods of silence from their peers as a rejection. Consequently, they would view this kind of environment as one challenging their academic goals and lacking in the energizing activities they need in order to function at their best. Given what we know about extraverts' preference for oral interaction, social engagement and breadth (as opposed to depth) of interest in topics, it would be beneficial to deliver lessons involving discussion and group work, hands-on tasks, team projects and presentations as a way to mitigate student attrition during the first years of university when drop-out rates are at their highest. The implications of failure on an extravert student are also more likely to resonate with a teacher and/or his/her peers as extraverts are more likely to blame others for their shortcomings (Briggs-Myers, McCaulley, Quenk & Hammer, 2009). Extraverts need to discuss concepts and if they are not offered a platform, such as office hours and study groups to do this, it will only amplify the isolation they feel in an academic context. For example, extraverts are less likely to prefer written feedback on a paper, but more likely to want to discuss a grade face-to-face with an instructor. Conversely, because introverts tend to be more reflective of their inner-world, they prefer to think more deeply before they act and tend to be more intra-punitive.

In light of this discussion, the limitations of this study need to be considered. Firstly, the sample size of introverts (n=10) was disproportionate to the number of extraverts (n=23), but as mentioned in the introduction, this is anecdotally a representative ratio of individual sections on the ABP. Secondly, a further MBTI questionnaire either in the middle or the end of the study would have consolidated the students' types on the extravert-introvert dichotomy. This is because psychometric tests are not always conclusive in the first instance and may require several attempts before participants can be classified as extraverts or introverts.

## Conclusion

As a result of their academic and professional experience, teachers are able to switch more easily between extravert and introvert facets. However, it must be remembered that young adult students are likely to experience more difficulty adapting to this sudden change and the expectation that they must function well both as extraverts and introverts in order to succeed academically. While the extravert who is unaware of the need to cultivate facets of introversion (i.e. the ability to reflect and feel at ease with solitude)

which are conducive to academic success, may indeed struggle, it must be remembered that there are other factors that serve as effective predictors of academic success, namely IQ, type of school attended and deep learning strategies.

Probably the best approach educators can offer their students is to regularly raise their awareness of the extroversion-introversion theory so they understand that in order to achieve academic success, the weaknesses posed by their opposing facets will need addressing as they progress through university and into professional life. Awareness of the theory also helps students to gain a better understanding of each other and put perceived weaknesses and differences down to human nature rather than a lack of intelligence or a weak, ineffective personality. In terms of lesson planning for teachers, telling the class beforehand what the session involves within a time scale, whether a lecture, tutorial or workshop, will also help address their learning preferences so they can prepare to make the necessary cognitive adjustments. For example, if the lesson heavily involves the receptive skills of listening and reading, teachers could tell the class that a discussion will follow after twenty minutes. This will not only benefit the introvert, who we know likes time to reflect before answering, but also the extravert who is energized by oral interaction.

An extraversion-introversion assessment is available at the following link and QR code:

<https://quiz.tryinteract.com/#/59226b3a5684a100112f886a>



### **Acknowledgements**

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## *Exploring Japanese University Students' Perceptions of Peer Feedback in Oral Presentations*

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### **Abstract**

While there are many benefits of using oral presentations in the EFL (English as a Foreign Language) classroom, learner difficulties with making an effective presentation are often addressed in the Japanese EFL context (Brooks & Wilson, 2014). In order to explore an effective way to help improve learners' oral presentations, this study implemented peer feedback in the Japanese EFL classroom. The aim of this study is to investigate how Japanese EFL learners perceive the effectiveness of this activity in improving their oral presentations and discuss how peer feedback can be used in an oral presentation task. A questionnaire, consisting of a five-point Likert scale and open-ended questions, was used to investigate Japanese EFL learners' perceptions of peer feedback in oral presentations. Both quantitative and qualitative approaches were used to examine the data. Participants were 69 Japanese university students who were taking a project-based English class. One week before their final presentations, participants rehearsed their presentations multiple times and, after each rehearsal, they gave feedback on their performance to each other. Results revealed that nearly 90% of participants found that this peer feedback activity was beneficial in improving their final presentations. In particular, the results indicated that not only receiving comments from their peers but also giving comments to their peers plays an important role in helping students gain objectivity, discover their weaknesses, and improve their presentations. Based on these findings, this study discussed how teachers can implement peer feedback in the EFL classroom to help improve students' oral presentations.

Keywords: oral presentations, peer feedback, poster presentations, EFL

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## Introduction

Though past research has shown many benefits of using oral presentations in the EFL (English as a Foreign Language) classroom, learner difficulties with making an effective presentation are often addressed in many Asian countries where the teacher-centered approach has been traditionally adopted (King, 2002). With relatively few opportunities to practice public speaking in school, many university students in Japan also feel nervous and uncomfortable when asked to speak English in front of their peers; and they tend to have limited presentation skills (Brooks & Wilson, 2014; Kawachi, 2012). As some past studies claimed the importance of interaction between learners and obtaining feedback and support from peers in communicative language learning situations like oral presentations (Nguyen, 2013; Otschi & Heffernan, 2008), implementing a classroom activity which involves learner interaction and dialogue seems crucial in helping improve Japanese EFL students' oral presentations. Since students are expected to interact with and effectively communicate their ideas to their peers in an oral presentation task, such classroom activities would have a positive influence on students' learning experience and outcome. This study therefore implemented one such activity, peer feedback, in English classes in a Japanese university in the hope that it would contribute to students' learning and improvement of their oral presentations. This study aims to examine how Japanese university students perceived the effectiveness of this activity in improving their oral presentations and discuss how peer feedback can be used in an oral presentation task. It is hoped that the findings of this study would help provide EFL teachers with an effective way to use peer feedback in an oral presentation task.

## Literature Review

### *Oral presentations in the Japanese EFL context*

Oral presentations are one of the most effective communicative activities widely used in the EFL context which can provide students with a rich experience to interact with their peers in English. As past studies showed, there are a number of benefits of using oral presentations for EFL learners: providing students with an opportunity to use the four language skills in a naturally integrated way (King, 2002); helping students gain confidence in speaking in public (Fujita, Yamagata, & Takenaka, 2009); and increasing students' motivation to study English by giving them an opportunity to teach something to their peers (Brooks & Wilson, 2014).

Despite the numerous benefits, learner difficulties with making an effective presentation have often been addressed in the Japanese educational context. One of the major difficulties Japanese students face is related to speech anxiety. As past studies showed, many Japanese students tend to feel shy and uncomfortable when they are asked to speak English in front of their classmates (Brooks & Wilson, 2014; Kawachi, 2012). As King (2002) pointed out that the lack of experience often produces student stress and nervousness, one of the primary reasons for Japanese students' speech anxiety seems strongly related to the lack of public speaking training in Japanese school education. According to Apple (2011), prior to entering university, most students in Japan have not had enough experience using spoken English or presenting on an academic topic in English. In fact, the survey by Benesse Educational Research and Development Institute (2016) revealed that in 2015, out of

2134 Japanese high school English teachers, only 22% of them answered that they often implement “speech or presentation” in their English lessons. Regarding “discussion” and “debate,” only 7.4% and 4.5% of them chose “often implement” in their lessons, respectively.

The limited experience with presenting and/or sharing their ideas with others in class inevitably leads to students having limited presentation skills, which is another difficulty that Japanese university students tend to encounter in oral presentation tasks. In Japanese EFL classrooms, it is commonly observed that when making a presentation students look down on their notes or PC screen and “read” a memorized speech in a monotonous voice without any intonation, gestures, or interaction with the audience. Therefore, listening to a student “reading” a long, prepared speech, the rest of the class would find it difficult to be awake (Chiu, 2004). According to Dolan (2013), an effective presentation requires “strategic communication in the form of conversation.” In other words, presenters are expected to understand what their audience want/need to know, to carefully plan how to best explain main points, and to share their ideas by connecting with their audience as if they are having a conversation with them. However, with some factors such as Japanese school education being focused on grammar and vocabulary drills for the college entrance examination as well as teachers’ inexperience using the communicative language teaching method, most Japanese students have not learned how to do a presentation in English before university; in fact, many of them have never made any oral presentations in class even in their first language (Brooks & Wilson, 2014). Without enough instruction and training to make a presentation, it seems almost impossible for anyone to be successful in communicating their ideas confidently in public or making their presentation meaningful for the intended audience.

### ***Peer feedback in the EFL context***

In order for such Japanese students to enhance their skills to do a meaningful presentation for their intended audience (i.e. their classmates), peer feedback should play an important role. Peer feedback, which in this paper means a communication process through which learners exchange comments about each other’s work (Liu & Carless, 2006), has been widely adopted particularly in the field of second language (L2) writing, and many studies have demonstrated its benefits for EFL learners: encouraging collaborative learning (Tsui & Ng, 2000); creating an enhanced sense of ownership (Topping, Smith, Swanson, & Elliot, 2000); and helping students gain a sense of audience (Keh, 1990).

Considering the nature of the oral presentation in the EFL context being a student-centered, interactive activity which requires students to communicate their ideas effectively to their peers, obtaining feedback from the peers, not just from the teacher, should also be vital to students’ higher level of learning in this area. According to Dörnyei and Murphey (2003), peers whose social, professional, and/or age levels are close to learners are referred to as “Near Peer Role Model (NPRM)” and it has been found that students can learn and grow up by watching those peers and analyzing and/or modeling their behaviors to improve their skills. In fact, Kawachi (2012), in her study of incorporating student presentations in a Japanese EFL listening course, found the positive impacts of NPRM on the students’ learning: More than 80% of the students in her study found peer feedback useful for making a presentation and nearly

90% of them regarded watching other classmates' presentations as effective for learning about presentations. In addition, some studies showed that peer feedback may provide the presenters with more immediate feedback than instructor's and that peer feedback could give the presenters an effective insight into their performance as students tend to provide the presenters with some hypothetical comments/advice (e.g. "What if you...?"), which could help them have additional group brainstorming (Lax & Fentiman, 2016; Liu & Carless, 2006).

However, despite many possible benefits of employing peer feedback in an oral presentation task, there are still relatively few studies, as compared to L2 writing, which examined how peer feedback can be used to improve students' oral presentations in the Japanese EFL context. In order to better understand the potential benefits of peer feedback, therefore, it is crucial to employ this activity in an oral presentation task and examine whether students find doing peer feedback effective for their learning, and if they do, to further explore exactly what was helpful and beneficial for their learning and improvement. Implementing this classroom activity and examining its effects on learners would help educators have a deeper understanding of its pedagogical possibilities for EFL learners.

### **Purpose of the study**

The purpose of this study is to examine Japanese EFL students' experiences doing peer feedback in oral presentations and discuss how peer feedback can be used in the EFL classrooms to help improve students' oral presentations. In particular, this study aims to explore what kinds of feedback exchange between learners can help make improvements in their oral presentations by examining their perceptions of both giving and receiving feedback.

### **Research Questions**

The main research questions of this study are as follows:

- 1) What kinds of feedback can be generated in a peer feedback activity employed in an oral presentation task?
- 2) How do Japanese EFL learners perceive the effectiveness of "receiving" and "giving" peer feedback in improving their presentations?
- 3) How can teachers implement peer feedback in an oral presentation task in order to support students' learning?

### **Methodology**

#### ***English class***

This study was carried out in a sports and health science department in a private university in western Japan. Students enrolled in this department were required to take a project-based English class in which they were instructed to find their own project topic and do research on the topic throughout the semester (15 weeks). During the semester, two presentations (a mid-term and a final presentation) using PowerPoint slides were assigned as part of the assessments. Namely, they needed to present their research findings and discussions about the topic in English twice a semester in front of the class. These presentations were evaluated based on criteria

such as content, organization, English (vocabulary, grammar, expressions), oral aspects (volume, speed, intonation, stress), physical aspects (attitude, gestures, eye contact), and visual aids (PowerPoint slides).

### ***Participants***

A total of 69 students in the project-based English classes participated in this study in the fall semester, 2016. Though the initial total population of these classes was 80 students, 11 students either were absent or did not complete the survey. This study therefore only used the data collected from 69 students. Participants were all first-year students and were taking the project-based English class in the previous spring semester as well. Therefore, by the fall semester, all students had experienced making a presentation in English at least twice. However, on the basis of the students' reflection papers and the class observation of the mid-term presentations in the fall semester, it was found that many students were still quite hesitant to speak in front of the class and were struggling with communicating their ideas to the audience in English.

### ***Procedure***

In order to help improve the students' final presentations, a rehearsal day was set up one week before the final presentation in the fall semester and a peer feedback activity was implemented. For this activity, a poster presentation style was adopted. Unlike a traditional class-fronted presentation where each presenter gives one presentation to the whole class, a poster presentation allows the presenters to use posters as the main visual aids and present multiple times to different groups as the audience moves around poster to poster (Prichard & Ferreira, 2014). Bayne (2005) claimed that because of the "triangular communication" among presenter, audience, and posters, active audience participation can be facilitated in poster sessions. Some studies also found that in poster presentations presenters' anxiety could be lessened (Prichard & Ferreira, 2014) and that the repetition of a speaking task could lead to increased fluency (Nakamura, 2008). Based on these previous findings a poster presentation style was adopted in the students' rehearsals in this study in the hope that the students would be able to not only practice presenting, but to also learn from watching each other's performance and exchanging meaningful feedback on their presentations. The detailed procedure is as follows:

#### Two weeks before the final presentation (Week 10)

Students were assigned to complete their presentation scripts and PowerPoint slides as homework. They were then instructed to print out each PowerPoint slide in A4 size, tape them together and make one big poster, and bring it to the next class.

#### One week before the final presentation: A rehearsal day (Week 11)

Students were instructed to take the following seven steps to do a rehearsal.

1. Students were divided into three groups (Group A, B, and C), each consisting of approximately 8 to 9 people. Students in Group A first became the "presenters" while students in Group B and C became the "audience." Students in Group A put their PowerPoint slide posters on the wall and stood next to them. Students in Group B and C spread out and sat in front of each presenter to listen.

2. Students in Group A gave a presentation to their audience (2-3 students from Group B and C) for six minutes (i.e. the actual presentation time length), using their posters.
3. After six minutes, two to three minutes were given for a peer feedback activity. The audience gave comments and advice to the presenters on the part that they thought needed improvements (e.g. content, organization, English, oral aspects, physical aspects, visual aids). The presenters were asked to respond to the feedback, ask questions and/or ask for more advice on their presentation.
4. After two to three minutes, the audience moved to the next presenter, clockwise. Students in Group A stayed with their posters and made presentations to the new audience. They repeated this procedure three times.
5. After students in Group A made three presentations to the three different groups, the roles were changed. Students in Group B became the “presenters” and students in Group A and C became the “audience.” The same procedure (1-4) was repeated.
6. After students in Group B made three presentations, the roles were changed. Students in Group C became the “presenters” and students in Group A and B became the “audience.” The same procedure (1-4) was repeated.
7. After every session was over, all students were instructed to consider the feedback they received from their peers and to finalize their final presentation scripts and PowerPoint slides by their final presentation day.

#### On the final presentation day (Week 12 - 14)

Each student made a six-minute long final presentation in front of the class, showing their PowerPoint slideshows on a projector.

#### ***Data collection***

On the last day of the fall semester (Week 15), the students participated in the online questionnaire survey regarding their experience doing the peer feedback activity. The questionnaire consisted of two sections (See Appendix). The first section (Q1-3) dealt with demographic questions. The second section (Q4-11) included eight questions regarding the students’ experience of doing peer feedback and their perceptions of how this activity helped them improve their final presentations. In this section, two questions (Q4, 6) asked about what points students exchanged comments on in the peer feedback activity. Then, three questions (Q5, 8, 9) concerned the students’ perceptions of “receiving” feedback from their peers while the other three questions (Q7, 10, 11) asked about their perceptions of “giving” feedback to their peers. A five-point Likert scale as well as open-ended questions were used for these questions. All questions were written in Japanese as participants’ English levels varied. After the data were collected, the questions and all answers were translated into English by the author.

#### **Results and Discussion**

##### **1) What kinds of feedback can be generated in a peer feedback activity employed in an oral presentation task?**

Table 1 shows the results of Q4 and 6—what points students exchanged feedback on in the peer feedback activity. The results suggested that this activity generated more

feedback on content, oral aspects and visual aids than other aspects. As presenters, many students seemed to gain some insights into their oral aspects (43.5%) and presentation content (42%). As an audience, a number of students focused on presentation content, as nearly 50% of them provided their classmates with feedback on content such as the introduction, body, conclusion, and data and/or examples used in each body. Another aspect that most students focused on as an audience was visual aids, as more than 40% of them gave the presenters comments on how they made/used their visual materials.

Table 1. Students' feedback exchange: Results of Q4 and 6 (n=69)

Feedback on...	Received from classmates (Q4)	Gave to classmates (Q6)
Content	29 (42%)	34 (49.3%)
Organization	16 (23.2%)	13 (18.8%)
English (vocabulary, grammar, expressions)	20 (29%)	15 (21.7%)
Oral aspects (volume, speed, intonation, stress)	30 (43.5%)	26 (37.7%)
Physical aspects (attitude, gestures, eye contact)	17 (24.6%)	15 (21.7%)
Visual aids (PowerPoint slides)	24 (34.8%)	29 (42%)
Other	0 (0.0%)	1 (1.4%)

(Note: More than one answer was allowed.)

## 2) How do Japanese EFL learners perceive the effectiveness of “receiving” and “giving” peer feedback in improving their presentations?

### *Students' perceptions of “receiving” feedback*

Tables 2 to 4 and Figure 1 below show the results of students' perceptions of “receiving” feedback from their classmates (Q5, 8, 9). Table 2 presents the descriptive statistics for the students' perceptions of receiving feedback (Q5). Table 3 shows the number of students who chose each answer on the five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree), as a percentage. The total percentages of the respondents who disagreed (1 and 2) and agreed (4 and 5) are also shown in the columns Disagree and Agree. Figure 1 shows the results of Q8—whether students found receiving feedback in this way helped them improve the overall quality of their final presentations. Lastly, the reasons for students' answers for Q8 are shown in Table 4 (Q9).

Table 2. Descriptive Statistics (Q5):  
Students' perceptions of *receiving feedback* from classmates

No.	Question	<i>n</i>	<i>M</i>	<i>SD</i>
1)	It helped me improve my presentation content.	69	3.72	0.95
2)	It helped me improve the organization of my presentation.	69	3.59	0.88
3)	It helped me improve my presentation script (i.e. English vocabulary, grammar, expressions).	69	3.68	1.01
4)	It helped me improve my oral aspects (i.e. volume, speed, intonation, stress).	69	3.93	0.96
5)	It helped me improve my physical aspects (i.e. attitude, gestures, eye contact).	69	3.71	0.97
6)	It helped me improve my visual aids (i.e. PowerPoint slides).	69	3.90	0.93

Note: 1= strongly disagree, 2=disagree, 3=neither agree nor disagree, 4=agree, 5=strongly agree

Table 3. Frequency of Response (%) (Q5):  
Students' perceptions of *receiving feedback* from classmates (*n*=69)

Question	1	2	3	4	5	Disagree	Agree
1) Content	4.3	5.8	18.8	55.1	15.9	10.1	71
2) Organization	2.9	7.2	27.5	52.2	10.1	10.1	62.3
3) Presentation script (English vocabulary, grammar, expressions)	2.9	8.7	27.5	39.1	21.7	11.6	60.8
4) Oral aspects (volume, speed, intonation, stress)	4.3	2.9	14.5	52.2	26.1	7.2	78.3
5) Physical aspects (attitude, gestures, eye contact)	4.3	5.8	21.7	50.7	17.4	10.1	68.1
6) Visual aids (PowerPoint slides)	2.9	2.9	21.7	46.4	26.1	5.8	72.5

Note: 1= strongly disagree, 2=disagree, 3=neither agree nor disagree, 4=agree, 5=strongly agree

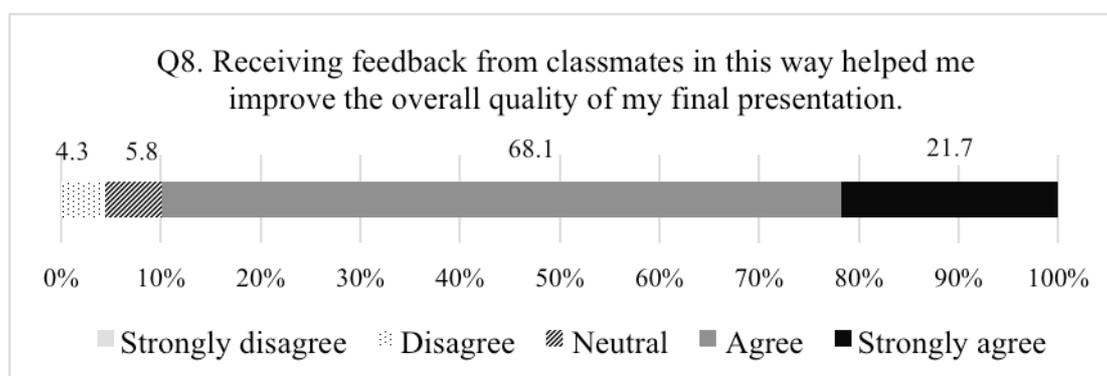


Figure 1. Results of Q8 (*n*=69)

Table 4. Results of Q9: Reasons for Q8 - Receiving feedback (n=69)

Positive comments	%
I could notice/learn my weakness.	39.1%
I could make my presentation better.	23.2%
Getting objective opinions from classmates was important.	13.0%
It was useful to have an audience at a rehearsal and receive immediate feedback from them.	11.6%
Getting feedback from friends was useful.	2.9%
I gained confidence by asking for advice on my presentation.	1.4%
Other	7.2%
Negative comments	%
The quality of my final presentation did not change.	1.4%
I did not care about the feedback much.	1.4%
The feedback I received was not very convincing.	1.4%
I think the teacher's opinion matters more.	1.4%
I could not make use of my friends' opinions.	1.4%
Other	2.9%

As Figure 1 revealed, we can see that nearly 90% of the students showed positive perceptions of receiving feedback in improving their final presentations. As Table 1 above showed, the aspect that students received the most feedback on was oral aspects (43.5%) followed by content (42%) and visual aids (34.8%). These were also the aspects that students felt improved in their own presentations through receiving feedback as shown in Table 3 (oral aspects: 78.3%, visual aids: 72.5%, content: 71%). These results indicate that students in this study tended to make use of the feedback they received from classmates, which suggests that many of them valued opinions from their peers. In fact, as those who felt benefitted from receiving feedback wrote (Table 4), students found getting feedback from classmates meaningful because they could learn their weakness, the part that required further improvements, and receive objective opinions that they could not have gained had they not had this opportunity. Some also valued having an audience in front of them and getting immediate feedback.

However, it is also important to note some of the issues expressed in the students' responses. As Table 4 showed, some students did not think that they had meaningful feedback and that some felt the teacher's views were more important. Some also showed their lack of confidence in making use of the feedback they received from classmates.

### ***Students' perceptions of "giving" feedback***

Below are the results of students' perceptions of "giving" feedback to their classmates (Q7, 10, 11). Table 5 shows the descriptive statistics for the students' perceptions of giving feedback (Q7). In Table 6, the number of students who chose each answer on the five-point Likert scale as a percentage is shown. Figure 2 shows students' perceptions of the effectiveness of giving feedback in improving the overall quality of their final presentations (Q10). Their reasons for Q10 are shown in Table 7 (Q11).

Table 5. Descriptive Statistics (Q7):  
Students' perceptions of *giving feedback* to classmates

No.	Question	<i>n</i>	<i>M</i>	<i>SD</i>
1)	It helped me improve my presentation content.	69	3.57	0.85
2)	It helped me improve the organization of my presentation.	69	3.51	0.90
3)	It helped me improve my presentation script (i.e. English vocabulary, grammar, expressions).	69	3.49	0.95
4)	It helped me improve my oral aspects (i.e. volume, speed, intonation, stress).	69	3.84	0.88
5)	It helped me improve my physical aspects (i.e. attitude, gestures, eye contact).	69	3.74	0.89
6)	It helped me improve my visual aids (i.e. PowerPoint slides).	69	3.86	0.79

Note: 1= strongly disagree, 2=disagree, 3=neither agree nor disagree, 4=agree, 5=strongly agree

Table 6. Frequency of Response (%) (Q7):  
Students' perceptions of *giving feedback* to classmates (*n*=69)

Question	1	2	3	4	5	Disagree	Agree
1) Content	1.4	11.6	23.2	56.5	7.2	13	63.7
2) Organization	1.4	15.9	20.3	55.1	7.2	17.3	62.3
3) Presentation script (English vocabulary, grammar, expressions)	1.4	14.5	30.4	40.6	13	15.9	53.6
4) Oral aspects (volume, speed, intonation, stress)	2.9	4.3	17.4	56.5	18.8	7.2	75.3
5) Physical aspects (attitude, gestures, eye contact)	2.9	5.8	20.3	56.5	14.5	8.7	71
6) Visual aids (PowerPoint slides)	1.4	2.9	21.7	56.5	17.4	4.3	73.9

Note: 1= strongly disagree, 2=disagree, 3=neither agree nor disagree, 4=agree, 5=strongly agree

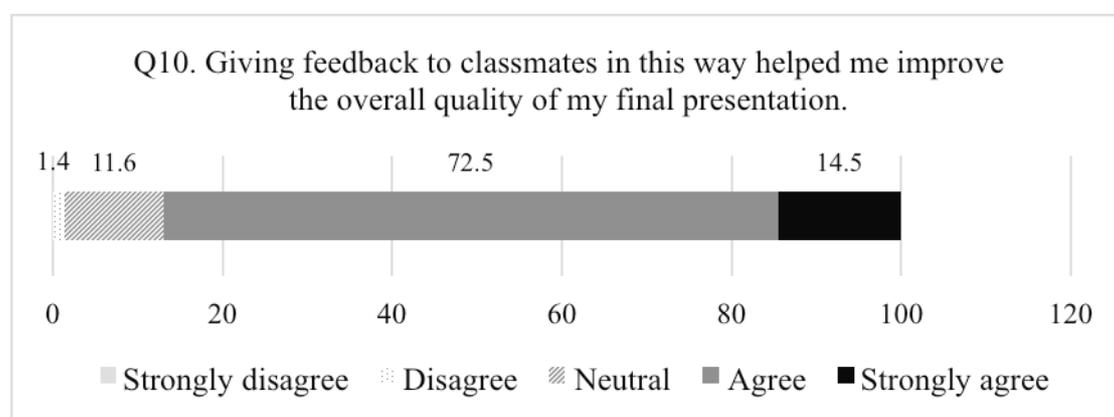


Figure 2. Results of Q10 (*n*=69)

Table 7. Results of Q11: Reasons for Q10 - Giving feedback ( $n=69$ )

Positive comments	%
I could also make my presentation better.	34.8%
I could also notice/learn my weakness.	29.0%
I learned to see things objectively.	11.6%
Giving feedback raised my motivation to present better.	2.9%
Other	13.0%
Negative comments	%
I did not think of relating my feedback to my own presentation.	2.9%
I could not give many comments or much advice.	1.4%
Giving feedback did not influence my presentation much.	1.4%
I was not sure if my feedback was correct.	1.4%
I mainly asked questions instead of giving feedback.	1.4%
I am not sure if my presentation improved.	1.4%
Other	2.9%

As Figure 2 showed, the majority of the students (87%) found giving feedback was beneficial to improving their final presentations. According to Table 6, oral aspects (75.3%), visual aids (73.9%) and physical aspects (71%) were the areas where a number of students felt they improved in their own presentations through giving feedback. Among them, oral aspects and visual aids were also the aspects that students often discussed in peer feedback processes as an audience. These results therefore suggest that students in this study tended to not only give feedback but also make use of those comments/advice they provided to make further improvements in their own performance. In fact, we can see from Tables 4 and 7 that more students found that their final presentations improved by giving feedback to their classmates (34.8%) than receiving feedback (23.2%). This finding can be partly explained by the fact that some students (11.6%) in fact learned to see things objectively through giving feedback (Table 7) while none mentioned it when asked about receiving feedback (Table 4). In addition, by giving feedback to others some found that they could also discover their own weakness. As Tsui and Ng (2000) argued, awareness raising can also be achieved through giving feedback to peers. These results therefore suggest that being an audience and trying to point out the parts that need improvements in classmates' presentations may have helped students see their own projects objectively, which possibly led them to find their own weak points and make meaningful changes afterwards.

However, some students also expressed their concerns about giving feedback to others. For example, some students showed their lack of confidence in giving meaningful feedback and some did not know how to make use of this experience to improve their own presentations.

### **3) How can teachers implement peer feedback in an oral presentation task in order to support students' learning?**

The findings of this study above revealed some potential benefits as well as difficulties associated with employing peer feedback in oral presentations in L2 contexts. In order to ensure that students benefit from this activity, there are mainly four implications for teachers.

Firstly, it is beneficial for teachers to provide students with specific feedback points prior to peer feedback processes. In this study, students tended to make use of the comments and advice they exchanged in improving their final presentations. In other words, both as a feedback giver and receiver, they valued what they discussed with their classmates during the peer feedback activity. According to Tsui and Ng (2000), there are certain roles that peer feedback has (e.g. enhancing a sense of audience, raising students' awareness of the strengths and weaknesses of their own work, encouraging collaborative learning, and fostering the ownership of text), which may not be fulfilled by teacher feedback. Students may not be able to gain important insights into their own work and improve their skills if they do not have peer critiques. Thus, it is important for teachers to help facilitate students' active participation in providing feedback and to ensure that they provide high quality feedback. One way to do so is to give students specific feedback points. As previous studies pointed out (Lax & Fentiman, 2016), some students may end up giving nonspecific comments such as "good" or "bad" if they do not know specifically where to look at and what to address in classmates' presentations. Thus, it is important that teachers prepare some feedback points that students need to address in feedback processes and encourage them to discuss those specific items in a peer feedback activity.

Secondly, teachers should consider adopting a poster presentation style when implementing peer feedback in oral presentations. One benefit of using this type of presentation is that as compared to class-fronted presentations they help create an intimate learning environment where students can feel less pressured to present and more relaxed to interact with each other (Prichard & Ferreira, 2014; Tanner & Chapman, 2012). Since students can have a small audience, practice presenting multiple times, and interact with more classmates, the use of poster presentations could particularly benefit the learners with insufficient experience presenting in public or critiquing other's work. In fact, though most students in this study had difficulty speaking in public prior to this rehearsal, many of them seemed to enjoy presenting and exchanging comments in this way as the classroom was filled with a lot of conversations. The majority of them also felt that their performance improved through exchanging comments in this activity (Figures 1 and 2). Poster presentations can be an effective learning tool, which could encourage students to practice presenting and foster their collaborative learning.

Another benefit of using poster presentations is that they could facilitate students' group discussion on content, visual aids, and oral or physical aspects—the areas that play important roles in oral presentations. In fact, students in this study talked about these areas during peer feedback processes, and it benefitted many of them (Tables 1, 3, 6). Though getting feedback on language use (e.g. grammar and vocabulary) is important, students also need to receive feedback on content as well as other nonverbal aspects in oral presentation tasks because an effective presentation requires presenters to effectively share their ideas with an audience (Dolan, 2013). If teachers have students just sit and check each other's presentation script or slides on a PC, it could be difficult to draw students' attentions to these areas. The use of poster presentations should be beneficial in this sense, and furthermore, it could also benefit other students in the same group.

Thirdly, when implementing peer feedback, providing students with alternative forms of feedback should also be considered. In this study, some students showed some

distrust in their classmates' feedback and valued teacher's comments. Previous studies confirmed this finding. Particularly in teacher-centered cultures, students tend to feel less willing to accept peer feedback and prefer to have feedback from teachers who have more experience, knowledge, and skills (Nelson & Carson, 1998; Tsui & Ng, 2000; Zhang, 1995). In addition, some studies highlighted that in some cultures such as the ones which value group harmony, it could be difficult for students to give honest criticisms to their classmates directly (Carson & Nelson, 1996; Károly, 2015; Wang & Wu, 2008). Considering such different cultural traits, the combination of peer feedback and other types of feedback (e.g. teacher feedback, written peer feedback, anonymous feedback) might benefit more students. In fact, students in Hong Kong and Taiwan valued peer feedback when they were also given teacher's feedback (Jacobs, Curtis, Braine, & Huang, 1998). Other studies also found that while oral peer feedback was generally preferred, written peer feedback was more preferred by some students particularly when it included negative criticisms (Károly, 2015).

Lastly, adequate training should be given to students prior to a peer feedback activity to increase the quality of feedback. Confirming the findings of previous studies on Japanese students' peer feedback experiences (Coomber & Silver, 2010; Morgan, Fuisting, & White, 2014), some students in this study also expressed their lack of confidence in giving feedback and some could not provide much advice. However, considering the results that more students could improve their presentations by giving rather than just receiving feedback, teachers should encourage students to give feedback. As some studies on peer feedback in L2 writing claimed, sufficient training prior to peer feedback processes can be beneficial as it could help students value peer feedback (Morra & Romano, 2008) and lead to a higher quality of their work (Berg, 1999).

## **Conclusion**

This study aimed to examine Japanese EFL learners' perceptions of peer feedback and discuss how peer feedback can be used to improve their oral presentations. The results showed that as this activity helped students discover their weakness and gain objectivity, many students generally perceived both receiving and giving feedback as beneficial to improving the overall quality of their presentations. In particular, most students felt that through this activity they could improve their oral aspects and visual aids—the areas which play important roles in making an effective presentation. However, some critical issues were also found: students' distrust in classmates' feedback, preference for teacher feedback, and lack of confidence in providing feedback. Based on these findings, this study made the following four suggestions in the hope that they would help teachers effectively implement peer feedback in oral presentations in L2 contexts: providing students with specific feedback points prior to peer feedback processes; employing poster presentations; considering the combination of peer feedback and alternative forms of feedback; and giving students sufficient training in doing peer feedback.

Though this study aimed to explore students' perceptions of peer feedback, there are several limitations. One of them is the instrument used in this study. In order to have a deeper understanding of students' perceptions, not only a questionnaire but also other types of instruments, such as a focus group interview, should be included.

Another limitation is that this study examined only one type of feedback (i.e. oral feedback). As each type of feedback has different advantages (Keh, 1990), exploring different types of feedback (e.g. written feedback, teacher feedback) should enable us to further investigate the effective feedback processes in oral presentations. The last one is the setting. This study discussed the use of peer feedback only in project-based English classes where students mainly studied how to make their own projects in English. Thus, the implications of this study may not be applicable to other types of English classes which have different learning focuses.

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## Appendix

### Questionnaire (English version)

Q1. What is your gender?

1. Male, 2. Female

Q2. Do you like English?

1. Not at all, 2. Not really, 3. So-so, 4. Quite a lot, 5. Very much

Q3. Please tell us your TOEIC score.

Q4. In the peer feedback activity, on what aspects did you receive feedback from your classmates? (You can choose more than one answer.)

1. Content, 2. Organization, 3. English (vocabulary, grammar, expressions), 4. Oral aspects (volume, speed, intonation, stress), 5. Physical aspects (attitude, gestures, eye contact), 6. Visual aids (PowerPoint slides)

Q5. Do you think that receiving feedback from your classmates helped you improve the following aspects of your final presentation? Please select the answer that best represents your feelings about the usefulness of “receiving” feedback from your classmates.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
It helped me improve my presentation content.	<input type="radio"/>				
It helped me improve the organization of my presentation.	<input type="radio"/>				
It helped me improve my presentation script (i.e. English vocabulary, grammar, expressions).	<input type="radio"/>				
It helped me improve my oral aspects (i.e. volume, speed, intonation, stress).	<input type="radio"/>				
It helped me improve my physical aspects (i.e. attitude, gestures, eye contact).	<input type="radio"/>				
It helped me improve my visual aids (i.e. PowerPoint slides).	<input type="radio"/>				

Q6. In the peer feedback activity, on what aspects did you give feedback to your classmates? (You can choose more than one answer.)

1. Content, 2. Organization, 3. English (vocabulary, grammar, expressions), 4. Oral aspects (volume, speed, intonation, stress), 5. Physical aspects (attitude, gestures, eye contact), 6. Visual aids (PowerPoint slides)

Q7. Do you think that giving feedback to your classmates helped you improve the following aspects of your final presentation? Please select the answer that best represents your feelings about the usefulness of “giving” feedback to your classmates.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
It helped me improve my presentation content.	<input type="radio"/>				
It helped me improve the organization of my presentation.	<input type="radio"/>				
It helped me improve my presentation script (i.e. English vocabulary, grammar, expressions).	<input type="radio"/>				
It helped me improve my oral aspects (i.e. volume, speed, intonation, stress).	<input type="radio"/>				
It helped me improve my physical aspects (i.e. attitude, gestures, eye contact).	<input type="radio"/>				
It helped me improve my visual aids (i.e. PowerPoint slides).	<input type="radio"/>				

Q8. Do you think that “receiving” feedback from your classmates in this way helped you improve the overall quality of your final presentation?

1. Strongly disagree, 2. Disagree, 3. Neutral, 4. Agree, 5. Strongly agree

Q9. Please tell us your reason for Q8.

Q10. Do you think that “giving” feedback to your classmates in this way helped you improve the overall quality of your final presentation?

1. Strongly disagree, 2. Disagree, 3. Neutral, 4. Agree, 5. Strongly agree

Q11. Please tell us your reason for Q10.



## ***The Diversity Experienced by Left-Handers: Reports of Five Different Generations***

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### **Abstract**

This research aimed to understand how people experience the condition of being left-handed. It was possible to locate the difficulties faced by this group, the advantages of being left-handed, discussing the significance of this difference, and the myths and prejudices faced throughout their lives. A theoretical study was conducted to clarify the concept of, left-handed throughout history and conceptions about this condition. We worked with non-directive interviews, focusing on the life stories in the pursuit of understanding the constitution of the person. Five women between 23 and 82 years old, represented different generations, which allowed us to identify changes in how school and society realized and acted in relation to the left-handed. The data demonstrate varied experiences, with cases of repression of handedness by family and school, and others in which there was no objection. Difficulties remained in the material aspect, such as using scissors and desks, for example. Common form, found that this difference reaches a minority group, even if it involves some difficulties, is not a negative experience. We found that the left-handed accepts and is pleased with his condition, he feels that belongs to a group in which people recognize and value, and although throughout history left-handedness has been considered something allied to evil and negative, today there is a new look. The left-handed like to be different, to stand out among the rest.

Keywords: handedness, left-handedness, school and family.

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## Introduction

The term lefthanded decades ago was related to the sinister, evil, dark and forbidden. It was as if being left-handed was a disgrace, a catastrophe, or even a criminal act. Today society understands the left-handed person as someone who prefers or is more skilled with the left side of the body, which does not necessarily imply a disadvantage or maladjustment to the most diverse environments and activities.

There are many discussions about the issue of laterality. There are two major strands that try to explain it. One of them understands that laterality is essentially biological and another attribute this aspect to the interaction of the organism with the environment. We understand that the latter are in constant interaction and need to be seen as a whole.

When we conducted some interviews with left-handers, we could see that the use of the left side has a biological determination, that is, there is a tendency for such use, but there is also an influence of the environment. In fact, two of the respondent underwent significant interventions, to the extent that their "biological" tendencies were modified by the school and / or the family.

We understand that both the primary social group (family) and secondary (school) are important roles for the conduction of lefthandedness. It is the function of these places and their human resources to help the children in their development, respecting their being.

The left-handed child differs little from the right-hand child. The main aspect that makes this condition special is the difficulty of handling some unadapted objects. It is necessary to provide a pair of left-handed scissors so that they do not suffer and work hard to carry out the tasks of everyday school. No less important is the school desk. To avoid the student having to squirm to study, the proper desk is extremely relevant. But is that all that changes? Does it mean that if we buy the materials, everything is quiet? And are not left-handed people any smarter? More artistic?

There are still so many statements that people hear about the lefthanded. I remember several situations in which I received a tremendous amount of assumptions about my condition. Some are positive, like having beautiful handwriting or being smart; others not so much, that we are all clumsy and distracted.

In doing this study, we learn from people's speech very rich aspects about what is to experience lefthandedness. As we chose to do so with subjects from different generations, we were able to follow the social and cultural aspects of each age and understand the relevance of the environment for the formation of the left-handed citizen.

## Conclusions

Left-handedness is identified as the preference or greater performance with the left side of the body, being it with the hand, legs or even the ocular laterality. There are people who have homogeneous laterality, that is, they are totally left-handed or right-handed; others may present a partial laterality, in which they perform different

activities, in different ways, that is, in some situations they use the right side, in others the left side; there is also contradicted laterality when there is interference in the "natural" tendency.

Left-handedness is not just a biological issue. Although we believe that we are born with a tendency, it is in the environment and in social interactions that we will define ourselves more precisely as left-handed or right-handed. In this research, we perceive the strong influence of the family and the school so that laterality manifests concretely.

In addition to a biological and a social aspect, there is in left handedness a fact that stands out: the identification of left-handed people with this condition and with the group of people who share the same characteristic. We have seen that lefties are proud to be like this, they like to be different.

We can see that although there are some difficulties for this group, especially with the use of scissors, the school wallet, can opener and other materials, there are many ways to overcome them. Whether you are using adapted materials, learning to do it your way or even with your right hand.

We also note that when there is a difficulty of another nature in the life of the left-handed person, it overlaps. We can infer that the difficulties of being left-handed compared to the disorders that a more serious obstacle brings, becomes an irrelevant condition.

Some families were responsible for encouraging or repressing their children to follow this "natural" trend. We heard stories of family members who did not allow the left hand to be used in any way. In counterpoint, we also heard cases of help and support from the mother so that the person had the best possible experience as left-handed.

In the educational spaces it was no different. We noticed the posture of some teachers, who were encouraging, and others, especially those related to sports, indifferent to the condition of their students, did not contribute to their development as left-handed athletes. We also found in one of the statements of our interviewees, a student of a religious college in the 1930s, the total prohibition of the use of the left hand by the nuns. Without possibility that it was different, it followed thus, to the point of being considered left-handed, but considered as a right-hand person.

We can also find different positions in society as a whole. In past times, left handedness has been associated with the devil, evil, dark side and the negative. It was forbidden and a taboo to be left-handed. Over the years, these concepts have undergone changes, and nowadays, left-handed people rarely face this type of prejudice. At most, it occurs on the part of older people or as a joke. However, these myths built historically have left their remnants.

This is strongly noticed in our language. Entering someone's home on the right foot indicates luck here in Brazil. Waking up with the left foot is the justification for a bad day. Just to mention two simple examples.

Although there are these myths, there are others neither so negative, or rather, very positive, that are part of everyday life: that the lefties are smarter, have the most beautiful handwriting, are good in sports. None of this is scientifically proven, but it is part of the symbolic universe of many social groups.

Nowadays left-handers seem to forget these past prejudices and care more about not being the same as most, standing out in front of so many similar people in this world, as if it were good to be different today. We find this aspect in the speech of all the subjects interviewed.

Although currently being left-handed is not a problem, it is necessary that educational spaces are prepared to receive them. We note the lefties complaint of the lack of left-handed school desks in classrooms. It is very important that this right is respected.

In families, a special look is necessary when the child begins to give the first indications of his laterality. Leave the objects in the center, so she chooses which hand to pick, and does not specifically point her to one side or the other. Allow the person to manifest freely in their uniqueness.

Each person is constituted in a unique way, through the experiences he or she has, of the people with whom he or she establishes meaningful relationships. To be able to present, in this research, a little of the reality of the lefthanded and its constitution was a pleasure. Knowing that this group of people is happy with their condition and feel prestigious in sharing their experiences was enlightening. We hope that looking at the left-handed person is always careful, because although they like to be as they are, there is no denying that they are different.

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***Is There still a Gender Myth: Science Fields for Boys and Humanities for Girls?***

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**Abstract**

MEXT, Japan (2006 and 2016) reported the numbers of university students' enrollments. In the area of Electric Communication Engineering, in particular, there are almost 16 times more men (132,404) than women (8152). In 2016, there are 10 times more men (103,476) than women (9546). The authors of this study, however, believe that gender preference of choosing a study area does not mean that either men or women are good at one particular study area. Thus, this study aims to examine, in particular, whether there are some gender trends about the electric communication engineering area. The authors of this study set out two research questions. The first question is whether there are any gender similarities and/or differences about using online course tools among university students. The second question is if there are any gender similarities and/or differences, what they are. This study firstly uses a questionnaire to see students' insights towards using online course tools for their English classes. Secondly, this study sees the actual use of online course tools by counting numbers of students who accessed the tools in our English classes. The questionnaire results reveal that women in this study did not tend to have negative attitudes towards using their Personal Computer (PC). The numbers of actual access to online course tools reveal that women accessed (M=1066) more than men (M=838.2). These results suggest that the traditional gender stereotype has been changing.

Keywords: gender stereotype, higher education, online course tools

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## Introduction

According to the encyclopedia of contemporary words (2015), the term “rikejyo” is an abbreviation of “rikei jyoshi”. It means female science students in Japan. It is believed that “rikejyo” appears to encourage women to get involved in science fields more than ever. Japan Cabinet Office (2013) promotes the term “rikejyo” in order to increase population of female scientists who actively work in the science fields. Under the Science and Technology Policy in 2011 by Council for Science, Technology and Innovation, the Japanese government targets 30% of female scientists who will be working in human science areas by 2016. In universities in Japan, science fields are still popular for men while the humanities are popular for women (MEXT, 2016). The data by the Ministry of Education, Culture, Sports, Science and Technology, Japan (MEXT: 2006 and 2016) still suggests that a gender stereotype about choosing study areas exists. Men tend to study science fields while women tend to study humanities. However, the authors of this study do not particularly see the gender stereotype in their English classes. This study, thus, explores whether the gender stereotype still exists or not. In particular, this study examines whether there are any gender differences of using online course tools in English classes or not. The authors of this study use questionnaires to see the participants’ insights towards using online course tools and count the actual use of online course tools accessed by the Japanese university students.

## Literature review

### Social psychological perspective

Studies in gender stereotypes about men’s favor in science subjects and women’s favor in arts subjects have been researched for some decades.

In psychology, gender stereotypes are examined by using “stereotype threat.”

It is conceived as a state of psychological discomfort that, if sufficiently acute, can impair performance. It is thought to arise when students are confronted with an evaluative situation, in which a stereotype regarding a particular ability is relevant. For example, stereotype threat may occur when a woman who is aware of that women are considered inferior to men at math is confronted with a mathematics test.

(Appel, Kronberger and Aronson, 2011:904).

Beilock et al. (2010) find that school girls, who believed the traditional gender stereotype that girls are good at reading while boys are good at math, achieved lower math performance at the end of the school year. Also teachers’ math anxiety influences students’ math academic performance. Beilock et al. (2010) explain that there are more female teachers in general at schools and female teachers tend to have math anxiety. School children are exposed to these female teachers through their academic year and therefore, girls in particular are affected by their female school teachers’ math anxiety. Because of this, girls perform lower achievements on math than boys do. Keifer and Sekaquapewa (2007) also explain the influence of gender stereotype threat on the math test. They find that when the gender stereotype threat,

that women have a less mathematical ability than men, was reduced, the less women possessed the gender stereotype, the better they performed on the math test. Schmader (2002) finds that when gender identity was linked to test performance, female participants in his study scored lower on the math test than men did. However, when women in the study did not link gender identity to test performance, both women and men in his study equally performed on the math test. Johns, Schmader, and Martens (2005) also point out the effect of the stereotype threat. In their study, when women in their study strongly believed the gender stereotype, women's inferiority in math, the women performed worse on the math test than men did.

### **Social role perspective**

As opposed to psychology, sociologists tend to see gender stereotype as a result of social expectation by the society which both men and women belong to. For instance, Ecklund, Lincoln and Tansey (2012) explain that although the perception of occupational gender stereotypes has been changing over time, it still exists such as the notion that some jobs are more appropriate for men or women only. For instance, Ecklund et al (2012) explain that women leave physics because some do not want to sacrifice family duties and thus, they choose other fields which are more flexible for family duties than physics. Becker (2010) finds that young women in Germany tend to feel less convinced of succeeding in engineering field even though they have good grades in engineering subjects. In addition, although they are not afraid of being a minority as being engineers, they are afraid of discrimination because of being engineers. Preckel et al. (2008) point out the effect of gender social role in girls' math performance. In their study, girls performed lower on the math test than boys did. They concluded that gender social roles were influenced by their results that girls performed lower than boys did on the math test. Valenduc et al. (2004) point out the expectation by companies towards their employees. In the Information and Communication Technology (ICT) industries, for instance, employees are often expected to work for long hours such as 50 hours per week. Thus, women are often discriminated since they might need to look after their children or to do households. Instead of women, single men are often favored by these companies.

### **Gender features in Japanese Universities**

Ministry of Education, Culture, Sports, Science and Technology, Japan (MEXT) releases the statistical data about numbers of university enrollments every year. Within a decade between 2006 and 2016 in Japan, the trend of preference of study areas at Japanese universities by gender has not dramatically changed. Both tables 1 and 2 show the data for the numbers of enrollment in Japanese universities by MEXT.

Table 1

2006		2016	
Major study fields Total numbers	Gender & numbers	Major study fields Total numbers	Gender & numbers
Humanities 400,114	Men: 133,769 Women: 266,345	Humanities 366,220	Men: 126,715 Women: 239,505
Social Sciences 925,988	Men: 636,753 Women: 289,235	Social Sciences 829,399	Men: 541,507 Women: 287,892
Science 85,502	Men: 63,844 Women: 21,658	Science 79,290	Men: 57,850 Women: 21,440
Engineering 422,535	Men: 380,816 Women: 44,719	Engineering 384,762	Men: 330,720 Women: 54,042
Art 72,803	Men: 22,334 Women: 50,569	Art 69,691	Men: 20,488 Women: 49,203
Education 144,833	Men: 57,736 Women: 87,097	Education 190,903	Men: 78,201 Women: 112,702

(MEXT: 2006 &amp; 2016)

Table 2

2006		2016	
Macro study fields Total numbers	Gender & numbers	Macro study fields Total numbers	Gender & numbers
Literature 157,825	Men: 43,224 Women: 114,581	Literature 137,749	Men: 40,208 Women: 97,541
Law & Politics 176,825	Men: 122,725 Women: 53,376	Law & Politics 157,851	Men: 107,847 Women: 50,004
Commerce & Economics 506,470	Men: 387,760 Women: 118,710	Commerce & Economics 452,924	Men: 321,554 Women: 131,370
Math 20,473	Men: 16,423 Women: 4050	Math 16,097	Men: 131,123 Women: 2974
Physics 13,797	Men: 12,088 Women: 1709	Physics 12,356	Men: 10,583 Women: 1,773
Chemistry 12,746	Men: 8917 Women: 3829	Chemistry 11,761	Men: 8255 Women: 3506
Electric Communication Engineering 140,556	Men: 132,404 Women: 8152	Electric Communication Engineering 113,022	Men: 103,476 Women: 9546
Home Economics 22,769	Men: 2512 Women: 20,257	Home Economics 20,554	Men: 2094 Women: 18,460

(MEXT: 2006 &amp; 2016)

Both tables show the trend that men tend to study science fields while women tend to study arts fields. For instance, on table 1, there are nearly twice as many women (266,345) enrolled in the humanity area as men (133,769) did in 2006. This trend stays similar in 2016, 239,505 women enrolled in the humanity area while 126,715 men enrolled in it. As for engineering, it is nearly 8.5 times difference between men

and women. 380,816 men enrolled in the engineering field while 44,719 women did in 2006. Numbers decline to nearly 6 times difference between men and women in 2016, where 337,720 men enrolled in engineering while 54,042 women enrolled in the same area.

On table 2, there are some extreme trends between men's enrollment and women's enrollment. In home economics, there are about eight times difference between men (2512 in 2006 and 2094 in 2016) and women (20,257 in 2006 and 18,460 in 2016) in both 2006 and 2016. The authors of this study are particularly interested in the area of Electric Communication Engineering. There are almost 16 times differences in 2006 between men (132,404) and women (8152) and is almost 10 times difference between men (103,476) and women (9546) in 2016.

The authors of this study believe that gender preference of choosing a study area does not mean that either men or women are good at one particular study area. The authors of this study teach English to university students in Japan and they do not particularly realize a big gap of students' English proficiency by gender differences.

As the data of MEXT (2006 and 2016) showed, this study area showed a big gap between male and female students in Japan. The authors of this study encourage their university students to use online course tools for their English classes because they believe online course tools help students' study more efficiently when they are effectively used. Thus, this study aims to examine, in particular, whether there are some gender trends about the electric communication engineering area. The authors of this study set out two research questions below.

1. Are there still any gender similarities and/or differences about using online course tools among university students?
2. If there are any gender similarities and/or differences, what are they?

In order to find the answers to the research questions, this study firstly uses a questionnaire to see students' insights towards using online course tools for their English classes. Secondly, this study sees the actual use of online course tools by counting numbers of access by students who enrolled in our English classes. The authors of this study strongly encourage students to use online course tools for their English learning. Therefore, counting numbers of actual access by students supports the results of the questionnaire to see whether students' thoughts are reflected on their actual behavior towards using online course tools. The English classes which the authors of this study taught were conducted in the Project Based Learning (PBL) style and students conducted mini research throughout the semester. Both writing a final report and giving two presentations on their mini research were part of their assessments towards their final grade.

## **Methodology**

### **Data collection**

All data for this study was collected by the second author of this study. The total of seven English classes (three of the first year students' classes and four of the second year students' classes) were examined for the data collection. In order to collect the data of this study, the authors of this study used a questionnaire for participants and

also counted the numbers of actual access to the online course tool, Manaba+R (here after MR), by the participants. The questionnaire was carried out in July 2016 by the second author of this study to find how the participants used MR and if there were any gender similarities and/or differences in their usage of MR. Since the authors of this study taught students whose English proficiency was very low to very high, all questions were asked in Japanese to make sure that all participants understood each question clearly.

The authors used an online questionnaire instead of a paper-based one because they often encouraged their students to use PCs in their classes and believed that an online questionnaire attracted students to get involved in this study.

As for the coding the numbers of actual access to MR by the participants, the second author of this study checked actual access by her students and checked all of her English classes for this study. Coding the numbers of actual access to MR by students was carried out after the first semester finished in August, 2016. On the instructor's pages of MR, these pages allowed instructors to be able to see the total access by students, by gender and so forth. For this study, the second author in particular checked MR by gender features.

## Participants

For the questionnaire, a total of 161 Japanese university students (both the first and second year) are involved. 101 male students and 60 female students participated. All participants majored in sport and health science in one of the private universities in Kansai region, Japan. All participants in this study were taking their English classes as one of the compulsory subjects for their undergraduate degrees.

## Results

### The results of the questionnaire

Table 3 below shows the results of Q3 (How often did you bring your PC into your class?), Q4 (How often did you use your PC in class?), Q5 (How often did you use Manaba+R through the semester?), and Q6 (Do you think that online course tools like Manaba+R is useful for your study?).

Table 3

Q3: How often did you bring your PC into your class?	
1: Never	
2: Hardly	
3: Sometimes	
4: Almost every time	
5: Every time	
Men: 4.69 (on average)	Women: 4.65 (on average)
Q4: How often did you use your PC in class?	
1: Never	
2: Hardly	
3: Sometimes	

4: Almost every time 5: Every time	
Men: 4.62 (on average)	Women: 4.69 (on average)
Q5: How often did you use Manaba+R through the semester? 1: Never 2: Hardly 3: Sometimes 4: Almost every week 5: Every week	
Men: 4.76 (on average)	Women: 4.85 (on average)
Q6: Do you think that online course tools like Manaba+R are useful for your study? 1: Strongly disagree 2: Disagree 3: Neither agree nor disagree 4: Agree 5: Strongly agree	
Men: 4.4 (on average)	Women: 4.52 (on average)

As the table 3 shows, there is no significant gender difference on questions 3 to 6. Both men and women in this study used almost equally their PCs in their classes. Also both men and women in this study almost equally checked MR for their classes. Overall, on these questions, both men and women in this study showed positive and equal attitudes towards using PC and online course tools.

Table 4

Q7: Which pages on Manaba+R do you often check? 1: Project (homework) 2: Content 3: Board 4: Others	
1: Project (homework)	
Men: 95.30 (%)	Women: 92.60 (%)
2: Content	
Men: 34.12 (%)	Women: 59.26 (%)
3: Board	
Men: 17.65 (%)	Women: 16.67 (%)
4: Others	
Men: 1.18 (%)	Women: 1.85 (%)

Table 4 shows the results of Q7 (Which pages on Manaba+R do you often check?). There are no significant gender differences in the results except one answer. Women in this study seemed to be particularly interested in the Content pages on MR to look at. 59.26% of women in this study chose the answer of the Content pages while 34.12% of men in this study chose this answer.

The Content page was used to support both students' writing and presentations. The second author put mainly some tips of English expressions for making a final paper and oral presentation. For instance,

- ✓ Useful English expressions/phrases for an introduction, each body paragraph, and conclusion.
- ✓ How to prepare for giving presentations
- ✓ Useful English expressions for Question and Answer session for presentations
- ✓ Some examples of the final reports
- ✓ How to make references and citations for the final reports

As for the Board page, it was used for communications between teachers and all students in the same class. On this page, students could post questions about class activities or assignments to their teacher. The teacher tried to answer each question posted on this page so that useful class information could be shared with the entire class. For instance,

- ✓ A student asked for how many slide pages they should do for their presentations → the teacher's answer and the question were shared with other classmates
- ✓ A student asked how to submit homework → the teacher's answer and the question were shared with other classmates
- ✓ A student asked some useful information for making reference lists → the teacher's answer and the question were shared with other classmates

Table 5

Q8: What information on Manaba+R did you find useful for yourself?	
1: Guidelines for assignments	
Men: 87.06 (%)	Women: 85.19 (%)
2: Tips for writing a paper	
Men: 74.12 (%)	Women: 72.22 (%)
3: Useful English expressions	
Men: 51.76 (%)	Women: 57.41 (%)
4: Model paper	
Men: 63.53 (%)	Women: 57.41 (%)
5: Others	
Men: 0	Women: 0

Table 5 shows the results of Q8 (What information on Manaba+R did you find useful for yourself?). There are no significant gender differences on this question. However, as for the answer 4 (model paper), there is a slight gender difference between men and women. 63.53% of men chose this answer while 57.41% of women chose this answer. However, the gap of this answer between men and women is small.

Table 6

Q9: Where do you usually check Manaba+R?	
1: In class	
2: At home	
3: Outside of their English class on campus	
4: On a bus or train	
5: Others	
1: In class	
Men: 12.94 (%)	Women: 9.26 (%)
2: At home	
Men: 57.65 (%)	Women: 72.22 (%)
3: Outside of their English class on campus	
Men: 24.71 (%)	Women: 14.81 (%)
4: On a bus or train	
Men: 3.53 (%)	Women: 3.70 (%)
5: Others	
Men: 0	Women 0

Table 6 shows the results of Q9 (Where do you usually check Manaba+R?). The places where the participants checked MR were different by men and women. 57.65% of men answered that they usually checked MR at home while 72.22% of women chose this answer. Moreover, 24.71% of men answered that they normally checked MR outside of class on campus while 14.81% of women did.

Table 7

Q10: Do you think that online course tools like Manaba+R are useful to communicate with your teacher?	
1: Strongly disagree	
2: Disagree	
3: Neither agree nor disagree	
4: Agree	
5: Strongly agree	
Men: 4.12 (on average)	Women: 4.19 (on average)

Table 7 shows the result of Q10 (Do you think that online course tools like Manaba+R is useful to communicate with your teacher?). There is no significant difference between men and women on this question.

Table 8

The numbers of actual access to Manaba+R		
The numbers of the participants	The numbers of total accesses	Mean
161 (men + women)	148594	922.94
Men: 101	84656	838.18
Women: 60	63938	1065.63

Table 8 shows the actual access to MR by both men and women in this study. It shows that women (M=1065.63) in this study tended to access more than men (M=838.18) did.

## Discussions

The results of this study showed both similarities and differences between men and women in this study. Overall, there are mainly three findings which would help us answer our research questions. Firstly, based on the results of the questionnaire, overall, women in this study did not tend to have negative attitudes towards using both their PCs and the online course tool. In this study, both men and women were strongly encouraged to use both PCs and the online course tool within their English classes. In this environment, they rather tended to have positive attitudes towards using PCs and the online course tool as well as men. On the basis of this result, the data by MEXT (2006 and 2016) shown earlier, the data that men were more enrolled in the area of Electronic Communication Engineering than women, does not necessarily support the idea that women are inferior to men in using PCs or online course tools.

Secondly, there were two interesting results of the questionnaire in this study which were the results of both Q7 (Which pages on Manaba+R do you often check?) and Q9 (Where do you usually check Manaba+R?). As for the results of Q7, women in this study particularly were interested in checking the page of Content on MR. This result suggests that one of the traditional gender stereotypes which is “girls for language” still remains. The Content page includes many tips for improving students’ writing drafts of their final reports and improving their presentation skills. If the students actively make use of this page and use teachers’ tips for their both writing and presentations, the quality of their final reports and presentations will improve. Women in this study tended to show their higher motivation to get better grades than men in this study.

Thirdly, the results of Q9 (Where do you usually check Manaba+R?) are interesting to see. Women in this study preferred to check MR at home while men in this study preferred to do their homework on campus. The results of Q9 in this study are similar to the study by Vekiri and Chronaki (2008). They examined the use of the internet between boys and girls and they found the two important factors which involved the use of the internet for both boys and girls. They found that both parental and peer supports were important for both boys and girls to use the internet. In particular, for boys, friends’ support played an important role. More boys tended to use the internet in public places such as internet cafes than girls did. Also they found that more boys tended to talk about computers with their peers than girls did.

Looking back to the results of Q9 in this study, as for men in this study, they showed the similar results to the study by Vekiri and Chronaki (2008). More men in this study checked MR on campus which was considered as one of the public places than women in this study did. Therefore men in this study were also likely to support each other when they checked MR on campus. On campus, it is the best place for students to study together with their peers.

Although it needs further research, as for women in this study, more women checked MR at home. The authors of this study hypothesize that women in this study could have got support from their parents at home. Vekiri and Chronaki (2008) explained that parental support for the use of the internet was the important factor for boys and girls. More women than men in this study showed that they tended to do their homework at home. They could have more family support by doing homework at home as Vekiri and Chronaki (2008) explained.

As for the results of the actual access to MR, it is also an interesting result to discuss. Women in this study accessed MR more than men in this study. Weiser (2000) found that women tended to use the internet for course information and seeking for help with education while men tended to use it for shopping and listening to audio broadcasts. The results of this study showed similar results to Weiser's study (2000). The online course tool, MR, was used within English classes in this study and women in this study accessed MR more than men did. It suggests that women in this study tended to show their higher motivation to get better scores for the English subject.

### **Implications**

The authors of this study believe the importance of teachers' effort to break the traditional gender stereotype and to encourage women to be involved in science field programs at university level. For instance, Gilbert (1996) found the influence of teachers on students' selections of what subjects they tended to take. The participants of Gilbert's study mentioned that because they liked their teachers who taught the subjects, they took the subject taught by their favorite teacher. Gilbert (1996) suggests that teachers can increase the number of students who choose not only science or math subjects but also language or social study subjects. Teachers' influence seems an important factor for students to choose what subjects they take. One thing which the authors of this study concern is that Gilbert's study was carried among school boys and girls. Thus, the authors of this study wonder to what extent Gilbert's point could apply to university students. University students are of course more mature than school boys and girls and to what extent Gilbert's point is applied to university students remains unsure. It will be the future study. However, the authors of this study agree to the point given by Gilbert. They believe that teachers' effort can contribute to breaking the gender myth: men for science fields while women for humanities.

### **Conclusion**

The results of this study showed both similarities and differences between men and women. Looking back to the research questions of this study, this study raised two research questions earlier. The first research question was if there were any gender similarities and differences about using online course tools among university students. The second research question was if there were any gender similarities and/or differences, what they were.

As for the first research question, the results of this study showed both similarities and/or differences between men and women in this study. Overall, the questionnaire results showed that both men and women showed no significant gender difference about using their PC and the online course tool, MR, except the results of Q7 and Q9.

The results of the actual access of MR showed the gender difference that women in this study accessed more than men in this study did.

As for the second research question, the results of both Q7 and Q9 on the questionnaires provide the answers. On the results of both Q7 and Q9, some gender differences were observed. On the results of Q7, women in this study checked the Content page on MR, in particular. As for the results of Q9, women in this study tended to access MR at home while men in this study tended to access MR on campus.

Overall, this study showed that one of the traditional gender stereotypes, boys for science field and girls for humanities, seemed to be changing. This study was limited to examining participants who were majoring in sport and health science and thus, it needs to examine the other participants who are majoring in the other studies as a future study.

4613 words (excludes tables: 407 words)

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## Appendix

All questions for the questionnaire

Q1: What is your gender?

Q2: What grade are you in?

Q3: How often did you bring your PC into your class?

1: Never, 2: Hardly, 3: Sometimes, 4: Almost every time, 5: Every time

Q4: How often did you use your PC in class?

1: Never, 2: Hardly, 3: Sometimes, 4: Almost every time, 5: Every time

Q5: How often did you use Manaba+R through the semester?

1: Never, 2: Hardly, 3: Sometimes, 4: Almost every week, 5: Every week

Q6: Do you think that online course tools like Manaba+R are useful for your study?

1: Strongly disagree, 2: Disagree, 3: Neither agree nor disagree, 4: Agree, 5: Strongly agree

Q7: Which pages on Manaba+R do you often check?

1: Project (homework), 2: Content, 3: Board, 4: Others

Q8: What information on Manaba+R did you find useful for yourself?

1: Guidelines for assignments, 2: Tips for writing a paper, 3: Useful English expressions, 4: Model paper, 5: Others

Q9: Where do you usually check Manaba+R?

1: In class, 2: At home, 3: Outside of their English class on campus, 4: On a bus or train, 5: Others

Q10: Do you think that online course tools like Manaba+R are useful to communicate with your teacher?

1: Strongly disagree, 2: Disagree, 3: Neither agree nor disagree, 4: Agree, 5: Strongly agree



***The Courses on Inclusive Education in Departments of Early Childhood Education  
in Taiwanese Universities***

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Official Conference Proceedings

**Abstract**

According to official statistics, more than 90% of the preschool-aged children with disabilities in Taiwan are placed in regular education classes in recent years. In the trend toward inclusive education, it is crucial for early childhood education majors to understand inclusive education and practice it. However, numerous studies have noted that preschool educators are not prepared to teach young children with special needs. The purpose of this study was to investigate the undergraduate courses on inclusive education offered by the departments of early childhood education in Taiwanese universities. This study investigated every department of early childhood education accredited for preschool teacher education by Ministry of Education in Taiwanese universities. Data were collected from the university course selection systems, and content analysis was applied to categorize the topics discussed. The results revealed that of the 12 departments investigated, 6 departments offered courses on inclusive education in school years 2012-2017. Each syllabus listed lecture as one of the pedagogies. Most of the topics covered in the courses were the definition of inclusive education, curriculum and instruction, history of inclusive education, and individualized education programs. To conclude, this study may be of importance in demonstrating the current status of the courses on inclusive education offered in early childhood preservice teacher education programs in Taiwan.

Keywords: department of early childhood education, inclusive education, undergraduate course

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## Introduction

According to official statistics, more than 90% of the preschool-aged children with disabilities in Taiwan are placed in regular education classes in recent years (Ministry of Education, 2016). In the trend toward inclusive education, preschool programs need to be ready for inclusion, rather than young children with special needs having to meet certain entry criteria (Odom, Schwartz, & ECR II Investigators, 2002). Preschool educators is one of the elements involving in preschool programs. In Taiwan, preservice teacher education programs prepare general educators or special educators separately, and students who meet eligibility criteria generally receive a teacher's certificate in either general or special education. However, high-quality preschool inclusive education requires collaboration and teaming (DEC/NAEYC, 2009). In addition to equip early childhood special education majors with the concept of inclusion, it is crucial for early childhood education majors to understand inclusive education and practice it. However, numerous studies in Taiwan have noted that preschool educators are not prepared to teach young children with special needs (e.g., Hsu, 2001; Li, 2006; Wang, 2002).

Couse (2016) purposed that it is time to think about how preschool educators are prepared to support all children. The course on inclusive education serves as the foundation for early childhood education majors to work with young children with special needs in natural environments. It should be noted, however, that there have been few attempts to investigate the inclusive education courses in early childhood preservice teacher education programs in Taiwan. Therefore, the purpose of this study was to investigate the undergraduate courses on inclusive education offered by the departments of early childhood education in Taiwanese universities. The results of this study provide early childhood education field with accurate baseline data about the courses on inclusive education in Taiwan and serve as reference for instructors to design related courses.

## Methods

This study investigated entire 12 departments of early childhood education accredited for preschool teacher education by Ministry of Education in Taiwanese universities. Syllabi of undergraduate course entitled "inclusive education" and "preschool inclusion" being offered by the above 12 departments of early childhood education in school years 2012 through 2017 were collected from the online course selection system of each university.

Of the 12 departments investigated, 6 departments offered a total of 35 undergraduate courses on inclusive education in school years 2012 through 2017. Deducting duplicate, blank or incomplete syllabi, entire 9 undergraduate course syllabi were then analyzed. Content analysis was employed to understand how the undergraduate courses on inclusive education were offered. Open coding method was used to formulate coding categories. Relevant data were coded based on keywords. In addition to general information (i.e., course credits and course type), each syllabus was analyzed to identify what pedagogies were used and what topics were covered in the courses.

## Results

The results revealed that of the 12 departments investigated, 6 departments offered courses on inclusive education in school years 2012 through 2017. Of the above 6 departments, 5 departments made the course on inclusive education as an elective course, and one department made it as required. 5 departments offered the courses for 2 credits, and one department offered for 3 credits.

## *Pedagogies*

Every instructor used several pedagogies as noted in each syllabus. Every instructor planned to lecture in the course, along with other pedagogies including discussion, field experiences, case method, multi-media teaching, cooperative learning, commentary, and collaborative teaching with practitioners. Table 1 ranks pedagogies listed in course syllabi based on frequency.

Table 1  
*Pedagogies Listed in Inclusive Education Course Syllabi (N = 9)*

<b>Pedagogies</b>	<b>%</b>	<b>(n)</b>
Lecture	100.00%	(9)
Discussion	77.78%	(7)
Field experiences	77.78%	(7)
Case method	55.56%	(5)
Multi-media teaching	44.44%	(4)
Cooperative learning	44.44%	(4)
Commentary	11.11%	(1)
Collaborative teaching with practitioners	11.11%	(1)

## *Course Topics*

Several topics related to inclusive education were outlined in each syllabus. The topics included two dimensions: foundations and practices. Most of the topics covered in the courses were the definition of inclusive education, curriculum and instruction, history of inclusive education, and individualized education programs. Table 2 ranks course topics covered in course syllabi based on frequency.

Table 2  
*Topics Covered in Inclusive Education Course Syllabi (N = 9)*

<b>Topics</b>	<b>%</b>	<b>(n)</b>
<i>Foundations</i>		
Definition of inclusive education	100.00%	(9)
History of inclusive education	77.78%	(7)
Characteristics of inclusive education	55.56%	(5)
Laws on inclusive education	44.44%	(4)
Rationale for inclusive education	33.33%	(3)
Current status of inclusive education	33.33%	(3)
Future development of inclusive education	11.11%	(1)
<i>Practices</i>		
Curriculum and instruction	88.89%	(8)
Individualized education programs	66.67%	(6)
Collaboration	55.56%	(5)
Teachers' preparation	44.44%	(4)
Transition	44.44%	(4)
Characteristics of young children with special needs	33.33%	(3)
Introduction to classroom management	33.33%	(3)
Learning environment design	33.33%	(3)
Supportive services	33.33%	(3)
Assessment	22.22%	(2)
Behavior management	11.11%	(1)

## **Conclusions**

Based on the results of this study, there are some guiding questions to reflect: (1) In the trend of inclusion, shall the course on inclusive education be made as required? Are 2-credit-hour courses long enough to compass inclusive education? (2) Are the pedagogies used by the instructors suitable for equipping students with the knowledge, skills, and dispositions needed to work in inclusive settings? (3) Do the course topics represent a holistic scope of inclusive education?

In the trend of inclusion, it is crucial to equip early childhood education majors with the knowledge, skills, and dispositions needed to work with young children with special needs in inclusive settings. The results of this study provide accurate baseline data about the courses on inclusive education in the departments of early childhood education in Taiwan and serve as reference for instructors to design related courses.

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***A Case Study of the Integration of Sight Word Instruction to Enhance Students' English Reading***

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**Abstract**

Reading proficiency has been thought of as a fundamental basis of other learning skills and subjects. Also, it plays an influential role on learners' confidence and motivation. However, it has been found many learners, especially EFL beginning learners, think reading is quite challenging. They think it is difficult to recognize words and comprehend the reading, and oral reading is not quite easy for them as well. On the other hand, studies have indicated that sight words are able to facilitate fluent and successful reading. Hence, this study aimed to explore the effects of integrating sight word instruction in an elementary English class to improve students' English reading. In this case study, one intact class of fifteen fourth graders in an elementary school participated in a 16-week study, and they were further divided into low-achieving and high-achieving groups. Four instruments were employed, including storybooks, an English achievement test, a questionnaire of responses to the sight word instruction, and quizzes. The results were shown as follows:

1. The implementation of sight word instruction significantly enhanced the participants' reading achievement, including word recognition and reading comprehension. The low-achieving group outperformed significantly in reading comprehension.
2. The implementation of sight word instruction improved the participants' oral reading fluency, including accuracy and speed. The high-achieving group had a significant enhancement in speed.
3. The participants also held positive responses to the use of sight word instruction. Finally, some pedagogical implications are offered.

Keywords: sight word instruction, English reading achievement, oral reading fluency, e-storybooks

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## Introduction

Reading plays an important role in language learning because it not only assists learners to acquire knowledge but also to build other academic skills (Harrison, 2004). It is regarded as the foundation of other skills and it influences learners' confidence, interest, and learning motivation (Huey, 2000). Students with poor reading skills may encounter a wide range of difficulties both in school and life (Bennett, Brown, Boyle, Racine, & Offord, 2003; Chambers, Dunn, & Rabren, 2004). Likewise, the majority of middle grade students are struggling readers. Over 60% of U.S. 4<sup>th</sup> and 8<sup>th</sup> graders fail to demonstrate reading proficiency on the National Assessment of Educational Progress (NAEP, 2015). Therefore, helping students become fluent readers is the central goal of reading instruction (Galloway, 2016; Griffith & Rasinski, 2004; Kuhn & Stahl, 2003; National Reading Panel, 2000).

Fluency is viewed as a critical component of proficient reading because it is a key link between word recognition and comprehension (Bashir & Hook, 2009). Several researchers (Crawford, Tindal & Stieber, 2001; Hintze, Callahan III, Mathews, Williams, & Tobin, 2002; Speece & Ritchey, 2005) have proved that reading fluency is an important predictor of general reading outcomes, including comprehension. Fluent readers are able to recognize words in text accurately and automatically with a minimal amount of attention. They are able to read text silently or orally with speed and good comprehension. Hence, developing reading fluency is an important element in reading.

In terms of English education in Taiwan, reading ability has been highly emphasized, and as a result, students are encouraged to read simple stories and plays in elementary schools according to the Grade 1-9 Curriculum guidelines published by Ministry of Education (Ministry of Education, 2006). However, the insufficient number of words that elementary school students in Taiwan have learned makes them have difficulties in reading the written texts (Hsu, 2008; Shen, 2009). Also, students of English as a foreign language (EFL) who are consistently impeded by unfamiliar words usually feel frustrated and gradually lose motivation for further reading. Therefore, efficient and reliable instructions and interventions for word-level reading are important for elementary readers.

Among a variety of approaches in reading strategies, sight word knowledge is regarded as an essential element in developing early reading foundation skills (Ehri, 2005; Pikulski & Chard, 2005; Wagner, 2008; Yang, 2006). Sight words are the words with high frequency in text and they should be recognized on sight instantly (Carlson, 2008), such as a, is, of, and I. Many of these words cannot be decoded or applied to phonetic rules (Browder & Lalli, 1991), including one, was, said, and so on. Most of them are function words, and they are mostly pronouns, adjectives, adverbs, prepositions, and conjunctions. Nouns are excluded from the list typically (Carlson, 2008). In other words, sight words are the words with high frequency, irregularity, and function-word status. The most popular list is called the Dolch Sight Word List that consists of 220 words, and these words make up approximately 50 to 75 percent of words appearing in print (Frantantoni, 1999).

If sight words are known well enough, students may increase more confidence in reading (Bossard, 2008). They are able to recognize these words rapidly without having

to sound them out. If they have to decode each word, they may feel frustrated. In addition, sight words assist students to achieve text-reading fluency. Good readers cannot afford the time to dwell on too many words, or they may lose the speed and fluency necessary for determining the author's message. Once sight words can be retrieved rapidly from memory, more time and attention can be left for more challenging words and for reading comprehension. Therefore, teaching sight words could be an important component of reading programs to assist learners in achieving successful reading skills (Ehri, 2005; Richek, Caldwell, Jennings, & Lerner, 2002; Yang, 2006). Some studies have shown that teaching sight words is beneficial for students' reading fluency and comprehension, especially for beginning and struggling readers (Fossett & Mirenda, 2006; Suha, 2003; Van der Bijl, Alant, & Lloyd, 2006). However, the above studies were explored in the setting of English as the first language. Hence, it may be worth investigating in the setting of English as a foreign language setting.

On the other hand, reading storybooks can provide students with incidental exposure to written or oral context (Nation, 1990). The context and real communicative situations of stories help to convey the meanings of vocabulary items so that students are able to remember the vocabulary more easily (Elley, 1989). Shown in some researches, applying storybooks in EFL teaching facilitated students' English learning, especially in words acquisition (Hsieh, Wang, & Lee, 2011; Shen, 2009; Yang, 2009). Through storybook teaching, students' concentration and inner motivation can be stimulated. By means of the meaningful input from storybooks, the language in the story is better acquired and retained. Therefore, to facilitate students' sight word learning, it is likely to use storybooks in sight word instruction.

As a result, the purpose of this study was to explore whether applying sight words with the aid of storybooks improved students' English reading achievement. In addition, students' attitudes toward this program were investigated as well. This study aimed to find out answers to the following questions.

1. How effectively does the implementation of sight word instruction improve the participants' English reading abilities, including word recognition and reading comprehension?
2. How effectively does the implementation of sight word instruction improve the participants' English oral reading fluency?
3. What are the participants' responses to the sight word instruction?

## **Methodology**

### **Participants**

One intact class of 15 fourth graders in Taiwan was involved in this case study for 16 weeks. There were eight male students and seven female students in this class. In school, all of the participants have learned English as a required subject for two 40-minute classes per week for one year. The researcher was the instructor in this study, integrating sight word instruction in the 40-minute morning self-study time twice a week.

## Instruments

**Storybooks.** In this study, the teaching materials consist of 16 storybooks (Table 1) published by San Huei Publishers. Each storybook contains three to six sight words. The instructor listed the sight words in the beginning, and then started to tell the story. Then, the participants worked together to guess the main ideas of the story and the sight words. Various activities were employed to help the participants to recognize the sight words and to read out the story fluently.

Table 1: Storybooks & Timetable for Sight Word Instruction

Week	The content of the instruction	Target sight words
1	Pretest: oral reading section of the EAT	
2	Pretest: reading achievement; section of the EAT	
3-1	Storybook 1: New Socks	I, want, new, of
3-2	Storybook 2: Three	three, have, but
4-1	Storybook 3: Go, Go	they, go, to
4-2	Review	
5-1	Storybook 4: Up and Down	we, up, down
5-2	Storybook 5: Helpers	help, at, the
6-1	Review & Quiz 1	
6-2	Storybook 6: Run	run, said, jump
7-1	Storybook 7: Me Too	me, too, eat, read
7-2	Storybook 8: My Dog	and, you, ride
8-1	Storybook 9: That Hat	that, is, my, pretty
8-2	Review & Quiz 2	
9-1	Storybook 10: Mr. Shape Man	for, his, two, look, he
9-2	Storybook 11: Bubbles Everywhere	on, with, them, make
10-1	Storybook 12: Baking A Cake	put, in, some, and, funny
10-2	Storybook 13: The New Car	got, so, let, come
11-1	Review & Quiz 3	
11-2	Storybook 14: The Magic Man	live, a, can, has, fly, walk
12-1	Storybook 15: A Mouse In The House	over, under, into, out
12-2	Storybook 16: Winnie And The Cat	she, her, red, black, yellow, blue
13	Review & Quiz 4	
14	Post-test: oral reading	
15	Post-test: reading achievement	
16	Questionnaires	

**An English Achievement Test.** To examine the participants' reading abilities and oral reading fluency, an English achievement test was conducted before and after the treatment. The vocabulary and sentence patterns used in the test are all selected according to the competence indicators of the English learning area in the Grade 1-9 Curriculum (Ministry of Education, 2006), and this test was reviewed, revised, and verified by three experienced English teachers to reach the expert validity.

The reading ability part consists of 25 questions, testing participants' word recognition and reading comprehension abilities. As for the oral reading fluency part, the participants read a story adapted from Perfect Poems for Teaching Sight Words (Ellermeyer & Rowell, 2005). In order to measure exactly the amount of progress participants made during the treatment, the story was not taught in this study. The participants' oral reading performances were evaluated based on the criteria of speed and accuracy (Penner-Wilger, 2008). Speed was assessed by measuring the average number of words participants read correctly per minute. Accuracy was assessed by counting the percentage of words the participants read correctly.

**A Questionnaire of the Responses to the Sight Word Instruction.** A questionnaire, revised based on the items of two studies (Lin, 2010; Tsai, 2010) was designed to investigate the participants' responses to sight word instruction. The 18 items were explored the participants' opinions of the selected stories (Q1-Q8), feedback of the instruction (Q9-Q14), and attitudes toward their English learning (Q15-Q18) (see Appendix A). The questionnaire employed a four-point Likert scale, ranging from "strongly agree" to "strongly disagree". The content of the questionnaire was also examined by two professors in order to achieve expert validity.

**Quizzes.** Four quizzes were designed based on the sight words and sentences targeted in the storybooks. Each quiz with 10 question items was employed to check the participants' learning progress after the instruction. These quizzes were given in the 6<sup>th</sup>, 8<sup>th</sup>, 11<sup>th</sup>, and 13<sup>th</sup> week.

## Results and Discussion

### English reading abilities

Shown in Table 2, the results of the paired sample T-test in the part 1 in the English Achievement Test, displayed there were significant differences in the overall reading abilities ( $t = -5.47$ ,  $p = .000$ ), including word recognition ( $t = -7.18$ ,  $p = .000$ ) and reading comprehension ( $t = -3.16$ ,  $p = .000$ ). The results indicated that the use of sight word instruction could help students improve their reading abilities.

Table 2: Results of the Participants' Reading Achievement

	(Pre-test)		(Post-test)		<i>t</i>	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
( <i>N</i> = 15)						
Word recognition	61.73	21.73	83.20	15.28	-7.18	.000*
Reading comprehension	60.26	24.10	77.20	15.76	-3.76	.000*
Overall Reading Achievement	60.50	22.92	80.20	15.52	-5.47	.000*

Note. \*  $p < .05$

As for the four quizzes, the results shown in Table 3 demonstrated that the participants improved continuously in their reading during the instruction. Moreover, a significant difference was found between Quiz 1 and Quiz 4 ( $t = -3.94$ ,  $p = .001$ ), indicating that the participants made a significant improvement after the instruction.

Table 3: Results of the Four Quizzes

( $N = 15$ )	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>
Quiz 1	77.67	20.78		
Quiz 2	80.33	17.98		
Quiz 3	84.67	18.07		
Quiz 4	92.67	11.63		
Comparison between Quiz 1 & Quiz 2	2.67	8.42	-1.23	.120
Comparison between Quiz 1 & Quiz 3	7.00	17.09	-1.59	.067
Comparison between Quiz 1 & Quiz 4	15.00	14.76	-3.94	.001*

Note. \*  $p < .05$

To obtain more detailed information, the participants were divided into high and low achieving groups based on their scores from the pretests of reading abilities. The participants with scores in the upper 50% were designated as the High Achieving Group (HAG), while the other half were designated as the Low Achieving Group (LAG). With regard to word recognition, shown in Table 4, there was no significant difference between the improvements of the LAG and the HAG ( $t = 1.70$ ,  $p = .112$ ). As for reading comprehension, the average percentage of improvement for the LAG and the HAG was 25.5% and 7.12% respectively. This difference was found to be significant ( $t = 2.34$ ,  $p = .036$ ), revealing that the LAG made a more significant progress than the HAG in reading comprehension.

Table 4: Comparisons of Low-achieving and High-achieving Groups in Reading Achievement

	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>
Improvement of Word Recognition				
Low achieving group ( $N = 7$ )	26.57	11.82	-5.95	.000*
High achieving group ( $N = 8$ )	17.00	9.97	-4.82	.001*
Differences between high & low achieving groups			1.70	.112
Improvement of Reading Comprehension				
Low achieving group	25.5	18.75	-3.85	.003*
High achieving group	7.12	9.30	-2.03	.044*
Differences between high & low achieving groups			2.34	.036*

Note. \*  $p < .05$

The results showed a significant improvement in the students' word recognition by the assistance of sight words. The possible explanation for this is that abstract sight words can be acquired and better retained through the storybook teaching. The context of the storybooks provided the participants with comprehensible input which enabled them to grasp the use or the meanings of sight words more clearly, even though most sight words are function words. The pictures in the storybooks also

served as clues, helping the participants to guess and imagine the meanings of unfamiliar sight words. Therefore, the participants' word recognition was effectively enhanced. Similar findings have been found in previous studies, which reported that storybook teaching would be beneficial for word acquisition (Collins, 2005; Hsieh, Wang & Lee, 2011; Robbins & Ehri, 1994).

As for reading comprehension ability, the participants also made a significant progress. It is likely that more of the participants' attention could be left for text comprehension since the frequent words have been recognized more quickly by sight. Therefore, the time to decode the words is shortened, bringing them more time and attention to the reading passage through the instruction. They are able to understand the information from the text and comprehended the contents more easily. This finding is consistent with the statement reported by (Ehri, 2005; Yang, 2006) that if sight words are known well enough, learners are assisted to increase reading fluency and comprehension.

In addition, further analysis showed that the LAG made more progress than the HAG in reading comprehension. It is likely that the treatment not only enlarged their vocabulary bank but also supplied more self confidence in reading for the participants in the LAG, and as a result significantly improved their reading comprehension. Difficulties in recognizing words create obstacles to acquiring the message in the text. As long as the participants had sufficient word knowledge, they could overcome the reading barrier and achieve reading comprehension more easily. Therefore, the sight word instruction offered more significant assistance to the participants of the LAG in reading comprehension. These results correspond with previous findings that the sight word instruction is essential for emergent, beginning, and struggling readers to improve their reading ability (Fossett & Miranda, 2006; Van der Bijl, Alant, & Lloyd, 2006).

### Oral Reading Fluency

Significant improvements were found in the results of the participants' English oral reading fluency test in the terms of accuracy and speed. As shown in Table 5, there were significant differences in the posttests of the participants' English oral reading accuracy and speed respectively ( $t = -7.91, p = .00$ ;  $t = -6.01, p = .00$ ).

Table 5: Results the Participants' Oral Reading Fluency

	(Pre-test)		(Post-test)		<i>t</i>	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
( <i>N</i> = 15)						
Speed	10.91	14.31	20.31	18.54	-6.01	.000*
Accuracy	39.72	26.60	60.14	25.87	-7.91	.000*
Oral Reading Fluency	25.32	20.46	40.23	22.21	-6.96	.000*

Note. \*  $p < .05$

Likewise, in terms of oral reading accuracy, shown in Table 6, there was no significant difference between the improvements of the high and low achieving groups ( $t = 0.74, p = .475$ ). In terms of oral reading speed, the HAG increased on average by about 14 words read correctly per minute while LAG increased on average

by about 7 words read correctly per minute. The results in Table 8 show a significant difference between the improvements of the high and low achieving groups ( $t = -2.44$ ,  $p = .03$ ), indicating that the HAG made more progress in their reading speed.

	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>
Improvement of Speed				
Low achieving group ( $N=7$ )	7.07	5.23	-4.27	.001*
High achieving group ( $N=8$ )	14.03	5.12	-6.13	.002*
Differences between high & low achieving groups			-2.44	.030*
Improvement of Accuracy				
Low achieving group	22.50	11.31	-5.26	.001*
High achieving group	18.62	9.08	-5.80	.000*
Differences between high & low achieving groups			0.74	.475

Note. \*  $p < .05$

Table 6: Comparisons of the Participants' Improvements in Oral Reading Accuracy

The results of this study revealed that the employment of sight word instruction effectively improved the fourth graders' oral reading fluency. All the participants showed a significant improvement in their oral performance based on the criteria of accuracy and speed after the treatment. It is likely that the practice of the pronunciation of sight words helped the participants to improve their oral reading ability. The activities designed for the instruction may have helped the participants not only to recognize words by sight but also to become familiar with the sounds of the words, corresponding to Levy, Abello, and Lysynchuk's (1997) study.

With regard to accuracy, the participants made significant improvement after the treatment. A possible explanation is that instruction provided the participants with numerous opportunities to practice unfamiliar words orally. Through repeated aural and oral practice, the participants' pronunciation was effectively improved. In terms of speed, all of the participants significantly increased the speed of their oral reading. That means the number of words read correctly per minute was increased during the treatment. Sight words received sufficient oral practice during the treatment so that they were identified in the text rapidly and automatically, and this possibly enhanced the participants' speed of oral reading. Besides that, further analysis showed that the HAG made more improvement than the LAG in reading speed after the sight word instruction. It is likely that the participants in the HAG may have higher average proficiency, including a stronger vocabulary foundation, stronger ability to interpret the text, and more confidence to read the text aloud. The higher reading skills may allow the participants in the HAG shorten the time in comprehending the texts. In contrast, the participants of the LAG may need to spend more time decoding new words due to their limited proficiency. Therefore, they may need to have more opportunities for repeated reading practice to make more significant improvement in oral reading speed.

### Responses to the Sight Word Instruction

According to the descriptive statistics results, the participants' feedback demonstrated positive responses to the sight word instruction of storybooks and this program, and

they agreed that the instruction contributed positively to their English learning achievement. The descriptive statistics of the questionnaire results were displayed in Table 7.

Table 7: Results of the Questionnaire Responses

Items	Domain	SA	A	D	SD	M
1-8	opinions of the selected stories	62.9%	27.6%	7.6%	1.9%	3.51
9-14	feedback of the instruction	60%	23.8%	7.6%	8.6%	3.35
15-18	attitudes toward their English learning	56.7%	20%	15%	8.3%	3.25
	Overall Questionnaire	59.9%	23.8%	10.1%	6.2%	3.37

*Note.* SA= strongly agree; A= agree; D= disagree; SD= strongly disagree. Rating from 4 points (strongly agree) to 1 point (strongly disagree).

Based on the results, it is likely that the pictures and interesting plot drew the participants' attention and increased their willingness to learn the words that appeared in the stories. This result is similar with the findings of Ellis and Brewster's (1991) study, in which storybooks with enjoyment attracted students' attention and cultivated their positive attitude. Also, most of the participants thought this program was interesting and reduced their anxiety in English reading. It is likely that the participants built more self-confidence during the treatment. They do not have to worry about the application for the phonics rules. As long as they recognized the sight word, they can read it out quickly, helping improve reading fluency and giving the participants feelings of success in reading. With the increased self confidence in reading, the participants' learning anxiety may be reduced, and their learning attitudes may also be enhanced positively.

### Implications & Suggestions

Based on the results of this study, two pedagogical implications for educators and curriculum designers are proposed, as follows.

First of all, since the implementation of the sight word instruction was found beneficial for young learners' reading achievement, it is recommended that a sight-word learning environment can be created into the classroom. Teachers can display the sight word cards that have been introduced in class on the classroom wall. Teachers can also do quick word wall games and activities such as bingo, go fishing or using the sight words to make sentences. In this way, students not only review the sight words but also build visual memory and automaticity with these words. With repeated visual exposure to sight words, students should be able to gradually acquire mastery of these words.

The sight word instruction can also be implemented in English remedial programs, since it offers significant assistance for low achievers to improve their reading ability.

Teachers can conduct the remedial program in the morning self-study time or lunch break. Games, chants or songs are also recommended to be integrated into the sight word instruction to create a relaxing learning environment and reduce low achievers' fear and rejection of English.

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## Appendix A

### A Questionnaire of the Responses to the Sight Word Instruction

item	Statement	SA	A	D	SD
1	The teaching materials increased my interest in learning English sight words.				
2	Using stories to learn English sight words can help me concentrated on learning.				
3	The pictures presented in the teaching materials help me understand the meanings of English sight words.				
4	The teaching materials heavily made me feel that learning English sight words was very boring.				
5	The teaching materials made me want to understand more about foreign culture.				
6	I felt bored with the teaching materials because there were too many repetitions of sentence patterns.				
7	I hope I can keep on using stories to learn English in the future.				
8	After this English sight word program, I would like to read more English stories.				
9	I feel this English sight word program is interesting.				
10	I dislike this English sight word program.				
11	In this English sight word program, I always feel relaxed.				
12	In this English sight word program, I often felt nervous if the teacher asked me to answer English questions.				
13	I believed that others could understand the teaching materials better than me.				
14	In this sight word program, I often felt nervous.				
15	The sight word instruction improved my English achievement.				
16	After having this sight word program, I learned more vocabularies.				
17	After having this sight word program, I can read English sentences quickly.				
18	After having this sight word program, my English oral reading ability is getting fluently.				

Note: SA=strongly agree; A=agree; D= disagree; SD=strongly disagree

## *Assessing Information Literacy Skills of First Year Undergraduate Students*

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### **Abstract**

The present study aimed at assessing the information literacy skills of first year undergraduate students from author's university. This study included four essential areas: the ability to (1) identify information needs and sources; (2) locate information; (3) evaluate information; (4) synthesize information. We measured information literacy skills with questionnaire and multiple-choice knowledge test from 61 first year undergraduate students. The findings indicate that the majority of the participants lacked information literacy skills on all areas. The result signifies that further instructional support to foster undergraduate students' information literacy skills is essential and important.

Keywords: information literacy, information problem solving, information skills, freshmen

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## Introduction

In the Internet era, university students always use information from the Internet for solving daily-life problems or assignment questions. It requires students to learn how to identify information needs, locate information, evaluate information and use information effectively, such skills are the key elements of information literacy and information problem solving. It enables university students to be successful in their academic and professional lives (Fain, 2011). However, teachers believe that students should develop information problem solving skills and information literacy skills spontaneously (Walraven, 2008; Van Deursen, 2013). Researchers have shown that university students have difficulties in solving information-based problems (Fain, 2011; Probert, 2008; Walraven, Brand-Gruwel & Boshuizen, 2008). In order to develop appropriate training program for our undergraduate students, it is necessary to examine the information literacy skills of our first-year undergraduate students. This research focuses on four essential information literacy areas. It examined students' ability to: (1) identify the information needs and internet sources; (2) locate information from the Internet; (3) evaluate the quality of information; and (4) synthesize information. The results may help university members to develop appropriate information literacy course at undergraduate level.

## Literature Review

In 1974, Paul Zurkowski introduced the term information literacy, but it was related to workplace. The first and most widely cited definition of information literacy in education was proposed by American Library Association (ALA):

*“To be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate and use effectively the needed information.” (ALA, 1989, n.p.).*

The first information literacy model was presented by Eisenberg and Berkowitz in 1988. Eisenberg and Berkowitz (1990) proposed the Big 6 model to develop information literacy skills. The Big 6 model emphasized on using information problem solving skills. It has provided six steps to help students in solving information problem. These steps were task definition, creating information seeking strategies, locating and accessing information, synthesizing information and evaluating information (Eisenberg and Berkowitz, 1990).

In addition to information literacy model, some organizations developed Information Literacy framework for different levels of students. The most cited model was proposed by the Association of College and Research libraries (ACRL) – Information literacy competency standards for higher education. It proposed five information literacy standards with 22 performance indicators for university students. In the United Kingdom, the Society of College, National and University Libraries (SCONUL) presented seven pillars model of information literacy in 1999 and revised in 2011. It defined the core skills and competencies (in terms of ability) and attitudes and behaviors (in terms of understanding) at the most important part of information literacy development in higher education (SCONUL, 2011). In 2016, the Hong Kong Education Bureau introduced new Information Literacy for Hong Kong students. There are eight literacy areas in three categories. It includes (1) effective and ethical

use of information from lifelong learning; (2) Generic Information Literacy (identify, define, locate, access, evaluate and organize information); (3) Information World (Education Bureau, 2016). This new Information Literacy provides some idea for schools to develop students' knowledge, skills and attitude to use information.

Some Information Literacy frameworks were developed for library sciences, it does not reflect the required knowledge in this information-rich internet environment. Based on the above frameworks, this study focuses on solving problems by using information from the Internet, it covers four dimensions, they are (1) identify information needs and internet sources, (2) locate information from the internet, (3) evaluate information from the Internet and (4) synthesize information.

In terms of assessment, Abdullan (2010) categorized the information literacy assessment data as perception-based data and evidence-based data. The perception-based data are collected from the self-rated questionnaire while the evidence-based data are collected from the performance of knowledge tests or specific tasks. Some researchers developed self-rated questionnaire to evaluate the perception of information literacy skills. Serap Kurbanoglu (2006) developed a 17-item information literacy scale with three main components, which were basic, intermediate and advanced information literacy skills. OuYang (2007) developed an evaluation instrument of information problem solving skills on Internet resources. It included (1) define information problem, (2) search information, (3) scan information, (4) process information, (5) organize and present information and (6) regulation, which evaluate the developmental level and confidence level of participants' information problem solving skills.

Knowledge test include a list of questions for students to answer. There are several large scale information literacy tests such as Tool for Real-time Assessment of Information Literacy (TRAILS) and Project Standardized Assessment of Information Literacy Skills (SAILS) but they are not able to track changes in IL skills of individual students (Fain, 2011). Belie (2009) developed the information literacy assessment scale for education. It included 22 multiple choice questions that reflect cognitive dimension of information literacy. In a recent study, Boh Podgornik (2016) developed a new information literacy test for all study programs in all scientific disciplines.

## **Methodology**

The study included a group of 61 first year undergraduate students. All of them enrolled in the first year first semester foundation information technology module. We assessed all participants by using questionnaire and multiple-choice questions. We collected all data on the first two weeks of the module.

A customized questionnaire was used to measure the perception of information literacy. The questionnaire items were revised based on Ouyang (2007)' and Serap Kurbanoglu (2006)'s instrument for measuring the perception of information literacy. It mapped to the four essential abilities (i.e. identify information needs and sources, locate information, evaluate information and synthesize information). It consisted of 18 Likert-type questions. Each question had a 7-point Likert type scale.

We used multiple-choice knowledge test to check their actual performance. We revised Beile (2009) and Neely (2006)'s assessment items. A total of 18 multiple choice questions, mainly addressing information problem solving issues was developed.

To validate all instruments in this research, all questionnaires and multiple-choice knowledge test questions were sent to experts in Information Literacy for comments.

## Results and Discussion

This section discusses the results of the survey and multiple-choice knowledge test. Table 1 and 2 show the results of first information literacy area – identify information needs and sources on survey and multiple choice knowledge test respectively. The participants perceived that they had difficulties in defining the information needs (Mean=4.24) and using electronic database (Mean=4.32), but they had relatively confidence on selecting information sources (Mean=4.89). On multiple-choice knowledge test, more than 50% of the participants got a correct answer on this area. It is aligned with the survey results. Around 70% of the participants were able to determine the best information sources while less than 50% of the participants were able to use the electronic database in university library.

Survey item: I feel confident to ....	Mean	SD
define the information I need.	4.24	1.43
identify a variety of potential sources of information on Internet	4.63	1.26
use electronic database in university library	4.32	1.43
select the most appropriate information sources	4.89	1.09

Table 1 Survey results: identify the information needs and sources

Item	Correct %
Define the information needs	61.90%
Use of the electronic database in university library	49.20%
Determine best information source (event that took place two days ago)	69.80%
Determine best information source (articles on specific topic)	55.60%

Table 2 Multiple-choice knowledge test results: identify the information needs and sources

Table 3 and 4 show the survey and multiple-choice knowledge test results of locating information respectively. The participants perceived that they had difficulties in using Boolean logic (Mean=4.3), but they had confidence in using different keywords (Mean=5.03) and advanced Google search (Mean=5.29). Refer to the results of multiple choice knowledge test, less than 50% participants got the correct answer on all multiple-choice questions. Only 12.7% of the participants were able to understand the meaning of truncation (\*). In addition, only 23.8% of the participants were able to use different keywords to limit their search. In revising the search strategy, the majority of participants did not know how to retrieve more or less results based on the initial search. It reflects that they have poor performance on locating information. It contradicts the results with survey. Participants believe that they are able to locate

information but they do not have the necessary skills to locate information. They have wrong perception of locating information. They know how to type the keywords on the search engine but they don't know how to revise the search strategy by using different techniques.

Survey item: I feel confident and competent to ....	Mean	SD
limit search strategy by using different keywords	5.03	1.09
limit search strategy by using Boolean logic	4.30	1.16
limit search strategy by using advanced Google search	5.29	1.18
revise search strategy to retrieve more results	4.86	1.16
revise search strategy to retrieve fewer results	4.52	1.19

Table 3 Survey results: locate information

Item	Correct %
Limit search strategy by using different keywords	23.80%
Limit search strategy by using Boolean logic	49.20%
Use of operator - Truncation	12.70%
Search strategy – revise strategy to retrieve more results	27.00%
Search strategy – revise strategy to retrieve fewer results	30.20%

Table 4 Multiple-choice knowledge test results: locate information

Table 5 and 6 show the survey and multiple-choice knowledge test results of evaluating information respectively. The participants perceived that they had confidence in determining the information sources by using different evaluation criteria. The mean score of this area ranged from 4.68 to 4.89. Refer to results of multiple-choice knowledge test, less than 50% of participants got the correct answer on determining the authority and objectivity of information sources.

Survey item: I feel confident and competent to ....	Mean	SD
determine the authority of information sources	4.81	1.23
determine the currency of information sources	4.83	1.19
determine the reliability of information sources	4.89	1.12
determine the objectivity of information sources	4.68	1.10
determine the accuracy of information sources	4.76	1.06

Table 5 Survey results: evaluate information

Item	Correct %
Determine the authority of information sources	41.30%
Determine the currency of information sources	55.60%
Determine the reliability of information sources	55.60%
Determine the objectivity of information sources	47.60%
Determine the accuracy of information sources	74.60%

Table 6 Multiple-choice knowledge test results: evaluate information

Table 7 and 8 show the survey and multiple-choice knowledge test results of synthesizing information respectively. In general, the participants perceived confidence in synthesizing information. The mean score of this area ranged from 4.76 to 5.00. Refer to multiple-choice knowledge test, they had difficulties in citing information. Only 31.7% of participants were able to select the correct citation and only 11.1% of participants were able to understand the meaning of the volume of a journal. They don't know the differences between volume and issues of a journal. It contradicts the results with the survey. Participants believe that they are able to make citation and use quotations (Mean=4.83) but they do not know how to make correct citation and the meaning of journal citation.

Survey item:	Mean	SD
I feel confident and competent to ....		
determine whether the information retrieved is relevant and sufficient for solving the information problem	4.81	1.15
categorize and manage located information	4.76	1.21
make citations and use quotations within the text	4.83	1.11
summarize information obtained from the Internet	5.00	1.06

Table 7 Survey results: synthesize information

Item	Correct %
Make citations	31.7%
Structure of journal citation – journal title	54.00%
Structure of journal citation – page number	61.90%
Structure of journal citation – volume	11.10%

Table 8 Multiple-choice knowledge test results: synthesize information

## Conclusion and Suggestions

This paper reports the information literacy skills of the first year undergraduate students in Hong Kong. By using questionnaire and multiple-choice knowledge test, it shows that participants have limited knowledge of information literacy. On the area of identifying information needs and sources, participants were not able to use electronics database on university library. On the area of locating information, they were not able to use different keywords with Boolean operators and how to revise the search strategy based on initial search results. On the area of evaluating information, they had difficulties in determining the authority and objectivity of information sources. On the area of synthesizing information, they had difficulties in citing information. As we have a small sample size in one particular module at one university, it limits the generalizability of the findings to other programmes in other institutions.

Refer to the results of survey and knowledge test, we can focus more training on each Information Literacy area. On the area of identifying information needs and source, we should provide more training on the electronics database. Faculty members can collaborate with university library. On the area of locating information, undergraduate students should learn how to formulate keywords other than the words from original problem. In addition, students should learn how to use Boolean logic and how to formulate advanced search statements. In order to help them learn better, instructors should demonstrate the benefits of using appropriate keywords, Boolean search and

advanced search strategies. On the area of evaluating information, instructors can provide some checklists of web evaluation. On the area of synthesizing information, instructors should provide more training on citing information in different type of information sources. The result signifies that further support to develop university students' information literacy skills. Further studies can systematically investigate how to foster university students' information literacy skills in formal curriculum.

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***Factors Related to Administration and Management of  
Moral Higher Education Institutions***

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**Abstract**

The objectives of this research are to 1) study the opinions of the executives, lecturers, and supporting personnel about the management of moral higher education institution group in (1) The purpose, mission and the policies of the institutions, (2) The process and the mechanism, and (3) The participation of the staff and 2) study the factors related to administration and management of moral higher education institutions. The samples are 332 executives, lecturers and supporting personnel of the following higher education institutions, i.e. Kasetsart University, Srinakharinwirot University, Chiang Mai University, Khon Kaen University, Ubon Ratchathani University, and Prince of Songkla University. The research tools used to collect the data include in-depth interviews, questionnaires (Likert' s rating scale). Statistics that are used in the analysis of the data involve frequency, mean score (Average), standard deviation and correlation coefficient of the Pearson product. The results are: 1. Overall, the level of the management of moral higher education institution group is high as well as in each aspect. 2. The strategy, the process, application of ethics in the organizations; the leadership and vision of the management; knowledge, understanding and awareness of staff across the organization; system and a mechanism for applying ethics in the framework; the integration of moral in higher education institutions into the mission of the institutions; compliance, monitoring and evaluating the outcomes and the management of moral higher education institutions are positively correlated with the management of moral higher education institutions at the statistical significance level of .05.

**Keywords:** Administration and Management of Higher Education Institutions, Moral Higher Education Institutions

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## Introduction

Among the current impacts of globalization and crises, more Thais are increasingly distorted with materialism and stray from the virtues and truth. Regarding these issues, Thailand has been weakened in many facets compared to their neighbors in the Asean countries. In the old days when people are happier. It is the time that Thai people need to improve the country by committing to the betterment of the nation as His Majesty the King's wisdom that states "developing good people for the country." In addition, the goal of every civilization is access to the goodness, truth and beauty or virtue. Therefore, morality is virtuous and benefitting from thought, wishes, intent. When people with integrity have virtuous thought, they display in word and action show their integrity and morality. Those who do not lack the integrity tend to think in a corrupted way and shall display the corrupted behaviors (Wattanachai, 2014, p. 21, 26).

In organization management, proficiency are parallel to virtue. The organization that makes a substantial profit cannot be guaranteed the sustainability in the future. The important thing is the corporate social responsibility (CSR) to the society and the environment, organizations that have CSR are generally accepted and can do business with sustainability by the ethics and morality. They are aware of the profits to the society through CSR (Piyakul, 2011). Good governance is the moral principles for the organizations, corporates, associations, and charities. The system of good governance is intended to increase the efficiency and productivity of the organization with the principles of 1), the structure of good governance according to the objectives of your organization, converting the objectives into the policy, setting the strategic plan and management policies to respond to the objectives, converting the policy framework into the projects for the organization to achieve the objectives 2) state the responsibility and the accountability encompassing them at every level of the structure and position and 3) are transparent and have a system of checks and balance (Watanachai, 2014: 28-29). CSR is a mechanism that reduces the loss, waste, corruptions misconducts (acts that does not violate the law, moral code of conduct). The combination of mechanisms of ethics, morals and good governance has similar objectives e.g to reduce the loss, eliminating loopholes, to prevent corruption and misconduct and increases the efficiency, worthiness, transparency, integrity and justice (Sawaskaruekarn, 2015).

According to the study, there are 6 steps to develop organisation integrity: 1) Mutual agreement from all staff to develop their organization integrity, 2) brainstorm ideas to appropriate and inappropriate behaviours, 3) brainstorm to set the "remedy"="moral principles" such as integrity, responsibility and volunteer that will reduce inappropriate behaviours and promote the appropriate ones, 4) convert the "moral principles" of the organization into guideline for staff from every level 5) Set the cycle for the practice and assessment within a year. Once finished, conduct the comparison study to discover how many inappropriate behaviours are reduced and how many appropriate behaviours have increased, the side effects and 6) Start anew year cycle, follow steps 1 to 5. The organization integrity is created and everyone can benefit and be happy as well as society (Wattanachai, 2015: Online). In addition, the research of the R. Eric Reidenbach and Donald P. Robin about the development of organization integrity. The variables are the philosophy and the attitude of the management, the value of ethics in the organization culture and the requirements of

ethics as a part of the organization culture such as rules and regulations, complaints and remuneration. The study found that the development of organization integrity have 5 sequences: First: Amoral Organization. Second: organizations that comply to the legal order (legalistic organization). Third: An organization that responds to moral conduct (responsive organization) Fourth: Organization that is approaching/adjacent to the ethics (Emergent Moral Organization) and Fifth: organizations that have ethics (moral organization (Sawaskaruekarn, 2015).

Higher education institutions have a key role in the development of human resources and leading of the society. It is accepted that higher education institution is the foundation that people and organizations can rely on. When issues arise, they will be managed through academic and intellectual capacity. With the expectation, higher education institutions must strive to be a fulfill their objectives and maintain the faith of the society. The main mission of higher education institutions are teaching (production graduate), research (Create Knowledge), academic services (as a duty to the society) and maintaining arts (maintain the identity of the nation.) The mission is critical to the development of the country in short and long term. In addition, teaching aspect encompasses the quality and standards in teaching. The expected outcomes are that students have academic capacity and ethics for the development of the country in various dimensions. (Meesuk and Theera kul 2008: 119-143). With emphasis for the use of the good governance principle in the management of higher education institutions. The statement was enacted in the 15-year long range plan of Higher Education (B.E. 2551-2565) which is a master plan in regard to the development of higher education in Thailand. It determines that the good governance and management is a key factor of that has a direct impact on the development of the universities. If higher education institutions with a mechanism to determine the direction and progress, the mission of the universities is fulfilled (The Office of the Higher Education Commission, 2008).

The study of moral higher education institutions found that one of the problems that lowers the quality of higher education in Thailand is lack of ethics. These universities ignore the adverse effect on the country, the university, learners and family even when there is no misconduct such as hiring unqualified lecturers or assigning lecturers to teach a large students group to reduce costs and make profit. Especially in special courses that incur high tuition fees, the universities are aware that the quality of education will be reduced. However, some universities prioritise the interest rather than the quality of education. In such case, even if the universities may not commit any wrongdoing, they should consider that higher education institutions are not-for-profit organisation. Even private universities should focus on the quality of education, the state allow the private sector to establish and manage higher education institutions and deemed that education helps the state. On this basis, the state subsidies private higher education institutions. When these universities have an integrity problem, the universities must be aware of the problem with ethics and consider employing the management system addition to using rules and regulations. In addition, the society expects that higher education institutions must not have ethics problems (Changkwan Yuan, 2011) while the research of Osathanukroa (2007) on the guidelines for developing the ethics of students in higher education institutions by the approach of His Majesty the King pointed out that the factor that lead to the ethics problems in a higher education institution is that the managerial staff of the higher education institutions are aware of the importance of ethics but lack of a check

and balance system and mechanism e.g. supervision, applying and tracking the operation to succeed in practice. Secondly, the study reported the lack of clarity in the link between the mission of management academic and student affairs. The study and distribution of the learning process is insufficient to initiate shared responsibility among the involved parties and stakeholders. In addition, Kaewpichit (2009) studied the use of the good governance in the private higher education institutions. The private higher education institutions good governance involves eight elements: e.g. 1) responsibility 2) the rule of law and equality 3) transparency 4) values 5) stability 6) participation 7) integrity and 8) The exercise of powers and duties, The research of Buason (2009) which studies corporate governance of the public universities: The current conditions and expectations found that the current condition of the corporate governance of the public University are in moderate level in 9 areas and in overall. When considering each area, it was found that the rule of law and righteousness is in the high level. The other eight areas: the moral or ethics and codes of conduct, transparency, participation, responsibility or liability, value for the effectiveness and efficiency, predictability, the justice or equity, the autonomy and flexibility are in the medium level.

Given the rationale, the researcher is interested in studying the factors that affect the management of moral higher education institutions. Higher education institutions selected for this study are from central and regional institutions which are 1) Kasetsart University as a higher education institution in the network of developing the ideal students (DSA) in central Thailand and 2) Srinakharinwirot University as a university that serves the society. For regional universities, four public universities were selected based on their participation in the network of developing the ideal students (DSA) which involve Chiang Mai University, Khon Kaen University, Ubon Ratchathani University and Prince of Songkla University, the results from this research will inform a guideline of higher education institution management to maximize the benefits as well as providing information for the strategic plan, action and objectives in the management of moral higher education institutions.

**The purposes of this research are to:**

1. To study the opinions of the managerial staff, academic staff and general staff about the management of moral higher education institutions in 3 areas: (1) the purpose, mission and the policies of the institutions (2) the process and the mechanism (3) the participation of the staff according to the variables.
2. To study the relationship between the factors: the strategy, the process, application of ethics in the organizations; the leadership and vision of the management; knowledge, understanding and awareness of staff across the organization; system and a mechanism for applying ethics the framework; the integration of ethics in higher education institutions into the mission of the institutions; and compliance, monitoring and evaluating the outcomes and the management of moral higher education institutions.

## **The scope of the research**

1. The population in this research includes executives, lecturers and general staff of higher education institutions from Kasetsart University, Srinakharinwirot University, the provincial universities are Chiang Mai University, Khon Kaen University, Ubon Ratchathani University and the Prince of Songkla University. The total number of population is 430 staff divided into 2 groups:

1.1 the population group for the in-depth interviews on the management of moral higher education institutions is 10 experts

1.2 the population group to study the opinions about the management of moral higher education institutions and the relationship between the factors to the management of moral higher education institutions are 60 executives e.g. Vice President or the President or the equivalent (10 executives for each institution), 30 lecturers from each university (180 lecturers in total), and 30 personnel from each institution (180 general staff). All population used in the research are 420 staff.

## **The Variables**

The researcher has set the variables to study as follows:

In the Frist objective:

1. Independent variables are gender, work status, educational background, and experience in affiliated higher education institution.

2. Dependent variables are the opinions of the managerial staff, academic staff and general staff about the management of moral higher education institutions in 3 areas: (1) the purpose, mission and the policies of the institutions (2) the process and the mechanism (3) the participation of the staff according to the variables.

In the second objective:

1. Independent variables

1.1 the strategy, the process, application of ethics in the organizations;

1.2 the leadership and vision of the management;

1.3 knowledge, understanding and awareness of staff across the organization;

1.4 system and a mechanism for applying ethics in the framework;

1.5 the integration of ethics in the missions of higher education institutions;  
and

1.6 compliance, monitoring and evaluating the outcomes and the management of moral higher education institutions.

2. The dependent variable is the management of moral higher education institutions.

## **Research methodology**

### **Population**

The population in this research is an executives, lecturers and general staff of higher education institutions in the central area e.g. Kasetsart University and Srinakharinwirot University and provincial areas e.g. Chiang Mai University, Chiang Mai University, Khon Kaen University, Ubon Ratchathani University and the Prince of Songkla University. The total number of population is 430 staff.

### **Samples**

1. Subjects that are used in the in-depth interviews depth interviews about the management of moral higher education institutions were selected based on purposive sampling method. They are 10 experts that have at least a Master's Degree and have at least 20 years of experience in a higher education institution.
2. Subjects that are used in the study to provide feedback on the management of moral higher education institutions and study the relationship between the factors of the management of moral higher education institutions are selected purposively (purposive sampling) with the Vice President or the President or the equivalent (10 executives for each institution), 30 lecturers from each university (180 lecturers in total), and 30 personnel from each institution (180 general staff). All population used in the research are 420 staff.

### **Research Tools**

1. Document analysis on the concepts and principles for the management of higher education institutions and the management of moral higher education institutions.
2. Created an in-depth interviews based on data in the first phase about the management of moral higher education institutions.
3. Five experts verified the in-depth interview questions for content validity.
4. The researcher used information gained from previous phase to develop a Likert's scale questionnaire.
5. Five experts checked on the contents of the questionnaire for content validity and rate them using the IOC: index of item objective congruence.
6. The author tried-out the 50 questionnaires to find the discrimination power (t-test) (Ferguson. 1981: 180), the researcher selected the questions that they have the power of at least 1.75 to be used in the survey.
7. The researcher calculate the reliability of the questionnaire using Cronbach alpha coefficient (Cronbach. 1984: 169)

### **The types of research tools**

Research tools used in this research is the questionnaire which consists of 4 parts. The first part are general information. The second part is a questionnaire of the opinions of the management staff, lecturers and general personnel of moral higher education institutions. The third part is a Likert's type questionnaire that have factors relating to the management of moral higher education institutions and part 4 the open end questions for the feedback as well as additional recommendation.

### **Data collection**

1. The researcher obtained the letter of data collection from the Dean of the Faculty of Education to the Presidents of the mentioned universities.
2. The researcher conducted survey using the questionnaires.

### **Data input and data analysis**

1. Checked the quality of the questionnaires and input the data collected into the computer through the SPSS program for statistical processing.
2. Analysed the in-depth interview data and then presented the data in categories through descriptive report.
3. Studied the opinions of the executives, lecturers and general staff about the management of moral higher education institutions by the mean (average) score and the deviation standard deviation
4. Studied the relationship between the factors of the management of moral higher education institutions by analysis for the correlation coefficient of the Pearson product (pearson statistics correlation coefficient).
5. The data from open-ended questions were presented in a descriptive report.

### **The statistics that are used in the data analysis**

1. Descriptive statistics include the frequency (frequency) the percent value (percentage) the mean (Average) (Ferguson. 1981: 49), and standard deviation (Ferguson. 1981: 68)
2. The statistics for the quality of the questionnaire are:
  - 2.1 Content validity through the IOC: index of item objective congruence
  - 2.2 Analysis of the discrimination power using the test (t-test) (Ferguson. 1981: 180).
  - 2.3 The analysis of the reliability by Cronbach coefficient (Cronbach. 1984: 161)
3. Statistics that are used in the study of the relationship between the factors relating to the management of moral higher education institutions is correlation coefficient of the Pearson product (pearson statistics correlation coefficient)

## Results

The following table showed the opinions of the executives, lecturers and general staff about the management of moral higher education institutions.

**Table 1:**

The management of moral higher education institutions	n = 332		Levels of the opinion
	X	S.D.	
1. The purpose, mission and the policies of the institutions	3.84	0.59	High
2. The process and the mechanism	3.88	0.62	High
3. The participation of the staff	3.88	0.85	High
<b>Total</b>	3.87	0.47	High

Table 2 shows that the opinion of the executives, lecturers and general staff overall and in each area showed a high level.

**Table 2:**

Variables	1	2	3	4	5	6	7
1. the strategy, the process, application of ethics in the organizations	1.000						
2. the leadership and vision of the management	.047*	1.000					
3. knowledge, understanding and awareness of staff across the organization	.122*	.343*	1.000				
4. system and a mechanism for applying ethics in the framework	.574*	.327*	.663*	1.000			
5. the integration of moral in higher education institutions into the mission of the institutions	.839*	.041	.225*	.645*	1.000		
6. compliance, monitoring and evaluating the outcomes and the management of moral higher education institutions	.865*	.056	.161*	.621*	.878*	1.000	
7. Management of moral higher education institutions	.716*	.141*	.230*	.542*	.751*	.759*	1.000

\*Significant at the level of .05

Table 2 shows that the strategy, the process, application of ethics in the organizations; the leadership and vision of the management; knowledge, understanding and awareness of staff across the organization; system and a mechanism for applying ethics in the framework; the integration of moral in higher education institutions into the mission of the institutions; compliance, monitoring and evaluating the outcomes and the management of moral higher education institutions

are positively correlated with the management of ethical higher education institutions at the statistical significance level of .05. When arranged by the factors, the factors are compliance, monitoring and evaluating the outcomes; the integration of moral in higher education institutions into the mission; the strategy, the process, application of ethics in the organizations; system and a mechanism for applying ethics in the framework; and knowledge, understanding and awareness of staff across the organization.

## Discussion

1. The executives, lecturers and general staff agreed with the management of ethical higher education institutions overall and in each area. This may be due to the fact that the three groups agreed that the management of ethical higher education institutions must be based on good governance. However, if the higher education institutions are not based on ethical principles, the higher education institutions will not command trust and respect from the public. The higher education institutions are expected to guide and create a body of knowledge to solve the problem of the society. According to the Office of the Higher Education Commission (2007) has set in the management of ethical higher education institutions with the 10 good governance principles: 1) responsiveness 2) effectiveness 3) efficiency 4) values 5) equity 6) consensus 7) accountability 8) transparency 9) participation and 10) rules of law corresponding with the research of the Jansom (2016) who studied corporate governance in Thailand higher education institutions found that the higher education institutions in Thailand has a consistent structure of good governance with the rules and regulations that are used in the higher education institutions at the present. Nonetheless this structure may not meet the expectations of the society upon the higher education institutions. Many presidents and the Council of the university relied on the framework according to the law and regulations from the Office of Higher Education Commission and quality assurance system of Office of National Educational Standards and Quality Assessment (ONESQA). Notwithstanding that, the current framework does not address the management issues faced by the higher education institutions. It was found that the managerial staff of higher education institutions in Thailand realizes the importance of the good governance framework will lead to good governance in higher education institutions. The quality assurance system will support the good governance in higher education institutions in the high level.

The research results were in line with Kaewpichit (2009) who studied the good governance principles in Thai private higher education institutions. The elements the good governance principles in the private higher education institutions are 1) responsibility 2) rules of law and equity 3) transparency 4) values 5) stability 6) participation 7) morals and ethics and 8) exercise of power. The eight elements are suitable and applicable to the context and scope of this research appropriate. While Intonpairote (No date) investigated good governance in Australian universities found that the federal government of Australia has issued the law for corporate governance of public and private higher education institutions called the National Governance Protocols (NGPs) for practice of the university council and management executives of all universities. First, the requirements state that the universities define the objectives and missions in the university Act. Secondly, the universities must define the roles, the Code of Conduct and the penalties of the university council. Thirdly, the universities must accept the systemic appointment of the university council. Fourth,

they must enact the appeal system within their institutions. Fifth, the universities need to assess and manage the risks that may occur. Sixth, the university council must accept the National Governance Protocols. Seventh the university council shall provide the development projects for its committee. The university council will monitor the governance of their respective university and set the procedure accordingly.

2. The strategy, the process, application of ethics in the organizations; the leadership and vision of the management; knowledge, understanding and awareness of staff across the organization; system and a mechanism for applying ethics in the framework; the integration of ethics in higher education institutions into the mission of the institutions; and compliance, monitoring and evaluating the outcomes and the management of ethical higher education institutions positively correlate with the management of ethical higher education institutions at the level of .05 significance. This may be because the management of ethical higher education institutions is not a only the duty of the senior management staff, but a shared responsibility of all staff in the institutions that requires the collaboration to develop their higher education institution to be accepted on the basis of the missions of higher education e.g. teaching/learning, research, academic services and maintaining of the arts and culture. Therefore, the success of the management of ethical higher education institutions depend on a variety of factors. The strategy, the process, application of ethics in the organizations; the leadership and vision of the management; knowledge, understanding and awareness of staff across the organization; system and a mechanism for applying ethics in the framework; the integration of ethics in higher education institutions into the mission of the institutions; and compliance, monitoring and evaluating the outcomes and the management of ethical higher education institutions must be combined for higher education institutions to fulfill their missions. That is when the society to know that a higher education institution acknowledge the roles and responsibilities and can be depended on.

The Office of the Higher Education Commission (2009) set guidelines, objective and goals for the management of higher education institutions including the productivity and efficiency that meet the needs and expectations of the country and the entrepreneurs that differ on the ethical and moral basis. merit. Changkwanyuan (2011: 17-18) states that the University is the educational institutions and part of the education. A part of education is ethics that is training people to be a good and ethical person. Universities have to emphasise ethics and morals. The staff of the university must be ethical person. The management of higher education institutions must be ethical system by taken ethics into account for the students to realise the importance of ethics and later lead to the life's principles. Universities have a part that create good society which include ethical members. This is also related to a good family, educational institutions and society. Universities must adhere to the ethics and continue with the ethics in all matters. Kamboonrat and Suthammanon (2014) studied leadership that is appropriate to the management of higher education institutions based on the criteria of the education quality outcome for the excellence of operation. The research shows that management of ethics and morals, leadership development, self-governance, and volunteer and caring influence the success of a higher education institution based on the criteria of the education quality outcome for the excellence of operation.

## **Recommendations**

1. The Higher education institutions of Thailand are confronting challenges and changes. From the study, the managerial staff, academics and general staff agreed with the management of ethical higher education institutions overall and in each area. It is recommended that Thai higher education institutions must use the ethical mechanism to lead to the development of the efficiency and productivity in the performance of various tasks. There is also a need for the development of tangible outcomes of the operation and the process in monitor, inspection and evaluation of the performance of the ethical higher education institutions in all levels from the university council, executives, faculty and staff continuously.
2. From the study, it was found that all factors are positively correlated with the management of ethical higher education institutions at the statistical significance level of .05 from the high to low. The compliance, monitoring and evaluating the outcomes is ranked in the first order. Therefore, the higher education institutions should define the clear format and method of compliance, monitoring and evaluating the outcomes. They can incorporate such format and method in the quality assurance system and mechanism. This will be the tool for the management from input, process and products and outcomes of the operation. For the relevance and application of the moral higher education institutions to fulfill its goal of efficient management.

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***Blended vis-à-vis Face-to-Face Courses:  
The Effect of Delivery Mode on Adult Learners' Performance***

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**Abstract**

Blended courses, which combine online and face-to-face delivery, are rapidly gaining traction in educational institutions in recent years because of the many benefits they offer. This study provides insights on determinants that affect learners' performance for blended vis-à-vis face-to-face delivery mode across semesters in the Singapore University of Social Sciences (SUSS, formerly known as SIM University or UniSIM). It also illustrates the application of learning analytics in a learning environment catered mainly to working adults. The findings clearly indicated that there is no optimal course design as the appropriate design varies depending on the nature, level, discipline and coursework component of the course. Universities can consider these determinants when designing their courses to maximise the benefits of both blended and face-to-face courses.

Keywords: blended learning, course design, learning analytics, data mining

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## Introduction

Blended courses that combine both online and face-to-face learning attempt to capture the unique benefits of online and face-to-face courses. Higher success rate and lower withdrawal rate are just two of the key benefits observed in blended courses in comparison to face-to-face and online courses (Moskal et al., 2013). Many early studies on blended courses focused on the various methods of teaching and the introduction of innovations (López-Pérez et al., 2011). Only a few research studies examine the determinants that impact the performance of learners in blended courses. This study aims to bridge this gap in the literature.

In particular, this study examines course determinants such as the course discipline (e.g., accountancy, finance, sociology...etc), nature (i.e., qualitative, quantitative or mixed), assessment method (e.g., written examination or project) and level (i.e., beginner, intermediate or advanced). Analysis is performed at a course level for both blended and face-to-face courses offered in Singapore University of Social Sciences (SUSS, formerly known as SIM University or UniSIM) from 2014 to 2016. SUSS is a university that caters primarily to working adults, and has a mission to provide lifelong education that equips learners to serve society.

The variable of interest is the average final score of learners. The effect of time (i.e., whether determinants of academic performance change over time) is also investigated. Data mining techniques such as decision trees and logistics regression are used to perform the analysis.

This study can provide additional insights to the current literature as it focuses on determinants that affect learners' performance for blended vis-à-vis face-to-face delivery mode across time. It also discusses the improvement that blended courses had brought about in the learning outcomes of learners. With a better understanding of the determinants, universities can better structure their courses to exploit the benefits of both blended and face-to-face courses.

The remaining sections discuss the relevant literature, the methods and analysis used in the study, recommendations for the design of courses based on the research findings, and suggestions for future research.

## Literature Review

This review of literature examines prior studies in two areas: the benefits and challenges that blended courses have brought about, and the improvement that blended courses have contributed to learning outcomes.

Vaughan (2007) discussed the benefits and challenges of blended courses based on the views gathered from learners, faculty and administration who had direct experience with this mode of delivery. Both learners and faculty mentioned that time flexibility was one of the key benefits of blended courses. Smyth et al. (2012) reported that learners were able to manage the pace and location of their learning better. Also, faculty were able to make better use of time and technology to resolve course problems and develop new learning activities (Garham & Kaleta, 2002). Higher success rate and lower withdrawal rate were observed in comparison to face-

to-face courses (López-Pérez et al., 2011). Faculty interaction and engagement with learners were also enhanced and this could be due to the creation of online communities (Aycock et al., 2002). Blended courses benefits not only the learners but the institutions as well. For example, reduction in class time brought about a decrease in space requirements, which in turn helped institutions lower their rental expenses (Young, 2002).

Despite the benefits listed above, blended courses are not without challenges. Learners new to blended courses often have the misconceived impression that fewer classes mean a lighter workload (Aycock et al., 2002). Also, blended courses require the learners to take on a more active learning role as compared to face-to-face courses and they may not be prepared to take on this new role (Vaughan, 2007). In addition, faculty may need to spend more time to plan and develop a blended course – it has been suggested that the amount of time taken to plan and develop a large enrolment and blended course is two to three times more than a similar face-to-face course (Johnson, 2002). New skills may also need to be acquired by faculty to facilitate online learning (Voos, 2003).

In view of the benefits and challenges, blended courses are not about delivering the same content in a new mode (Garrison & Kanuka, 2004). There is no best blended course design that suits all courses; the appropriate design varies depending on the nature and discipline of the course, the students, the instructor and the technology available (Garrison & Vaughan, 2008). In this study, the nature and discipline of the course are examined alongside with the other variables mentioned earlier.

Melton et al.'s (2009) study showed that learners taking a traditional general health course via the blended mode generally had higher satisfaction and better grades as compared to learners taking it via the face-to-face mode. In the study, learners were given the choice to select the course mode (i.e., blended or face-to-face). The blended mode comprised two parts: the in-class part that was structured around activities and the online part that was content based. Face-to-face courses were delivered through lectures with the instructor serving as the disseminator of knowledge. The learners enrolled in face-to-face courses did not have access to online information, as contrasted with their counterparts in the blended courses.

Melton et al. (2009) found two benefits associated with the blended courses. However, it could be argued that the finding of higher satisfaction and better grades might be due to the variation in information provided. In this study, learners do not select the mode of course delivery as only one mode is available for each course. This might eliminate the self-selection effect to ensure fairer comparison of the two modes of delivery. Courses delivered through the blended mode comprise three face-to-face seminars and the course content are delivered online. Courses delivered through the face-to-face mode comprise six face-to-face seminars. This helps to ensure consistency in the information disseminated to the learners.

## Method

In this study, the final grade distributions of 2527 courses were obtained from January 2014 to December 2016, a total of 6 semesters. Only undergraduate courses in SUSS with at least 5 learners were included. An average grade based on the final grade distribution of the learners was computed for each course. This average grade was further grouped into 2 categories: courses with an average grade falling within the second class honours classification and above (termed as “Better”) and courses with a lower average grade (termed as “Average”). This variable “Class” comprised the variable of interest.

Of the 2527 courses included in the study, 1462 courses were classified as “Better” and the remaining 1065 courses “Average”.

A total of nine variables was used as inputs (i.e., independent variables) in this study: the school offering the course, the semester the course was offered, course discipline, course level, mode of final assessment, weightage of the final assessment in the final grade, qualitative flag, quantitative flag and course delivery mode. Details of the variables are provided in Table 1. These factors are evaluated with respect to the performance of the learners. Descriptive statistics of the courses are summarised in Table 2.

**Table 1. Variables used to evaluate the performance of learners at a course level**

Variable Name	Description	Possible Values	Role
Class	Average performance of learners in the course	Better, Average	Target
School	School that offers the course	School 1 that offers mainly social services courses (Sch1)	Input
		School 2 that offers mainly social sciences courses (Sch2)	
		School 3 that offers mainly business courses (Sch3)	
		School 4 that offers mainly technology courses (Sch4)	
Sem	Semester that the course was offered	"1" for January 2014, "2" for July 2014, ..., "6" for July 2016	Input
Discipline	Discipline that the course belongs to	Disc1, Disc2, ..., Disc32 (e.g., Accountancy, Counselling, Electronics...)	Input
Level	Course level	1, 2, 3, 4 (from introductory to advanced)	Input
ExamMode	Mode of final assessment	Written examination or Project	Input
Weightage	Weightage of the final assessment to the final grade	Low or High	Input
Qualitative	Whether the course is qualitative in nature	"1" for "yes", "0" for "no"	Input
Quantitative	Whether the course is quantitative in nature	"1" for "yes", "0" for "no"	Input
CourseMode	Delivery mode of the course	Blended, Face-to-Face (F2F)	Input
CourseCode	Course code	BUS100, ACC101, CLS107 etc	Identifier

*Note: Sensitive information had been masked in compliance with confidentiality requirements.*

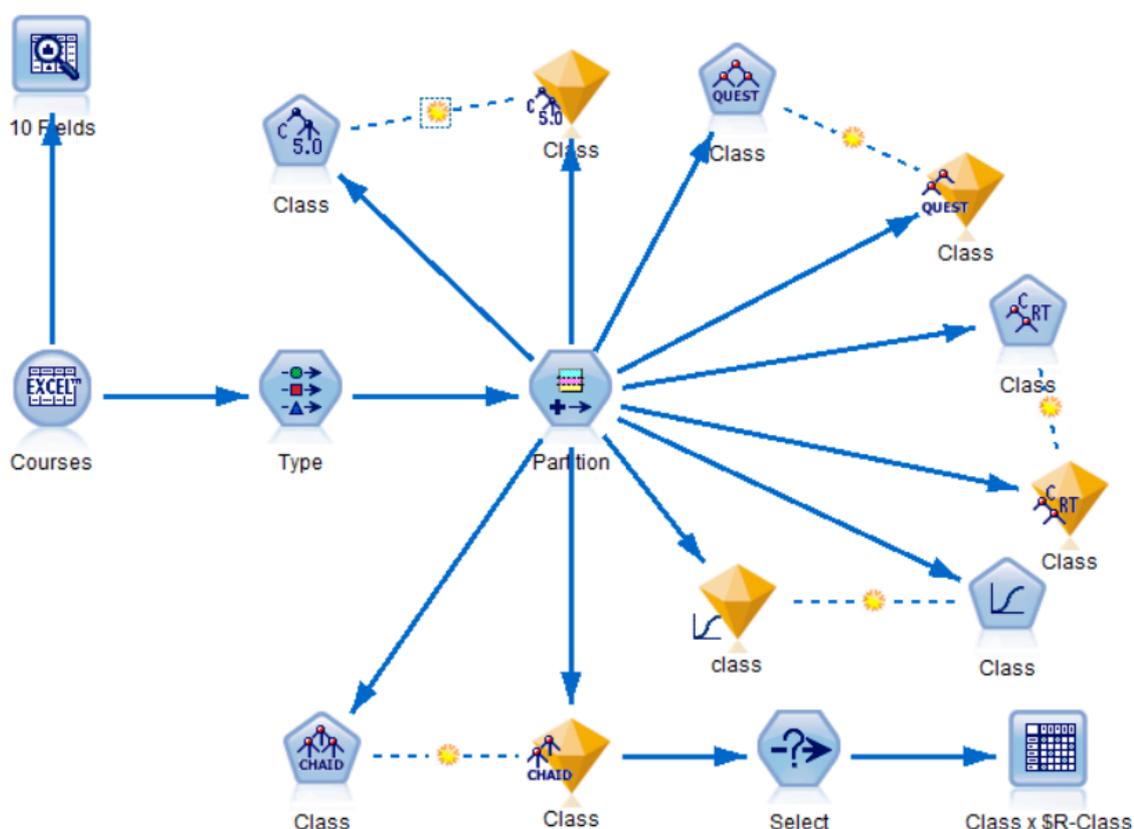
**Table 2. Descriptive statistics of the course variables (n=2527)**

Variable Name	Possible Values	Count	Percentage
Class	Average	1462	58%
	Better	1065	42%
School	Sch1	479	19%
	Sch2	720	28%
	Sch3	486	19%
	Sch4	842	33%
Semester	1	405	16%
	2	418	17%
	3	404	16%
	4	433	17%
	5	426	17%
	6	441	17%
Discipline	There are 32 unique disciplines	-	-
Level	1	470	19%
	2	896	35%
	3	1031	41%
	4	130	5%
ExamMode	Project	492	19%
	Written	2035	81%
Weightage	Low	1646	65%
	High	881	35%
Qualitative	1	2179	86%
	0	348	14%
Quantitative	1	451	18%
	0	2076	82%
CourseMode	Blended	1105	44%
	F2F	1422	56%

In this learning analytics study, data mining was used to analyse the data to gain a better understanding of the learning environment and outcomes. Learning analytics at its core is the collection and analysis of data associated with learning (Brown, 2011). In recent years, there has been an increase in adoption of learning analytics in educational institutions as it offers a promising approach to better understand learners' learning behaviors to improve their retention and success through appropriate intervention (Tseng and Walsh, 2016).

Data mining techniques such as decision trees (C5.0, CHAID, C&RT and QUEST) and logistic regression were used to evaluate learner's performance and its determinants in blended and face-to-face courses, as shown in Figure 1.

**Figure 1. Data Mining Stream**

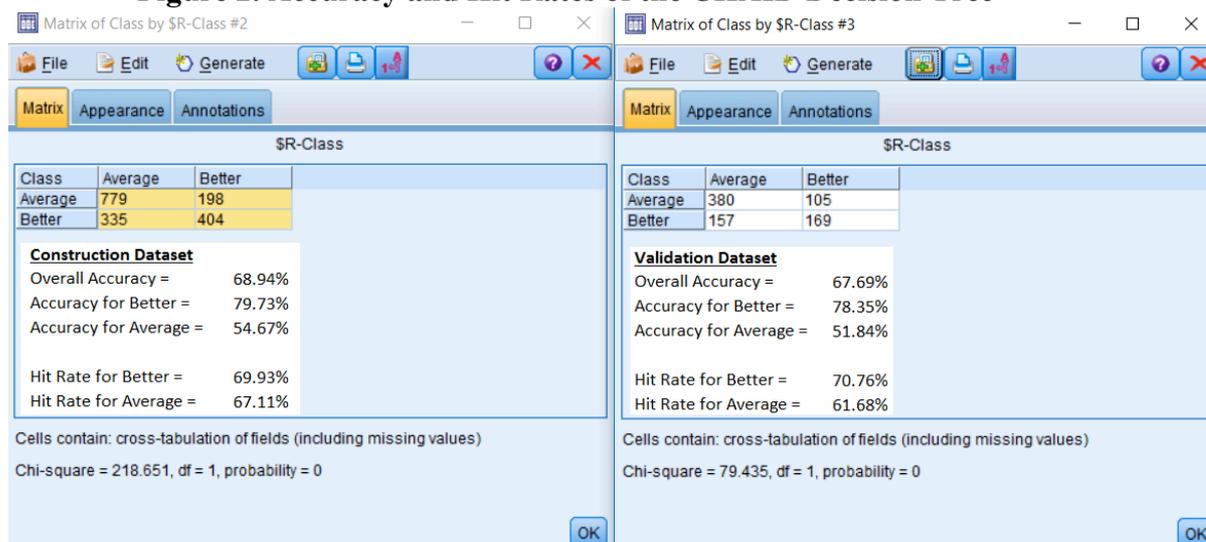


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In the study, 70% of the data (i.e., 1716 courses selected randomly) were used to construct the data mining model and 30% (i.e., 811 courses) to validate the model. Both the accuracy and hit rates were used to validate the adequacy of the model.

**Findings**

From an evaluation of the models, the CHAID decision tree is selected as the final model as it has the highest accuracy rate of 67.7% on the validation dataset. The model results are summarised in Figure 2. A better understanding of the learner’s performance and its determinants in blended and face-to-face courses can be obtained by tracing the paths of the decision tree.

**Figure 2. Accuracy and Hit Rates of the CHAID Decision Tree**

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The decision tree results (as shown in Figure 3) indicate that the blended mode of delivery is associated with better performance for School 1 and 3 courses with a heavy non-written examination component (i.e., Projects). This finding is illustrated in Nodes 9 and 10 and is consistent with prior findings; for example, López-Pérez et al. (2011) and Melton et al. (2009) reported that learners in blended courses obtained better grades. It can be argued learners enrolled in blended courses gain a better understanding of the content as the delivery mode encourages self-directed learning.

Nodes 30 and 31 show that learners in discipline 26 (social services related) performed better in face-to-face courses with written examinations as compared to their counterparts in blended courses with written examinations. This is consistent with Collins' et al. (2002) concern that the use of technology in social services related courses might reduce the importance of meaningful human interaction, suggesting that social services related courses might be best taught via a face-to-face mode.

The decision tree results also show that learners performed better for introductory School 4 (technology) courses with written examination components that were delivered through the blended mode (Node 32) as compared to those delivered via the face-to-face mode (Node 33). For more advanced non-qualitative courses (i.e., level 2 quantitative courses) with written examination components in School 4, learners performed better for courses delivered via a face-to-face mode (Node 39) as compared to courses delivered via a blended mode (Node 38). This may be expected because as the level of difficulty of School 4 courses increases, more practical experience and explanation/interaction (especially for quantitative courses) may be required. With blended courses, face-to-face interaction is reduced and online learning does not provide the same extent of learning.

It is noted in this study that time has no effect on the academic performance of the learners with regard to the mode of course delivery. However, time does have an impact on the academic performance of the learners (Nodes 26 to 29) for discipline 9 (business related), 10 (human development related) and 15 (social services related). It

is also noted that from 2014 to 2016, there was a revamp of the curriculum with the removal of obsolete courses and addition of new courses in these programmes. Collectively, the findings clearly emphasise that the appropriate course design varies depending not only on the nature and discipline of the course but also the level and coursework component of the course. Universities can consider these determinants when designing their courses to maximise the benefits of both blended and face-to-face courses of learners. The relevant findings are summarised in Table 3.

**Table 3. Summarised Findings**

<b><u>Blended Delivery Mode</u></b>	<b><u>Face-to-Face Delivery Mode</u></b>
Appropriate for: 1) introductory courses 2) social services and business courses with heavier coursework components	Appropriate for: 1) advanced quantitative courses 2) written examination social services courses that require human interaction (e.g., social work and counselling)

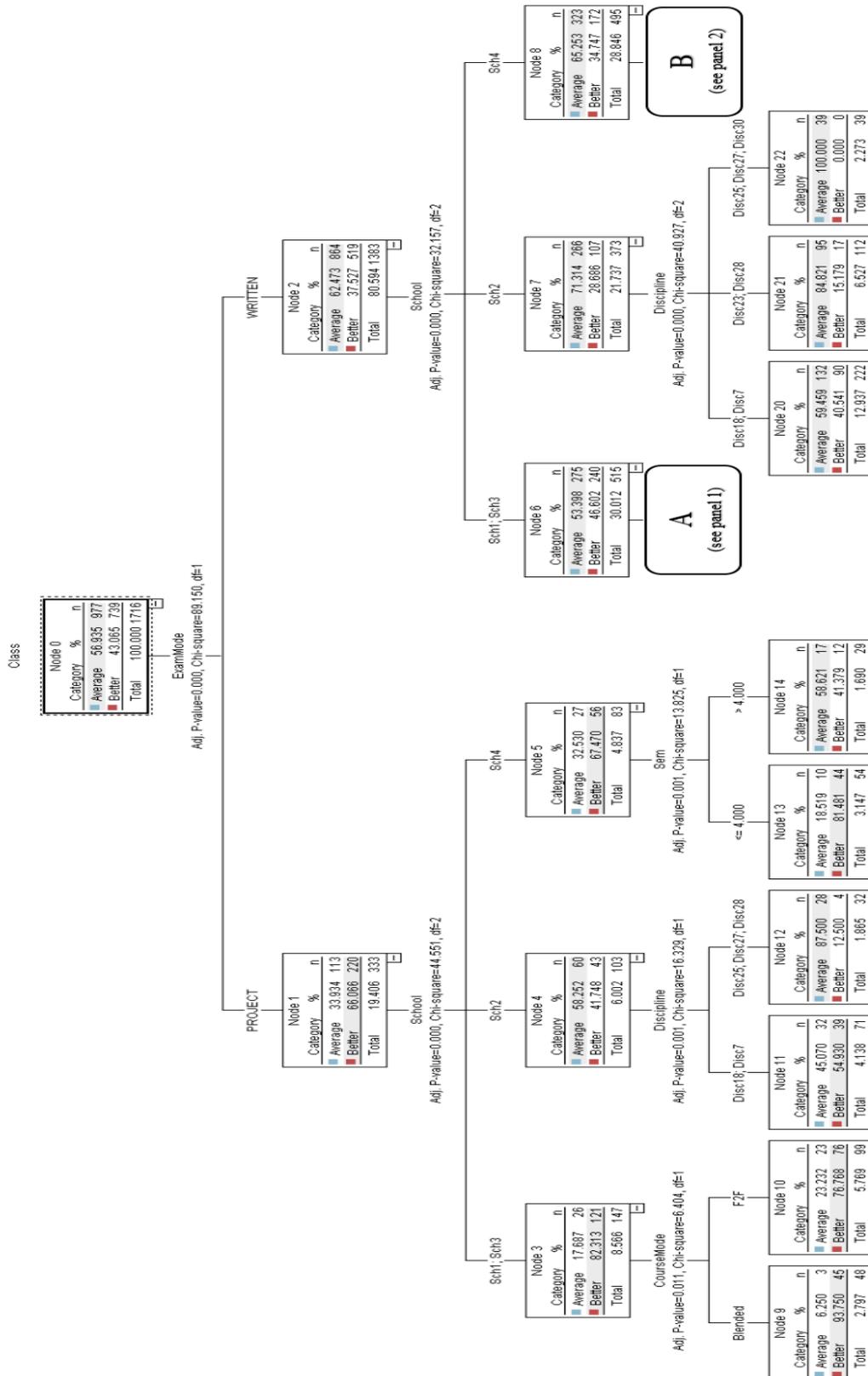
## **Conclusion**

This study aims to gain a better understanding of the determinants associated with the performance of learners in blended courses vis-à-vis in face-to-face courses across time. Based on the findings and to maximise the benefits of both blended and face-to-face courses, universities can consider designing higher level quantitative courses with more face-to-face delivery and written examination social services courses (such as social work and counselling) that required more meaningful human interaction via face-to-face mode. Furthermore, universities offering social services and business courses with heavier coursework components can consider delivering these courses in a blended mode.

Each course in SUSS is offered only in one specified delivery mode; hence, comparative study of a course offered in different delivery modes is not possible. Further research can study courses that are offered in both the blended and face-to-face delivery modes. Future research can also consider the role of faculty and course assessments as well as learners' attributes (e.g., demographics and prior academic performance) in comparing the learners' learning experience and academic performance associated with different delivery modes.

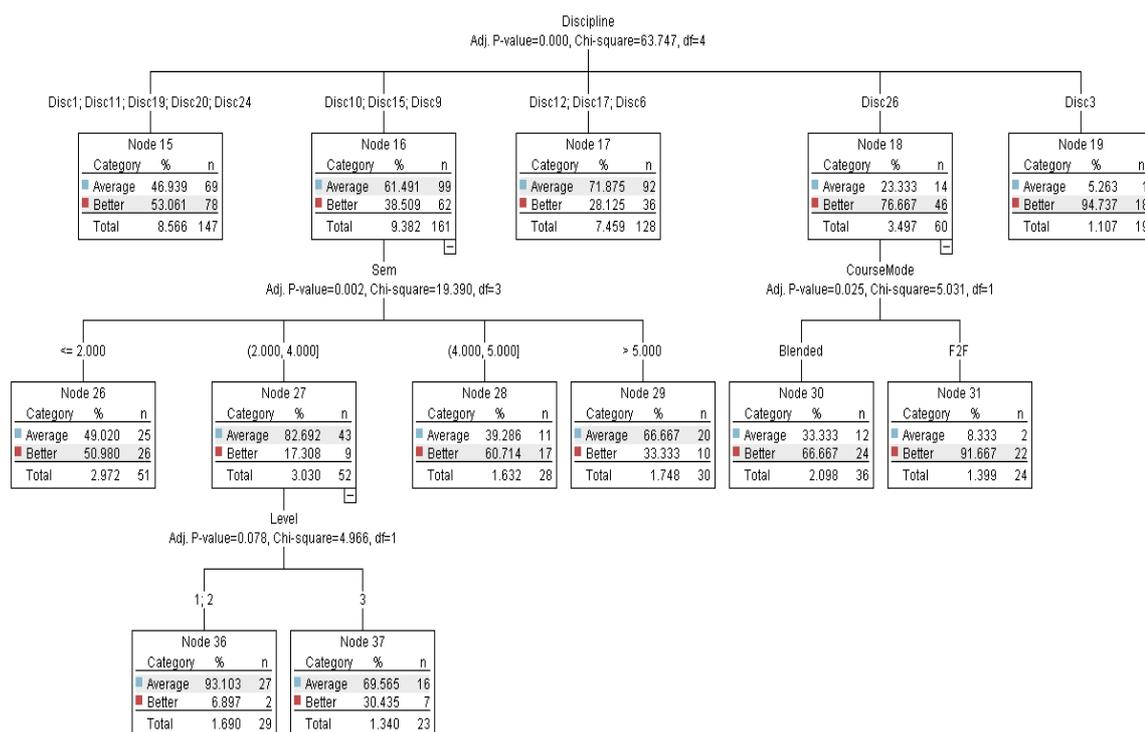
It is hoped that this study has provided insights into the effects of the mode of course delivery on the academic performance of learners, and the determinants of such effects.

Figure 3. Visualisation of the CHAID Decision Tree



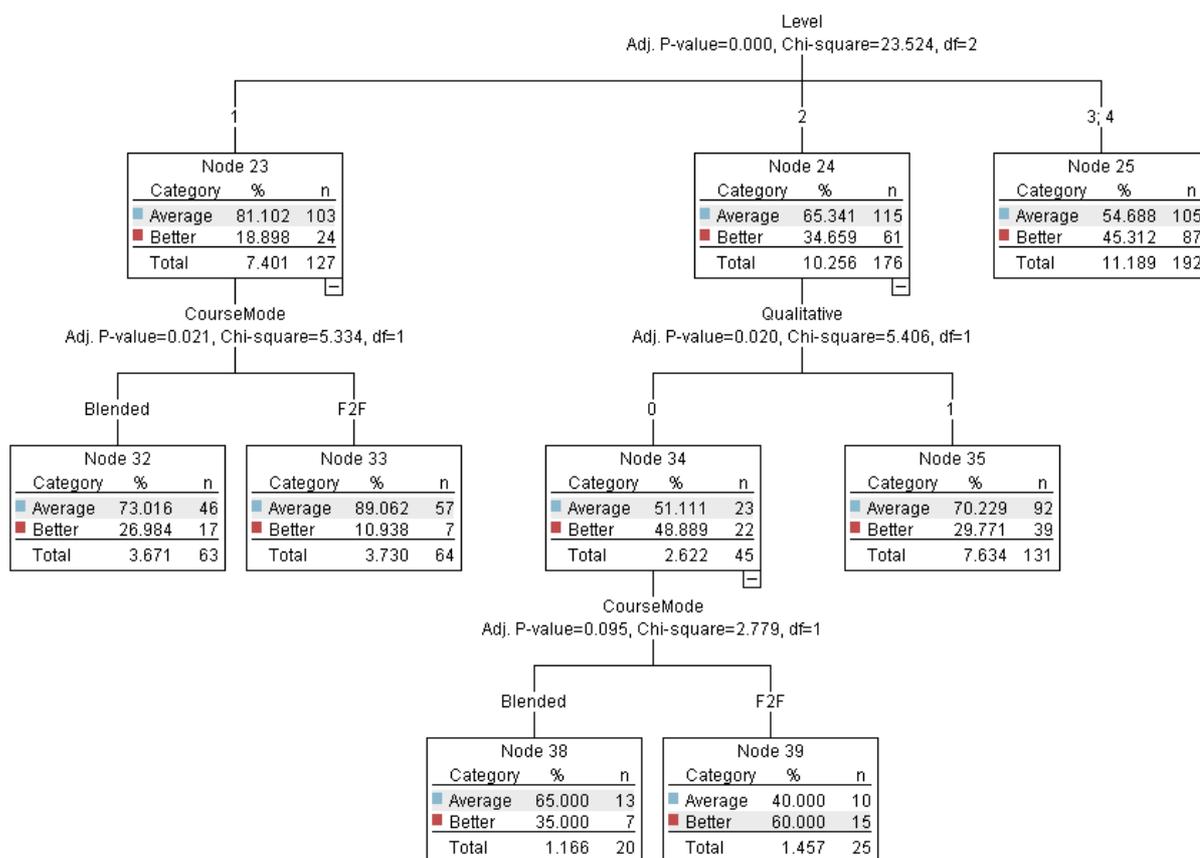
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### Panel 1 - A



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### Panel 2 - B



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## *Challenges Singapore Early Childhood Centre Leaders Face*

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The Asian Conference on Education 2017  
Official Conference Proceedings

### **Abstract**

In accord with emphasis made by the local government authority for early childhood services and education in Singapore, namely Early Childhood Development Agency (ECDA) on the importance of effective leadership in early childhood settings, this research investigated the challenges that a sample of centre leaders faced in accomplishing their roles and responsibilities. Thirty experienced centre leaders were interviewed face to face for this research. Amongst the many challenges identified were juggling administrative work and managing diverse staff while ensuring they met licensing and ECDA's quality certification requirements. These were the most pressing concerns the leaders faced. Other challenges included efforts needed in raising professionalism in the centre and in the field; the need for support in managing children with special needs and meeting the expectations of parents. In order for the leaders to overcome those challenges, management support was deemed necessary in rendering assistance especially towards administrative duties. Most importantly, the centre leaders agreed that fundamentally, they needed to improve their own mindset and work attitudes in order to progress as effective leaders. Another interesting finding of the research was that although the centre leaders felt stressed and challenged, most mentioned that they have actually gained a certain level of job satisfactions especially when seeing some of their staff grow and become better teachers and witnessing noticeable progress in the children.

Keywords: Leadership challenges; early childhood leaders; early childhood centre leaders

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## Introduction

Professional leadership is important, because very often if you have a very good leader in a centre, it makes all the difference

Ang, 2012, p.94

Many studies have found that the quality of an early childhood centre relies very much on the leadership at the helm of each early childhood establishment (Rodd, 2013; Muijs, Aubrey, Harris, and Briggs, 2004). With much discussions and critiques highlighting the need to monitor professionalism in early childhood industry, the focus on leadership seems to be heightened and emphasised. Research has shown that the quality and practice of leadership is linked to consistent and demonstrable way in improving outcomes and educational equity in children (Mitgang, 2012, p. 3). In a local study commissioned by the Lien Foundation, Singapore, Ang (2012) reiterates that leadership is recognized as an essential element in the provision of quality care and services.

Often, the roles of the leader are ambiguous and complex. Given the unclear boundaries, multiple responsibilities and the norm of wearing many hats as a centre leader, it is not uncommon that these leaders often feel that they are not duly supported in many ways. Hence, that is what makes leadership challenging.

It was the aim of this study therefore, to identify and then understand the challenges EC centre leaders face and what are the supports they need to assist them in becoming a more efficient and effective leader.

## Background and purposes of the study

The recent intense focus on the importance of leadership in ensuring quality early childhood education, is putting more pressure on centre leaders to perform and to lead their staff and children to greater heights. Leadership is one of the criterion being measured in SPARK, the local Singapore's quality assessment tool, used to determine the quality of an early childhood centre in Singapore (Early Childhood Development Agency (ECDA), 2014). Hill and Lewis (2012), in their discussion of how early childhood leadership should look like, emphasise that effective leadership is crucial to ensuring the success of education and care settings. With this increasing demand, there is added responsibility on centre leaders, thus adding to the list of challenges these leaders face. Rodd (2006), advocates the need for centre leaders to overcome the challenges as it will help to bring the team they are leading to the next level (p. 157).

The purpose of this study was to examine and find evidence to understand the myriad of challenges the centre leaders face and how they were able to overcome those challenges. Parallel to this, the study investigated the kind of support centre leaders needed to help them become better leaders. The findings of this study may help the relevant agencies and employers to better comprehend the needs of these centre leaders and thus render necessary help needed by them.

The study hoped to achieve the following objectives.

1. Identify the different challenges that the centre leaders face
2. Understand the kind of support the centre leaders deemed necessary to help them become effective leaders

### Research Question

The central question addressed here is what were the challenges centre leaders in the study faced? This is further broken down into five main categories which include: Challenges in managing and administrating centres; challenges in managing staff; challenges in promoting professionalism in self and staff; satisfaction as a leader and lastly any other challenges which might not be covered in any of the categories here.

### Methodology

#### The Singapore Preschool System

In Singapore, with the exception of Ministry of Education kindergarten, preschools (both kindergarten and childcare centres) are run by private, community, religious, social or business organizations, which are overseen by the Early Childhood Agency (ECDA). These preschool centres are further categorized into private, anchor operators and partner operators. Anchor operators scheme first introduced in 2009 refers to preschool centres, run by bigger organisations that are placed under a scheme that provides funding support to selected operators to increase access to good quality and affordable early childhood care and education, especially for children from lower income or disadvantaged backgrounds (Ministry of Social and Family Development, 2014). Currently there are 5 anchor operators selected by ECDA.

#### Background of Participants

This is a small scale study that involved a total of 30 centre leaders from various early childhood organizations, either **anchor operators** or private settings. The participants were either heading a childcare centre or a kindergarten and varied in qualifications and experiences. The following table demonstrates the profile and background of participants.

Age	20s	30s	40s	50s
	7	11	9	3
Professional Qualification	Diploma in Leadership with Diploma in Teaching		Diploma in Leadership with Bachelor in Early Childhood	
	13 (including 2 undergoing degree)		17 (including 2 with Masters and 1 undergoing Masters)	
No of years as a Centre Leader	2-3 years	4-5 years	6-8 years	More than 8 years
	12	8	1	9

## **Method**

All 30 participants were interviewed by the researchers. A qualitative face to face interview was selected as a mode of data collection to add credibility and validity to the study. Face to face interview, though time consuming offers better insight and nuances for a research study (Giorgi, 2009, p. 122). Though the sample was small, nevertheless, we still sought out deliberately to leaders from two biggest anchor organisations and private operators in order to have a qualitative in-depth understanding of the current phenomenon of challenges faced by these leaders.

## **Literature Review**

### **1. Leadership in Early Childhood**

Leadership in early childhood education assumes its importance in recent years. Many studies have linked school success with leadership where ‘leaders play an important part in the provision of quality service’ (Dunlop, 2005, p. 4).

The definitions of leadership in early childhood education vary in different contexts leaders serve due to the vague nature of tasks and the styles of leaders (Rodd, 2013). In Singapore, the roles of early childhood leaders vary as some may hold differing positions such as administrators, principals and supervisors. In conjunction, senior teachers and teachers are given leadership roles in the workplace.

HM Inspectorate of Education (2000) as cited in Dunlop (2008), defines leadership as visionary, based on shared values where leaders are expected to motivate and provide direction to staff.

“In general, leadership is about vision and influence.”  
(Rodd, 2006, p.11)

Rodd (2006), believes that it is the leader’s responsibility to have a good vision for achieving quality status and thus should possess the ability to influence and convince other people of the need to do so. This is supported by Sciarra and Dorsey (2006), who reiterate the necessity for leaders to have capabilities in guiding “followers to work toward the changes described in the organisation’s vision statement” (p. 6). Leadership is thus not a stand-alone entity, but involves a group activity with a leader as the motivating figure leading the group forward. Pound (2008) on the other hand, defines leadership as the style and role one adopts. More recently, Bloom and Abel (2015) stress the importance of leadership with its strong vital influence on team in setting organizational culture and climate.

### **2. Challenges in Early Childhood Leadership**

Due to the ambiguity of the job-scope, a leader tends to carry out multiple tasks in a preschool setting. In their study on leadership tasks in Early Childhood Education, Hujala

and Eskelinen (2013) confirmed that leadership tasks vary significant and the responsibilities and roles of leadership vary too in different contexts of leaders (Hujala, Heikka & Halttunen, 2011 as cited in Hujala & Eskelinen, 2013). Many research studies have placed strong emphasis on leadership which is the pivotal point in ensuring high quality Early Childhood Education programme (Nupponen, 2006; Muijs, Aubrey, Harris, & Briggs, 2004; Rodd, 2013). Bloom and Bella (2005) reiterated that strong leadership is critical in creating and maintaining a culture of high quality programme that promotes optimal growth and development in children.

There have been an emerging and paramount importance of training practitioners fast for leadership roles as the Singapore government places emphasis to provide quality pre-school settings for families by opening up 200 more childcare centres by year 2018 (MSF, 2012). Hence, it is an emerging and urgent trend to train as many practitioners to fill in the roles of leadership.

### **3. The Support Needed by Early Childhood Leaders**

With the heightened recognition of Early Childhood Education globally and a high demand of qualified professionals needed in the field, it is essential and important to support and prepare a generation of Early Childhood leaders. Ramey (2015) emphasizes the need in supporting and promoting early childhood leadership which is essentially beneficial in ‘shaping the profession and ensuring excellence in education and care of young children’ (p.7). As leaders play valuable roles in carrying out multiple tasks in the early childhood setting (Hujala & Eskelinen, 2013), and making their leadership visible by building links and being dynamic. Recent research by Walsh, Jeon and Davies (2014) has also shown that leaders impact changes as a result of building active links within the community and the early childhood setting.

### **Findings and Discussions**

The participants were asked questions that are divided into 2 parts, the challenges they face and ways in overcoming those challenges. Below are the detailed responses given by the participants.

## Part 1 - aspects of challenges

### 1. Challenges in Managing and Administrating Centre



Some 21 out of 30 participants cited administrative duties as the biggest challenge. Besides being busy running the centre, leaders are also expected to do administrative work such as collecting school fees, book fees and enrolling a new child. These are on top of writing the various reports such as budget report, updating of all required documents from the various Ministries that are to be submitted to the management or headquarters. Next on the list are time management and multitasking, where 17 out of 30 participants see as the next biggest challenge. Multi-tasking affected an effective time-management. Monitoring the effectiveness of the centre's curriculum and programme is also seen as a challenge to 16 participants, who reasoned that the administration work hinders them from being an effective curriculum leader.

Another 13 out of 30 participants find demanding parents a challenge; that is quite common in many centres. The rising demands and expectations of parents are something that they have to manage and resolve every now and then. While some cases are quick to be resolved, others may take longer period. In the raise of focus on quality, SPARK is a force the leaders have to reckon with. Achieving SPARK certification and then maintaining the requirements also demand a lot of monitoring, according to 9 participants.

Some 8 out of 30 participants felt that unclear job-scope and responsibilities could lead to confusion and low job satisfaction. And 2 participants are concerned about the increase in initiatives from ECDA that sometimes take them out of the centres too many time for meetings and workshops.

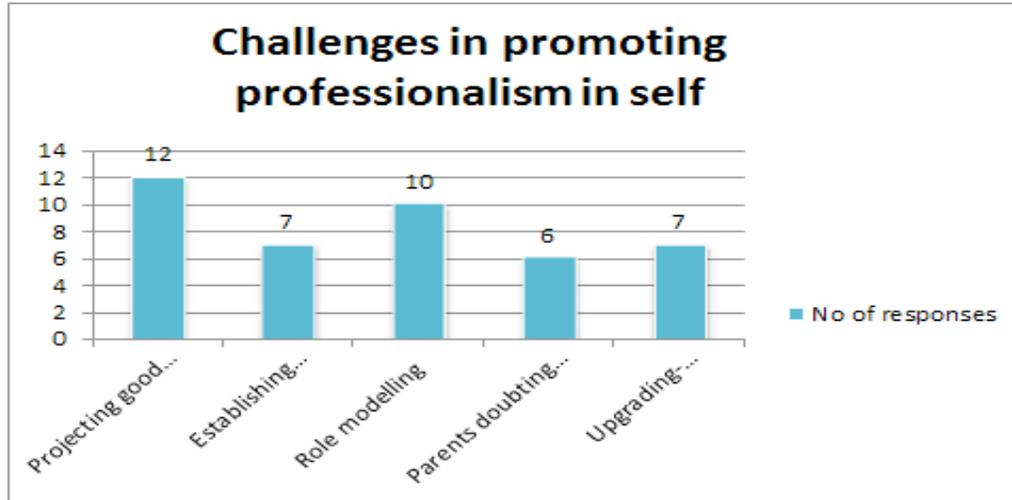
## 2. Challenges in managing staff



Another area of challenge to the centre leaders are that of managing staff. It was found that 17 out of 30 participants felt that dealing with different personalities and style to be the most challenging. This can be further aggravated if the teachers have bad attitude and aptitude. With the increasing number of foreign teachers, communication can be greatly challenge too according to 15 participants, especially if they are non-English speaking teachers. Documents thus have to be translated in order to avoid further misunderstandings. Efforts to creating good team dynamics may also be compromised. 12 participants raised the issues of dealing with teachers who are resistant to changes. Most of these teachers have very little sense of ownership towards the centre. Such are the effects of bad communication.

There were 13 participants who cited mentoring teachers as also being challenging as they sometimes could not find time to do so. As a result some centres do away with mentoring system or rely on the more senior teachers to mentor the younger ones with or without proper mentoring plan. Sustaining teachers is thus another problem to deal with.

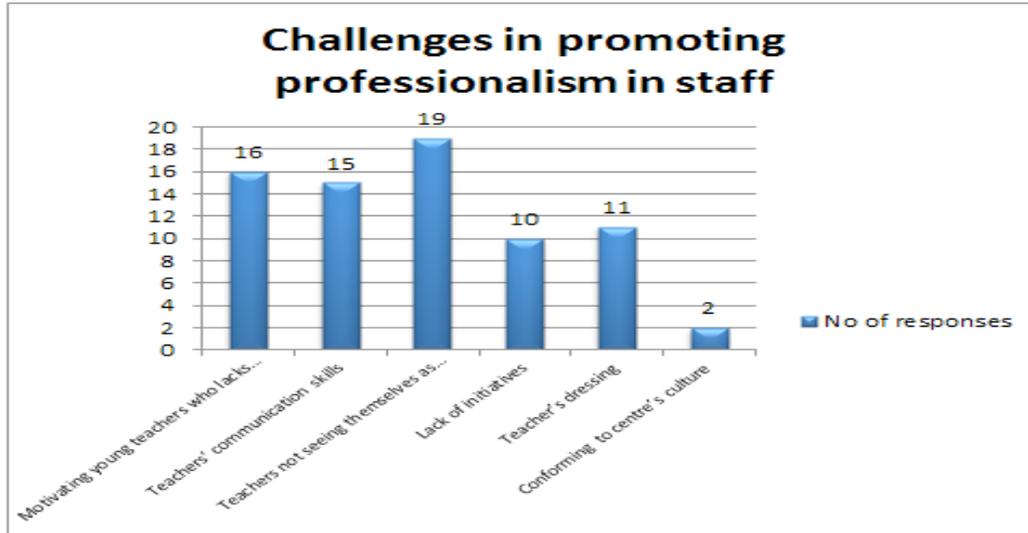
### 3. i. Challenges in promoting professionalism in Self



Quality demands professionalism. The centre principals listed the efforts to projecting good image as a challenge (12 out of 30). Being a leader would mean that they have to look, behave and project themselves as a professional, worthy the position they are shouldering. They have to constantly be a good role model (10 out of 30) to not only the staff, but children and parents as well. As much as they want to show example of executing lifelong learning, many centre leaders find themselves grappling with ability to upgrade themselves professionally as many face time and financial constraint to keep doing it (7 out of 30).

Establishing partnership with parents is another challenge to exercising professionalism. Some 7 out of 30 felt that the increasing demands and expectations of parents, sometimes hinder the effort made to partner parents. This is worse if the centre leader is seen young and inexperienced, thus increasing the doubts parents may have on credibility of young principals (6 out of 30).

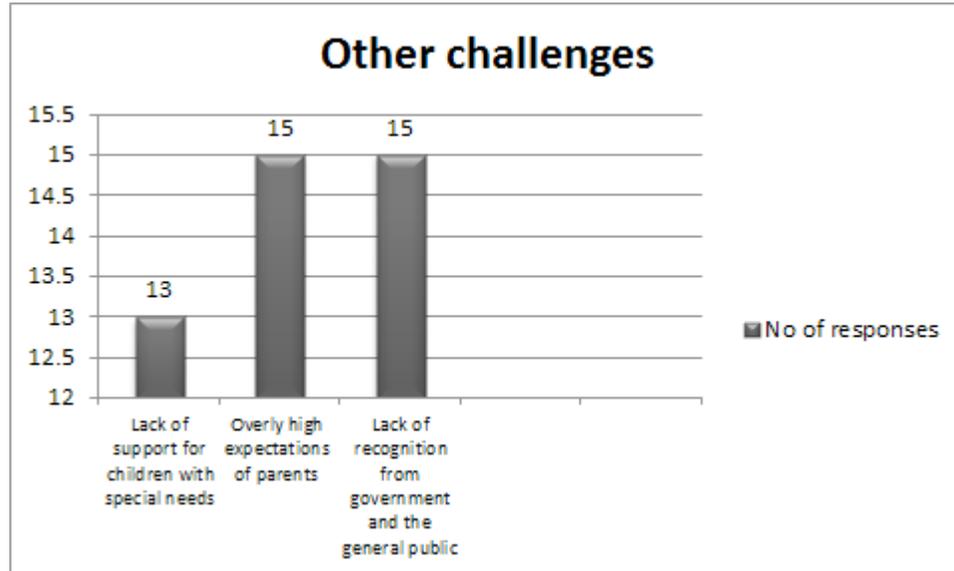
### 3. ii. Challenges in promoting professionalism in Staff



In promoting professionalism in teachers, the most challenging one to overcome is when teachers not seeing themselves as professionals (19 out of 30). The general public perspectives of teachers as being a mere caregiver, resulted in low self-esteem in many teachers. The young teachers especially may lost interest and feel demotivated to remain in this field. Inspiring them to remain in the early childhood profession therefore can be difficult (16 out of 30).

The teachers' personalities and traits would also hinder efforts in promoting professionalism. Many teachers lack communication skills (15 out of 30) and may have problems communicating effectively with parents and the general public. They do not dress appropriately sometimes (11 out of 30) and lack initiatives in taking up new challenges. In worst case scenario, staff have problems conforming to centre's culture as they are not open to other people's ideas and practices and thus not wanting to change (2 out of 30).

#### 4. Other challenges



Besides the above discussed challenges, the participants cited the following as factors that may affect their efficiency as a centre leader.

With the initiatives and measures undertaken by the Singapore government to include preschool children in the mainstream settings (MCYS, 2012), there has been an increase with children with diverse and identified learning needs in many of the ECE classrooms. 13 participants echoed a lack of support for all these children, citing lack of adequate resources such as external supports like the therapists or engaging an extra assistant teacher to help in their inclusionary settings.

Almost half of the participants (15 out of 30) reported that parent's expectations on the settings ranging from programming, the environment and quality of the teachers are significantly high and it is challenging trying to convince parents that the programme is right for their children. Another similar number specify exact number of participants stated that there is always a lack of recognition from the government and the general public with regards to early childhood education as compared to principals and teachers from the mainstream schools. They believe that this is a serious discourse to early childhood education where teachers play an essential role in laying the foundation for lifelong learning.

## 5. Satisfaction as a centre leader



Despite the many challenges, many centre leaders find job satisfaction in their work. The top on the list is when they receive positive feedbacks and accolades from parents (23 out of 30). Next on the list are satisfaction at seeing how much their staff grow (21 out of 30) and witnessing children achieving the various milestone and successes; 6 out of 30 participants are satisfied when the management show full support and 2 out of 30 cited supportive staff as a motivating factor.

### Part 2 - Ways of overcoming the challenges

#### 1. Self

In all, 28 out of 30 participants agreed that one way of overcoming the challenges is by preparing oneself to be opened to sustainable workable solutions. 18 out of 30 suggested empowering staff to take on various responsibilities. By delegating workload, they can avoid burnout and frustration in multitasking. This will also entail the necessity to devise good working support system, where help, not only for the centre leader but the staff is ensured and be readily available if needed. Networking with other centre leaders will also enhance their scope of resources whenever needed as mentioned by 13 of the participants. Involving and partnering parents and the community at large will also impacted on their efficiency as a centre leader (12 out of 30) and create a more transparent system.

However, the need to act as a professional is an essential to manage the challenges so as a leader, there is a need to be a good role model (9 out of 30) and be a reflective leader (2 out of 30) who is ready to take on new challenges. This will also mean that the centre leader should always look towards upgrading themselves and practices good time management to be able to juggle the different responsibilities (5 out of 30).

## 2. Management

The participants also hope that the management helps to lessen the challenges by providing centre based admin staff (15 out of 30) who will be able to handle administrative issues, thus offloading the centre principals from admin duties. There is also a need for management to ensure that more teachers receive adequate training on special needs and be ready to manage children with special needs in the centre without having to wait for specialised staff from the headquarters to come down to the centres (15 out of 30). 7 out of 30 participants hope that centre leaders will be equipped with soft skills such as counselling, listening skills and so on to better lead their staff. The participants also hoped for understanding and supportive management (5 out of 30) who constantly touching based with the ground and not only concern with enrolment (13 out of 30).

## 3. Governmental Agency

The participants also believed that the various governmental agencies could help enhance the public perspective of early childhood by giving more funding to help defray running cost (19 out of 30), promote EC professionals through roadshows, workshops and advertisements just like MOE's advertisement for teachers (21 out of 30) and declare Teacher's Day as a holiday for all child-care centres (9 out of 30), standardising salary and benefits (18 out of 30) that will help to streamline the salary scale for early childhood profession, amend the criteria for scholarship to consider the number of working years and not only educational qualifications (7 out of 30) and organise more professional learning circle for centre leaders. It will also help if a more training is developed for leaders, for example in topics such as challenges faced in running a centre (1 out of 30) and provide more subsidies/ funding for professional growth (4 out of 30).

The participants suggested that the number of childcare centres within the same vicinity to be closely monitored to avoid over-supply of centres (3 out of 30). A compulsory primary school partner could also be introduced (4 out of 30) as some preschool centres are having problems finding a primary school to partner. Last but not least, 4 participants hoped for a smaller class size with lower children to teacher ratio (2 out of 30).

## 4. Others

The participants suggested that a more assertive parent education on awareness of special needs and early childhood should be advocated (15 out of 30). There should be a greater collaboration between governmental bodies especially for children with special needs (12 out of 30) and this may involve better funding and expertise support for special needs (13 out of 30). And in order to encourage more centre leaders to stay, there is a need to look into work-life balance (3 out of 30) and a culture of sharing like visiting other centres and share expertise (1 out of 30).

## Summary and Conclusion

Greater emphasis on centre leadership has recently been emphasized by ECDA (ECDA, 2015). Therefore it is essential that the centre leaders be given all the support they need to become a more effective leader in the centre. The participants in this study have high awareness of the challenges they face on a daily basis and have even made suggestions as to how the current practice can better be improved. Nonetheless, this small study has identified that there are more challenges which are still highly complex. Thus a school leader who can hone their abilities to meet the challenges may become a highly successful school leaders (Whitehead, Boschee & Decker, 2013).

Despite all the challenges they have very high satisfaction in the job. Their passion and commitment go a long way in helping them to cope with the barriers and problems that come with their job. Sugrue (2005) stated that passion is central and crucial to the work of a centre leader which is often submerged. It is this kind of passion that should be given recognition and harness into lifelong commitment in the early childhood industry in Singapore. The lack of support on the other hand may result in burn-out and loss of interest.

The data and findings of this small scale study provide valuable insights into what leadership initiatives might require from all stakeholders to make them more viable and sustainable. This research also shows that most of the leaders experience and view the roles of leader as highly complex as they attempt to juggle multiple responsibilities and with no defined tasks revolving around the day to day operations in their settings. It is essential therefore for the related agencies and organisations to take heed of the suggestions made and to develop channels of assistance that can be rendered to centre leaders to sustain their interest and thus professionalism for the betterment of early childhood landscape in Singapore.

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***Effect Of Self-Paced Online Modules As Support For Classroom Instruction On Student Outcomes Of Grade 10 Miriam College High School Students***

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**Abstract**

The affordances of technology provide teachers innovative teaching methods (Wong, 2015; Parnell and Bartlett, 2012). In Miriam College High School (MCHS), an exclusive all-girls school in the Philippines, the academic programs (Science curricula), people (students, teachers), processes (procurement) and physical plant (Wi-Fi connectivity) have been shaped by e-learning. The 1:1 ratio of student-to-tablet PC and focused faculty training are aimed at optimizing lesson delivery modes by enabling teachers to provide students with self-paced, online, multimedia learning materials coupled with traditional classroom instruction. Through this, students acquire knowledge using various forms of media while learning essential 21st century skills. Six sections of Grade 10 MCHS students taking up Science were examined to compare student outcomes based on lesson delivery modes. Three sections served as the traditional F2F classes, while the remaining three sections as the BL classes. The BL classes were instructed to access self-paced online modules prior to the actual discussion of the topics. At the end, every student accomplished three metacognitive questions. Mann-Whitney U-Test was performed on the scores earned by each student in the two groups (quick checks, quizzes and forms). Results showed statistically significant differences in the performance of the two classes in their total quick check scores, which implies that the online modules were able to aid student retention of Science content knowledge for immediate assessments. However, the test statistics revealed insufficient evidence to provide a statistically reliable difference on total quiz and form scores.

Keywords: Face-to-Face (F2F), Blended Learning (BL), Student Outcomes, Self-paced Online Modules

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## **Introduction**

Student engagement has long been pointed out as the main culprit for the trend of decreasing student satisfaction of those in the secondary and higher education context. Having academically purposeful activities that entice student learning and personal development is one important factor that leads to an increased level of engagement with whatever it is that they are studying (Kuh, 2001). According to Gunuc (2014), student engagement and academic performance have a significant relationship, such that the higher the degree of student engagement leads to an increase in academic performance. Thus, interventions and innovations aimed at improving the level of student engagement are prolific topics for research, which leads to creating engaging learning environments for students.

Designing learning environments aimed at increasing student engagement entails the use of instructional design principles. Combining classroom face-to-face interaction and online learning environments creates a new terrain called a Blended learning environment. The findings of Boyle, et. al. (2003) suggest that by incorporating novel and meaningful elements in both classroom instruction and the online environment show marked improvements in students' passing rates. However, the team emphasized that in order for this method to work, factors like proper module organization, ample tutorial support and availability of adequate online resources should be in place. Dowling, et. al. (2003) investigated on the association of learning outcomes of students given different teaching modules: traditional face-to-face and blended delivery. The results indicated that the blended delivery method is more positively linked to students' final marks and improved learning outcomes.

With recent advancements in the use of technology in education, schools all around the world are transitioning from the fully traditional face-to-face classroom instruction to a blended, or some even fully online, learning approach. In the Philippines, Miriam College High School (MCHS) is one of the secondary schools which has adopted a blended learning approach with the use of mobile devices such as tablet-PC's and iPads, both in the classroom and when the students are outside school. Learning opportunities for synchronous and asynchronous collaboration, as well as self-paced learning, are provided in both classroom and online environments.

## **Statement of the Problem and Objectives of the Study**

The study seeks to determine if there is a relationship between the lesson delivery modes and student outcomes of Grade 10 MCHS students in their Science classes. Specifically, it aims to answer the question:

- Is there is a significant difference in the student outcomes (Total Quiz, Total Quick Check and Total Form scores) of MCHS Grade 10 Students who were exposed to face-to-face learning approach and those who were exposed to blended learning approach (face-to-face classroom instruction with online teaching modules) in their Science classes?

## Significance of the Study

Every generation of learners has different learning behaviors. Their learning is deeply affected with the context of education that they are immersed in. Today, one of the major advancements in technology is the internet. This paved way to the online-based techniques in education which, at a certain degree, have replaced traditional teaching and learning (Yiğit & Özden, 1999). Convenience in learning is a major factor among this generation of learners. Because of the development of the internet, students can easily access information whenever and wherever they want to, without being dependent on time and place. This has made the internet an indispensable part of the education in this era.

Moreover, this new education model can enrich the students' learning habits and experiences because many education techniques like presenting, brainstorming, collaborating, and the like, can be conducted online (Sahan, 2016). In this way, it becomes possible for the learners to gain essential learning experiences such as reading, writing, observing, listening, and performing tasks according to Şimşek (2002) as stated by (Kazu and Demikrol, 2014). Yet, online learning can pose a big disadvantage for it limits the students with social and face-to-face interaction opportunities with other learners and with their teacher. This might be one of the disadvantages of online-based learning. However, Laurillard (2002) stated that technological tools should be used to a certain extent in order for learning and teaching to be more effective. Thus, blended learning has emerged. This type of teaching and learning approach is a combination of the strongest aspects of both traditional or face-to-face classroom instruction and online-based instruction (Morgan, 2002).

Many researches had been in support of the blended instruction method because of the following advantages: improvement in pedagogy, increased access to knowledge with increased teacher presence during teaching, improved cost effectiveness and enhanced ease of revision, among others (Osguthorpe & Graham, 2003). Consequently, learners are given more control over their learning pace, selection of resources and time management, thus, improving student's self-regulation (Chung & Davis, 1995). The researches done in the past are more focused on the undergraduate and graduate levels and little had been done to examine the effects of blended learning to students in the basic education level, particularly in the high school level.

Miriam College High School is one of the pioneers of e-learning in the Philippines because of its "E-Learning Tool Project" which was launched in 2012. The project is made to make learning more relevant to the 21<sup>st</sup> century learners; with increased mobility through the use of tablet-PC and iPad and increased access because of the blended learning method in teaching and learning. According to Chambers (2014), these devices were initially used by some schools as a textbook replacement, only to find out later that these can create a major impact which supplements face-to-face on the students' performance. Hence, the study wants to determine if blended learning with the use of self-paced online modules as supplementary materials for instruction

will have a significant effect on the students' performance in various types of assessment method such as quick check/seatwork, quiz and form/long test.

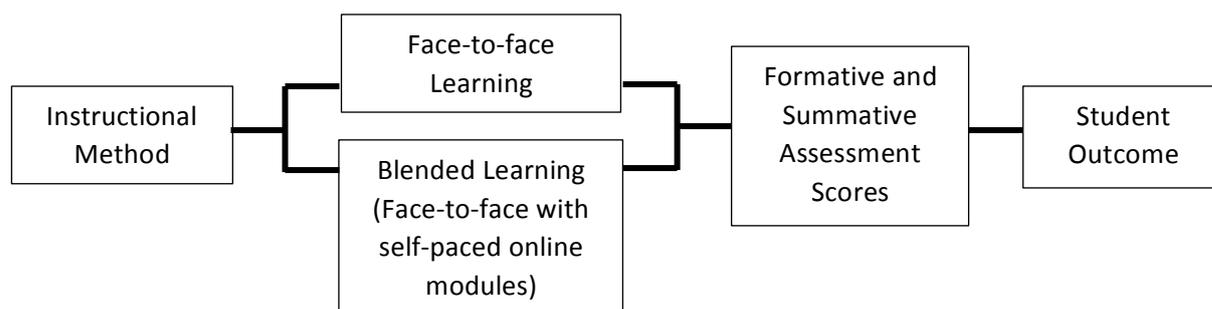
### Scope and Limitations

The study only covered students from selected sections of Grade 10 MCHS population. The students' outcomes will be based on formative and summative types of assessment such as quick check, quiz, and form/long test based from a series of lessons specified in the course outline of Science 10 for the school year 2016-2017.

The researchers implemented the study to their own classes. Thus, teaching style is varied although similar resources such as PowerPoint presentation copies, etc. were available to the students during the face-to-face instruction. It was also accessible to the internet after the instruction.

The same formative and summative assessment materials were given to the students even when the students vary in terms of their learning styles. The study was only be limited to selected topics in Biology to be discussed during the second term.

### Conceptual Framework



*Figure 1. Conceptual Framework of the study*

This study wants to determine whether supplementing face-to-face classroom instruction with self-paced online modules will have a significant effect on students' outcomes. To achieve this, the study will use two delivery methods for science lessons: traditional face-to-face classroom instruction (F2F) and blended learning (BL) which is a combination of face-to-face classroom instruction with online teaching modules. After the lesson delivery modes have been rolled out, formative and summative assessments will be in place and students' outcomes from the two groups will be compared to determine if the disparity of scores are statistically significant.

## Hypotheses and Definition of Terms

The following are the hypotheses of the study:

H<sub>0</sub>: There is no significant difference in the student outcomes (Total Quiz, Total Quick Check and Total Form scores) of MCHS Grade 10 Students who were exposed to face-to-face learning approach and those who were exposed to blended learning approach (face-to-face classroom instruction with online teaching modules) in their Science classes.

H<sub>A</sub>: There is a significant difference in the Total Quiz, Quick Check and Form scores of MCHS Grade 10 Students who were exposed to face-to-face learning approach and those who were exposed to blended learning approach (face-to-face classroom instruction with online teaching modules) in their Science classes.

## Definition of Terms

- Face-to-face Learning (F2F) – also known as the traditional classroom where “the instructor and the learners are in the same geographical location at the same time” (Redmond, 2011)
- Blended Learning (BL) – these are structured opportunities to learn, which use more than one learning or training method, inside or outside the classroom (Pankin, Roberts, & Savio, 2012)
- Online Module – also known as e-learning module which is “made up of chunks of information used to educate or inform; it may include texts, images, videos, quiz’s, questionnaires, PDFs, and any other resources that can be delivered from a wide variety of platforms and learning and content management systems” (Learning pool, n.d.)
- Students’ Outcomes – formative and summative assessment scores from quick checks/seatwork, quizzes, forms/long tests
- Quick check – a type of formative assessment consists of 5 to 10 items administered immediately after a lesson to check for immediate recall of concepts discussed.
- Quiz – a type of formative assessment consists of 25 to 30 items involving few topics which aims “to monitor student learning to provide ongoing feedback that can be used by instructors to improve their teaching and by students to improve their learning” (Carnegie Mellon University, 2015).
- Form - a type of summative assessment consists of 45 to 50 items involving several lessons which aims “to evaluate student learning at the end of an instructional unit by comparing it against some standard or benchmark” (Carnegie Mellon University, 2015)

## Research Design

The Posttest-Only Design with Nonequivalent Groups was used in the study. The researchers administered several formative assessments, of varied weights, and two summative assessments to determine student outcomes by the end of the unit covered in Grade 10 mainstream Science class.

Six out of 13 sections from Grade 10 were selected to participate in the study. The sections were divided into two groups: three sections served as the control group, otherwise known as the group exposed to face-to-face learning approach only and the other three sections were assigned to be the experimental group which was exposed to blended learning approach (face-to-face classroom instruction with self-paced online modules).

This design is appropriate since students were already blocked into sections for the school year. One teacher handled the F2F classes while another one for the BL classes. Although different in terms of the teacher involved in the two set-ups, teaching materials are products of collaborative work between the teachers involved and thus, the learning experience of the students are essentially the same. Moreover, the students were not notified ahead that they underwent an experiment to avoid distractions in the academic setting.

Since the study seeks to find if the two groups created have significantly different outputs/scores, it made use of an analysis of differences. Shapiro-Wilk Test was performed to determine if the scores of the two groups have normal distribution. This will then decide whether the researchers will use a parametric (t-Test for Independent Samples) or a non-parametric (Mann-Whitney U-Test) test on the data obtained from the two groups.

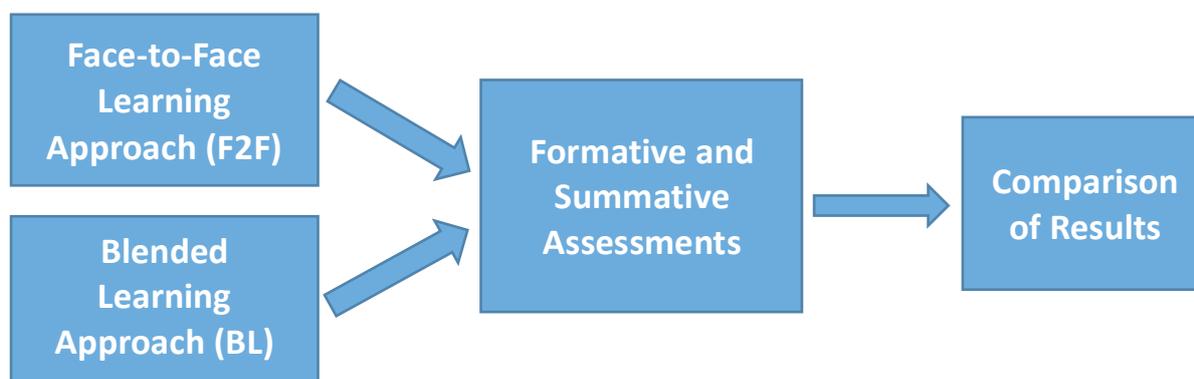


Figure 2. Diagram of the research design

## Participants

The primary participants are six Grade 10 Science classes ranging from 32-39 students per class. These 6 sections summing up to 217 students came from a batch of 13 sections with 465 students who are taking up mainstream Science classes. The

school follows a heterogeneous sectioning scheme with efficient profiling from the school's Guidance Counseling and Research Team, assuring that the composition of each class are of similar aptitudes.

The sample size is statistically viable as it agrees with computations using Slovin's equation. The sample population was selected via convenience sampling as these are the very sections under the supervision of the proponents of the study. Participants are all females studying at Miriam College High School with ages ranging from 14 to 17 years old and are all taking up Grade 10 Science.

### **Instrument**

To obtain rich and comprehensive data, the following instrument was used in the study:

#### *Self-paced Online Modules*

The researchers designed a website for the self-paced online modules covering selected topics in Science under the Second Term of school year 2016-2017. Module 1 covered Topics 1 and 2 which includes the lesson on Biomolecules (Carbohydrates, Fats/Lipids, Proteins, Nucleic acids) while Module 2 covered Topics 3 and 4 which includes the lesson on Heredity: Inheritance and Variation (DNA Replication, Transcription, Translation and Mutation).

#### *Different Forms of Assessment*

The researchers administered different forms of assessment in the form of formative – quick checks/seatwork and quizzes – and summative assessment. This ran for six weeks during the duration of the lesson content covered in the first and second summative assessments for the term.

### **Procedure and Treatment of Data**

#### **Experimentation**

All six sections took the same lessons in Science under their assigned teachers, the only difference lies on the lesson delivery modes; three of the six sections had face-to-face classroom instruction as the sole lesson delivery mode, while the other three had a mixed delivery mode, combining face-to-face classroom instruction and the utilization of online lesson modules.

Students were required to access the self-paced online modules as part of a reading assignment prior to actual classroom discussion. After reading the assigned lesson, students are expected to answer metacognitive questions and turn in an output.

All groups took the same formative and summative assessments as topics covered in the entire unit of lessons were taught. The experiment was expected to create two

groups: the face-to-face (F2F) learning group (control group) and the blended learning (BL) group (experimental group).

### Post Experiment

Data were placed in SPSS and MS Excel for statistical analyses. Data was subjected to Test for Normality to determine if there is a normal distribution of scores; this will determine whether to use a parametric or a nonparametric statistical test.

To test the null hypotheses, the mean scores of each student per type of assessment used in both the control and experimental groups were tested for significant difference with the lesson delivery mode using t-Test or U-Test for independent samples. At the end of the research, the students are to be notified that they had been subjected to a lesson delivery mode experiment and that the results would be presented to them.

### Conclusions

### Results and Discussion

Table 1 shows the distribution of students per lesson delivery mode. Out of the total population of 217 participants in the study, 108 of them (49.77%) were subjected to a blended learning (BL) approach in lesson delivery mode while the remaining 109 students (50.23%) were given the face-to-face lesson delivery mode (F2F).

*Table 1. Distribution of Students per Lesson Delivery Mode*

Groups	Number of Participants
Face-to-face (F2F)	109
Blended learning (BL)	108

To determine whether to use a parametric or a non-parametric test, a test for normality was ran on the test scores obtained from the study.

*Table 2. Shapiro-Wilk Test for Normality*

Groups	Statistic	df	Sig.
Total Quiz	.947	217	.000
Total Quick Check	.958	217	.000
Total Form	.953	217	.000

Table 2 shows the scores obtained per assessment type were not normally distributed since all the p-values are less than .05. Hence, a non-parametric statistical test, particularly Mann-Whitney U-Test was used to further analyze the data.

*Table 3. Descriptive Statistics of the students' total quiz scores for all topics covered*

<b>Groups</b>	<b>F2F</b>	<b>BL</b>
Mean	103.57	102.84
Standard Error	1.68	1.38
Median	108	105.75
Mode	121	106
Standard Deviation	17.52	14.33
Sample Variance	306.78	205.39
Range	88	61
Minimum	40	68
Maximum	128	129

F2F group's Total Quiz Scores shown in Table 3 ranged from 40 to 128 ( $M = 103.57$ ,  $SD = 17.52$ ), skewness of -0.94 and kurtosis of 0.54 ( $SE = 1.68$ ) while the BL group scores ranged from 68 to 129 ( $M = 102.84$ ,  $SD = 14.33$ ), where  $W(217) = .947$  which indicated a distribution that is not normal.

*Table 4. Descriptive Statistics of the students' total quick check/seatwork scores for all topics covered*

<b>Groups</b>	<b>F2F</b>	<b>BL</b>
Mean	39.48	42.19
Standard Error	0.87	0.71
Median	40.40	44
Mode	48	44
Standard Deviation	9.01	7.42
Sample Variance	81.12	54.94
Range	38	31
Minimum	16	23
Maximum	54	54

F2F group's Total Quick Check Scores shown in Table 4 ranged from 16 to 54 ( $M = 39.48$ ,  $SD = 9.01$ ), skewness of -0.59 and kurtosis of -0.14 ( $SE = 0.87$ ) while the BL group scores ranged from 23 to 54 ( $M = 42.19$ ,  $SD = 7.42$ ), where  $W(217) = .958$  which indicated a distribution that is not normal.

*Table 5. Descriptive Statistics of the students' total form scores for all topics covered*

<b>Groups</b>	<b>F2F</b>	<b>BL</b>
Mean	74.28	74.01
Standard Error	0.99	0.91
Median	77	75
Mode	82	81
Standard Deviation	10.37	9.45
Sample Variance	107.59	89.28
Range	43	41
Minimum	47	48
Maximum	90	89

Lastly, Total form scores, as shown in Table 5 for the F2F group ranged from 47 to 90 ( $M = 74.28$ ,  $SD = 10.37$ ), skewness of  $-0.73$  and kurtosis of  $-0.13$  ( $SE = 0.99$ ), while the BL group scores ranged from 48 to 89 ( $M = 74.01$ ,  $SD = 9.45$ ), where  $W(217) = .953$ , which indicated a distribution that is also not normal.

All the scores indicated above for each assessment type, were not normally-distributed. As such, a nonparametric Mann-Whitney U-Test was used to further analyze the data.

*Table 6. Mann-Whitney U-Test for Independent Samples Results for total scores in assessments under Modules 1 and 2*

	<b>Group</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>U</b>	<b>p</b>
Total Quiz	F2F	109	103.58	17.52	5428.00	0.322
	BL	108	102.84	14.33		
Total Quick Check	F2F	109	39.34	9.08	4873.00	0.028
	BL	108	42.19	7.41		
Total Form	F2F	109	74.28	10.37	5663.00	0.629
	BL	108	74.01	9.45		

Table 6 shows computed p-values of total scores in quizzes and forms are greater than the alpha level (.05). This revealed an insufficient evidence to show a statistically significant difference in the scores of students subjected to face-to-face learning and blended learning approach.

Meanwhile, total scores of quick check/seatwork had a computed p-value less than the alpha level ( $p = .028 < .05$ ), showing a sufficient evidence that there is a statistically significant difference in the scores of students who were subjected to face-to-face learning and those who were given a blended learning approach.

The total quick check scores, with  $p = .028$ , is indicative that the self-paced online modules were helpful to the students who were exposed to it, since students under this group had higher mean scores ( $M = 42.19$ ) than that of the face-to-face group ( $M = 39.34$ ) as shown in Table 6. Since the BL group was able to access the self-paced online modules prior to the actual classroom discussion, students were more familiar with the terms and concepts thus helping them perform better in quick checks/seatwork.

All other forms of assessment used in the study, aside from the one aforementioned, had p-values greater than the alpha (.05), and thus suggest no significant difference in the scores obtained by the two groups (see Appendix L).

The findings agree with a similar study done by McLaughlin, et. al. (2015) entitled “*The Impact of Blended Learning on Student Performance in a Cardiovascular Pharmacotherapy Course*” which made use of two groups – face-to-face and blended learning group – and testing for difference in student performance. They found out that students who accessed all online modules performed better in the examinations provided than those who did not. It was also noted that the students who accessed the modules had strongly agreed that foundational content learned prior to class greatly enhanced their learning.

It also coincides with the study of Kazu and Demirkol (2014), where they observed that there was no significant difference in the individual pre-test and final test scores of two groups of high school students (blended learning group and traditional learning group). However, the average of the final test scores were significantly different between the two groups, where the blended learning group outperforming the traditional learning group. The same trend is seen in the study where individual quick check scores showed no significant difference between the two groups but average of the total quick check scores had significant difference, with the blended learning group outscoring the face-to-face group.

These suggest that the self-paced online modules had positive effects on the quick check/seatwork scores of those exposed to it (blended learning group), since the Mann-Whitney U-Test revealed a statistically reliable difference on the total quick check scores of the blended learning group ( $M = 42.21$ ) and the face-to-face group ( $M = 39.34$ ). This can lead us into stating that the students in the blended learning group were more familiar with the terms and concepts, since they were able to access the self-paced online modules prior to the actual classroom discussion, which then helped them perform better in their quick checks/seatwork.

### **Implication And Recommendations**

In summary, based on the data gathered and the results of the statistical tests, there is a significant difference in the Total Quick Check scores of students who were exposed to face-to-face learning and blended learning approach. This agrees with analogous studies that had already been conducted by Kazu and Demirkol (2014) and McLaughlin, et. al., (2015). Thus, the following null hypotheses ( $H_0$ ) was rejected.

However, there was insufficient statistical evidence to reject the other null hypotheses ( $H_{01}$  and  $H_{03}$ ) which suggest that there was no significant difference in the scores obtained by the two groups.

Because of the variability of the results, it can be suggested that blended learning approach greatly affects total quick check performance of the students. This explains that students in a blended learning environment would achieve a higher accumulated quick check scores than those who only received the face-to-face classroom instruction, since it aids in immediate recall of concepts. This can further imply that blended learning can be an effective approach in the long run, especially when students would diligently read and understand the self-paced online modules before the face-to-face classroom session with their teacher.

On the other hand, there is insufficient evidence to prove that there is a significant difference in the Total Quiz and Form scores of the students. This might be accounted to the breadth of the scope of topics covered in these forms of assessment. Even if the online module provided the students with information and practice through online simulations, diligence on the part of the students to study several topics for a quiz or a form greatly affects their performance.

For similar studies in the future, the researchers would recommend conducting a Focus Group Discussion (FGD) to consult the students, and the faculty alike, of their perceptions regarding the use of blended learning approach in the classroom vis-à-vis their performance on different assessments given to them.

Moreover, further similar studies can also include a survey on the evaluation of the blended learning approach at the end of the study. This would aid in identifying the strengths and weaknesses of the approach to the students' performance. They can also look into possible correlations between student engagement and student outcomes in classes where a blended learning approach is employed.

Another recommendation for future studies would be a longer period of observation time and more modules and topic coverage, since the students in blended learning group only accessed two modules considering a handful of topics. One factor that might have affected the similarity of scores is the preference and intrinsic motivation of the students to use the online module. The proponents prevented this by making sure that the students in the blended learning group accessed the self-paced online modules by asking them to create outputs than involved metacognitive questions.

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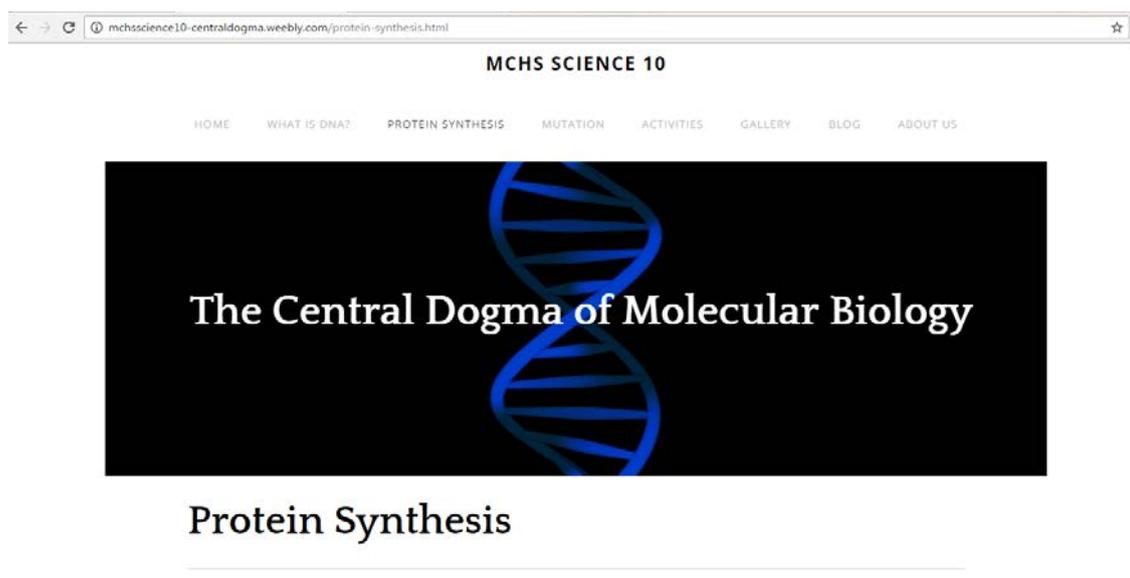
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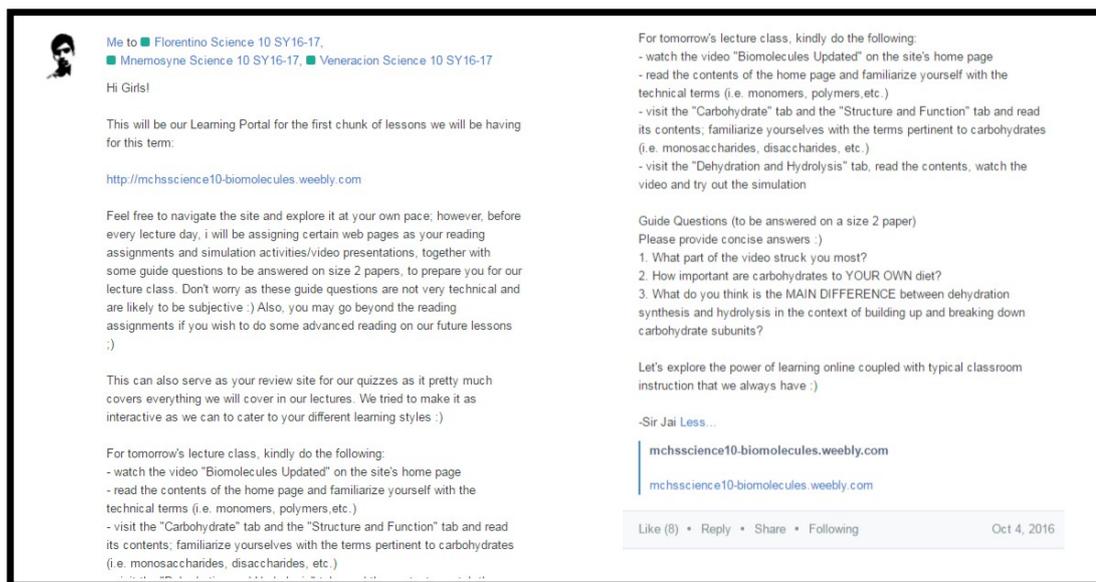
## Appendices



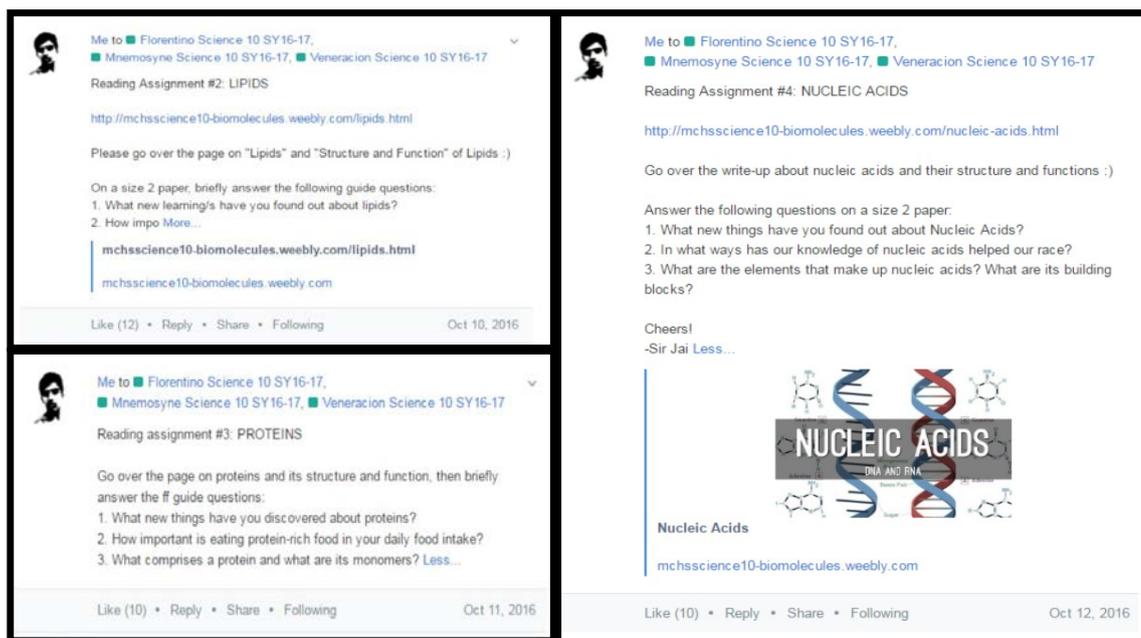
Appendix A. Screen shot of Module 1 on Biomolecules found in the link <http://mchsscience10-biomolecules.weebly.com/>



Appendix B. Screen shot of Module 2 on Biomolecules found in the link <http://mchsscience10-centraldogma.weebly.com/>



Appendix C. Screen shot of the instructions sent to the Edmodo page of classes under the BL group.



Appendix D. Screen shot of the instructions for the Reading Assignment with metacognitive questions posted to the Edmodo page of classes under the BL group.

The screenshot shows a post on Edmodo. At the top left is a profile picture of a man with glasses. The post is addressed to three groups: 'Florentino Science 10 SY16-17', 'Mnemosyne Science 10 SY16-17', and 'Veneracion Science 10 SY16-17'. The text of the post reads: 'Hi Girls! please take time to read the contents of this webpage: <http://mchsscience10-centraldogma.weebly.com/mutation.html> and go over the entire module on gene mutation. In line with this reading assignment, I'd like you to create your "padlet" entries in response to this guide question: 1. What new information did you discover about gene mutation? 2. PAP of an image that best describes/represents what gene mutation is for you. Here is the link/code to your PADLET BOARDS: Mnemosyne: [padlet.com/kenanquitc/ud8jqu8h2y3l](http://padlet.com/kenanquitc/ud8jqu8h2y3l) Florentino: [padlet.com/kenanquitc/swm6p8rtdf3f](http://padlet.com/kenanquitc/swm6p8rtdf3f) Veneracion: [padlet.com/kenanquitc/bxngpiwinq1s](http://padlet.com/kenanquitc/bxngpiwinq1s) NOTE: Please make sure that you write your names at the end of your entries. Cheers! -Sir Jai Less...

On the right side of the post, there is a smaller version of the same text, a 'NOTE' about writing names, a 'Cheers!' message, and a small image of a desk with a laptop and papers. Below this is a 'padlet.com' link and a social interaction bar showing 'Like (6) • Reply • Share • Follow' and the date 'Nov 12, 2016'. At the bottom right is a reply box with a profile picture and the text 'Type a reply...'.

Appendix E. Screen shot of the instructions for the Padlet online activity posted to the Edmodo page of classes under the BL group.

<p>Unlike genetic mutation, chromosomal mutation is the abnormality in a chromosome's structure. In addition to this, it occur during cell division wherein linked genes either get lost, joins another chromosome, or even break apart.</p> <p>The picture below shows a child born with Jacobsen syndrome. It was caused by the genetic material from chromosome 11 is missing. People who are affected by this have difficulties in the development of motor skills, speech, and learning, and have very distinct facial features.</p> <p>10 MARA DIANZON</p>	<p>Gene mutation and chromosomal mutation are both classified as types of genetic mutation. However, in order to differentiate these two, gene mutation basically happens when there comes a permanent change in the DNA sequence, while chromosomal mutation occurs when there is a change affecting the structure of the chromosome, may it be part or whole.</p> <p>A widely known human disorder brought about by chromosomal mutation is down syndrome, wherein it affects the person physically and mentally. Down syndrome is the outcome when one has a problem involving their chromosome 21, in terms that one may have an additional copy of genetic material in it. People with down syndrome may show a small mouth giving the appearance of a large tongue, upward slanting eyes, as well as a single deep crease across the center of their palm.</p> <p>22 ALLYSON MEILY</p>	<p>The difference between a gene mutation and a chromosomal mutation is a gene mutation changes a small scale alteration in a gene and a chromosomal mutation changes a large scale alteration in a gene.</p> <p>An example of a human disorder is Wolf-Hirschhorn syndrome. It is a syndrome caused by the deletion of the distal short arm of chromosome 4. The disorder's major features include a characteristic facial appearance, delayed growth and development, intellectual disability, and seizures.</p> <p>25 PERALTA, LEXINNE</p>
		

Appendix F. Screen shot of output in the Padlet online activity submitted by the some students from the classes under the BL group.

### Quick Check:

1. This is known to be the building blocks of carbohydrates.
2. This type (group) of sugar is composed of 6 carbon atoms.
3. This is a monomer of carbohydrate which is found in milk.
4. What is the other name for glucose which is also known as the blood sugar?
5. This disaccharide is formed in a combination of glucose and fructose molecules.

Appendix G. Screen shot of Quick check questions for Topic 1 Biomolecules.

### QUICK CHECK 4 (SIZE 4)

1. The scientist who took an x-ray photo of a DNA.
2. This group of nitrogenous bases have double rings.
3. DNA is coiled tightly to form chromosomes and are wrapped around \_\_\_\_\_.
4. Watson and Crick described the DNA as \_\_\_\_\_.
5. It is a characteristic of DNA in which one strand runs from 5' end to 3' end and the other strand runs from 3' end to 5' end. 

Appendix H. Screen shot of Quick check questions for Topic 2 DNA Structure and Replication.

	1- without; 2-with	T1_Q UIZ	T1_Q QC	T2_Q UIZ	T2_Q QC	Form 1	T3_Q UIZ	T3_Q QC	T4_Q UIZ	T4_Q C	Form 2	TOTAL QUIZ	TOTAL QC	TOTAL FORM
NAMES		30	30	35	10	50	35	10	30	5	45	130	55	95
	1	23.0	21	25.0	8	38.0	31.0	7	27.0	3.0	36.0	106	39	74
	1	24.0	18	26.0	10	42.0	32.0	7	19.0	5.0	40.0	101	40	82
	1	24.5	26	30.0	10	42.0	34.0	10	30.0	4.0	43.0	118.5	50	85
	1	29.0	23	32.0	10	45.0	35.0	10	29.0	5.0	41.0	125	48	86
	1	16.0	10	21.0	3	35.0	24.0	2	20.0	2.2	26.0	81	17.5	61
	1	30.0	11	35.0	6	28.0	31.0	7	27.0	5.0	39.0	124	29.4	67
	1	22.0	21	31.0	9	40.0	34.0	8	29.0	5.0	38.0	116	43	78
	1	25.0	21	29.0	10	39.0	35.0	10	28.0	5.0	35.0	117	46.9	74
	1	13.0	8	23.0	6	20.0	17.0	3	21.0	4.0	31.0	74	21.3	51
	1	20.0	12	21.0	9	35.0	29.0	8	28.0	5.0	39.0	98	33.7	74
	1	15.0	15	28.0	9	40.0	27.0	7	25.0	4.0	37.0	95	34.5	77
	1	26.0	20	29.0	10	41.0	25.0	6	28.0	3.0	38.0	108	39	79
	1	25.0	25	32.0	10	38.0	32.0	10	17.5	5.0	39.0	106.5	50	77
	1	21.0	19	27.0	8	43.0	32.0	8	28.0	5.0	35.0	108	40	78
	1	27.0	23	33.0	10	45.0	32.0	10	30.0	5.0	42.0	122	48	87
	1	13.0	18	29.0	6	43.0	25.0	6	27.0	3.0	37.0	94	33	80
	1	15.0	15	25.0	7	36.0	29.0	4	20.0	1.0	32.0	89	26.7	68
	1	15.0	12	15.0	3	28.0	20.5	1	18.0	3.0	33.0	68.5	19	61
	1	27.0	22	33.0	10	43.0	31.0	8	30.0	5.0	40.0	121	45	83
	1	27.0	18	31.0	9	40.0	33.0	9	30.0	5.0	42.0	121	41	82
	1	29.0	18	28.0	7	43.0	31.0	6	30.0	5.0	40.0	118	36.33	83
	1	14.0	14	29.0	8	30.0	31.5	8	29.0	4.0	41.0	103.5	34	71
	1	28.0	18	29.0	10	44.0	31.0	9	30.0	4.0	39.0	118	41	83
	1	24.5	24	31.0	9	46.0	29.0	8	30.0	4.0	39.0	114.5	45	85
	1	14.0	14	25.0	10	38.0	27.5	7	27.0	5.0	39.0	93.5	36	77
	1	25.0	20	30.0	10	42.0	32.0	8	28.0	5.0	41.0	115	43	83
	1	14.0	25	27.0	8	36.0	25.0	9	18.0	5.3	34.0	84	47.6	70
	1	12.0	11	30.0	9	39.0	24.0	10	25.0	5.0	34.0	91	33.5	73
	1	24.0	23	33.0	9	46.0	34.0	8	30.0	5.0	41.0	121	45	87
	1	22.0	21	31.5	10	40.0	32.0	9	29.0	5.0	42.0	114.5	45	82
	1	28.0	19	30.0	9	40.0	32.0	10	27.0	5.0	40.0	117	43	80
	1	18.0	18	23.0	10	31.0	32.0	10	23.0	4.0	33.0	96	42	64
	1	27.0	27	32.0	10	44.0	33.0	10	30.0	4.0	43.0	122	51	87
	1	14.0	10	18.0	5	33.0	16.0	3	23.0	1.0	30.0	71	19	63
	1	25.0	28	31.0	9	43.0	29.0	8	29.0	4.0	41.0	114	49	84
	1	20.0	20	29.0	4	35.0	27.5	8	26.0	4.0	35.0	102.5	36.5	70
	1	22.0	20	30.0	9	39.0	32.0	7	29.0	4.0	27.0	113	40	66
	1	25.0	28	32.0	8	40.0	34.0	10	30.0	5.0	42.0	121	51	82
	1	24.0	26	31.0	7	44.0	30.0	8	28.0	3.0	39.0	113	43.7	83
	1	11.0	18	25.5	5	29.0	26.0	7	28.0	4.0	36.0	90.5	33.5	65
	1	19.0	15	27.0	7	33.0	25.0	6	17.0	4.0	29.0	88	32.3	62
	1	22.0	21	29.5	7	36.0	28.0	4	28.0	5.0	32.0	107.5	37	68
	1	23.0	22	31.0	9	45.0	29.0	6	30.0	5.0	35.0	113	42	80
	1	27.0	27	31.0	10	46.0	34.0	10	30.0	5.0	42.0	122	52	88
	1	22.0	26	25.0	8	39.0	31.5	9	20.0	4.0	34.0	98.5	47	73
	1	20.0	18	27.0	4	35.0	31.0	8	23.0	3.0	32.0	101	32.5	67
	1	25.0	28	29.0	7	41.0	34.0	9	28.0	4.0	37.0	116	48	78
	1	28.0	28	27.5	8	43.0	27.0	8	29.0	5.0	36.0	111.5	49	79
	1	25.0	26	33.0	10	48.0	34.0	10	24.0	5.0	40.0	116	51	88
	1	28.0	18	28.0	9	38.0	27.0	8	28.0	3.0	36.0	111	38	74
	1	18.0	21	19.0	7	31.0	14.0	8	17.0	4.0	29.0	68	40	60
	1	23.0	25	28.0	10	43.0	27.0	8	30.0	5.0	37.0	108	47.5	80
	1	19.0	21	19.0	9	38.0	31.5	5	28.0	4.0	36.0	97.5	38.5	74
	1	11.0	22	25.0	9	22.0	29.0	7	11.0	3.0	31.0	76	40.5	53
	1	25.0	20	22.0	8	39.0	31.0	8	22.0	3.0	39.0	100	39	78
	1	24.0	14	34.0	9	42.0	28.0	10	28.0	5.0	45.0	114	38	87
	1	16.0	15	19.0	2	22.0	18.0	5	10.0	5.0	31.0	63	27	53
	1	28.0	24	31.0	8	44.0	34.0	9	23.5	5.0	39.0	116.5	46	83
	1	29.0	30	32.0	10	47.0	34.0	9	30.0	5.0	43.0	125	54	90
	1	16.0	13	13.5	3	38.0	30.0	4	16.0	5.0	32.0	75.5	24.5	70
	1	25.0	20	31.5	9	38.0	32.0	9	29.0	3.0	35.0	117.5	40.5	73
	1	17.0	13	21.0	1	31.0	22.0	3	28.0	3.0	28.0	88	20	59
	1	19.0	12	20.0	2	30.0	14.5	2	21.0	0.0	34.0	74.5	16	64

Appendix II. Individual and total assessment scores of students subjected to face-to-face learning approach.

1	25.0	21	27.0	8	42.0	26.0	8	24.0	1.0	33.0	102	38	75
1	27.0	27	33.0	10	37.0	34.5	8	30.0	5.0	40.0	124.5	50	77
1	24.0	23	27.0	8	41.0	31.0	5	30.0	5.0	41.0	112	41	82
1	12.0	21	18.0	4	28.0	27.5	6	12.0	5.0	26.0	69.5	36.3	54
1	26.0	30	33.0	10	46.0	35.0	9	30.0	5.0	41.0	124	54	87
1	25.0	21	29.5	9	40.0	31.0	7	24.0	4.0	28.0	109.5	41	68
1	26.0	26	31.5	9	41.0	32.0	10	26.0	4.0	39.0	115.5	48.7	80
1	28.0	23	27.0	8	38.0	26.0	4	23.0	5.0	32.0	104	40.3	70
1	26.0	28	31.0	10	43.0	29.0	10	29.0	5.0	43.0	115	52.8	86
1	30.0	28	33.0	10	42.0	35.0	9	30.0	5.0	43.0	128	52	85
1	28.0	22	32.0	8	43.0	32.0	8	26.0	5.0	39.0	118	42.5	82
1	14.0	18	18.0	9	30.0	26.5	5	18.0	4.0	37.0	76.5	36	67
1	11.0	20	29.0	5	27.0	26.0	4	22.0	3.0	33.0	88	32.3	60
1	25.0	28	33.0	10	46.0	32.0	9	28.0	5.0	39.0	118	51.5	85
1	12.0	15	10.0	2	25.0	11.0	2	7.0	3.0	22.0	40	22	47
1	25.0	21	34.0	8	37.0	30.0	8	29.0	4.0	37.0	118	41	74
1	30.0	16	27.0	8	40.0	31.0	7	28.0	5.0	37.0	116	35.7	77
1	24.0	24	24.0	10	43.0	31.0	9	30.0	5.0	40.0	109	48	83
1	30.0	30	30.0	10	45.0	29.0	9	30.0	5.0	44.0	119	54	89
1	24.0	25	28.0	7	42.0	29.0	3	29.0	5.0	36.0	110	39.5	78
1	25.0	26	26.0	9	44.0	26.0	8	23.0	5.0	34.0	100	48	78
1	21.0	16	35.0	7	35.0	33.0	8	28.0	4.0	39.0	117	35	74
1	19.0	22	27.0	3	32.0	21.0	2	22.0	3.0	33.0	89	30.3	65
1	20.0	20	32.0	8	37.0	31.5	9	25.0	4.0	39.0	108.5	41	76
1	17.0	16	20.0	6	26.0	25.0	5	13.0	2.0	32.0	75	29	58
1	26.0	26	35.0	10	36.0	32.0	9	30.0	5.0	41.0	123	50	77
1	28.0	20	34.0	10	45.0	35.0	10	30.0	5.0	44.0	127	45	89
1	12.0	13	26.0	7	35.0	17.0	5	28.0	5.0	32.0	83	30	67
1	16.0	20	34.0	9	39.0	21.0	8	16.0	4.0	37.0	87	41	76
1	22.0	26	33.0	10	40.0	28.0	7	22.0	5.0	36.0	105	48	76
1	15.0	11	29.0	6	27.0	17.0	3	9.0	4.0	21.0	70	24	48
1	30.0	26	31.0	9	46.0	34.0	9	30.0	4.0	43.0	125	48	89
1	23.0	14	25.0	8	24.0	17.0	7	20.0	5.0	24.0	85	34	48
1	25.0	20	29.0	10	46.0	32.5	9	29.0	5.0	36.0	115.5	43	82
1	22.5	17	29.0	6	34.0	24.0	3	20.0	4.0	35.0	95.5	30.3	69
1	18.0	16	25.0	5	35.0	29.0	2	27.0	4.0	38.0	99	26	73
1	16.0	19	25.0	7	31.0	30.0	7	29.0	5.0	36.0	100	38	67
1	27.0	26	29.0	9	41.0	31.0	8	30.0	5.0	38.0	117	48	79
1	13.0	14	23.0	7	29.0	26.5	4	26.0	2.0	29.0	88.5	27	58
1	27.0	26	31.0	8	43.0	34.0	9	29.0	5.0	39.0	121	48	82
1	24.0	19	35.0	10	43.0	34.0	8	30.0	5.0	41.0	123	42	84
1	22.0	21	24.0	6	36.0	30.5	6	19.0	5.0	34.0	95.5	38	70
1	28.0	18	26.0	9	43.0	26.5	5	28.0	3.0	40.0	108.5	35	83
1	18.0	16	23.0	5	28.0	25.0	5	23.0	3.0	32.0	89	29	60
1	24.0	22	34.0	8	43.0	29.0	5	18.0	4.0	36.0	105	39	79
1	17.0	14	28.0	4	27.0	17.0	2	24.0	5.0	34.0	86	24.5	61

Appendix I2. Individual and total assessment scores of students subjected to face-to-face learning approach.

	1- without; 2-with	T1_Q UIZ	T1_QC QC	T2_Q UIZ	T2_QC QC	Form 1	T3_Q UIZ	T3_QC QC	T4_Q UIZ	T4_QC C	Form 2	TOTAL QUIZ	TOTAL QC	TOTAL FORM
NAMES		30	30	35	10	50	35	10	30	5	45	130	55	95
	2	25.0	21	28.0	8	40.0	29.0	6	24.0	5	38.0	106	40	78
	2	19.0	24	19.5	10	30.0	19.5	5	20.0	5	34.0	78	45	64
	2	27.0	24	24.0	10	35.0	28.0	8	30.0	5	33.0	109	47	68
	2	13.0	25	27.0	10	36.0	22.0	7	28.0	4	31.0	90	46	67
	2	29.0	24	31.0	8	44.0	33.0	10	30.0	5	43.0	123	47	87
	2	24.5	20	30.0	8	39.0	26.0	7	25.0	5	34.0	105.5	40	73
	2	24.0	26	29.0	8	42.0	33.0	8	27.0	5	38.0	113	47	80
	2	27.5	23	33.0	10	37.0	22.0	8	26.0	3	34.0	108.5	44	71
	2	24.0	28	29.0	9	42.0	32.0	5	28.0	3	35.0	113	45	77
	2	27.0	28	32.0	10	43.0	32.0	9	29.0	5	42.0	120	52	85
	2	26.0	25	29.0	7	37.0	35.0	9	30.0	5	39.0	120	46	76
	2	26.0	25	28.0	8	42.0	27.0	8	27.0	5	40.0	108	49	82
	2	27.0	26	32.0	10	47.0	29.0	8	30.0	5	41.0	118	49	88
	2	28.5	28	31.0	9	43.0	27.0	8	28.0	5	41.0	114.5	50	84
	2	23.5	22	26.0	8	43.0	26.0	7	24.0	5	39.0	99.5	42	82
	2	24.0	22	27.0	9	40.0	30.0	9	29.0	3	35.0	110	43	75
	2	23.0	25	32.0	8	41.0	22.0	7	28.0	5	31.0	105	45	72
	2	28.0	29	27.0	9	44.0	27.0	9	30.0	5	37.0	112	52	81
	2	23.5	27	28.0	8	38.0	23.0	5	28.0	5	36.0	102.5	45	74
	2	24.5	22	31.0	10	42.0	27.0	7	26.0	5	35.0	108.5	44	77
	2	23.0	18	28.0	8	39.0	26.0	6	25.0	5	34.0	102	37	73
	2	22.0	22	27.0	6	44.0	27.0	5	30.0	5	39.0	106	38	83
	2	19.0	18	24.0	7	43.0	29.0	6	28.0	5	27.0	100	36	70
	2	14.0	20	27.0	7	34.0	23.0	9	29.0	4	35.0	93	40	69
	2	18.5	19	29.0	6	39.0	25.0	7	29.0	5	33.0	101.5	37	72
	2	15.5	22	27.0	8	44.0	32.0	8	30.0	4	39.0	104.5	42	83
	2	17.5	18	31.0	7	33.0	22.0	6	23.0	5	37.0	93.5	36	70
	2	27.0	26	31.0	9	38.0	31.0	7	28.0	5	41.0	117	47	79
	2	18.0	23	32.0	9	42.0	33.0	3	27.0	5	41.0	110	40	83
	2	20.5	14	25.0	8	40.0	30.0	4	27.0	5	35.0	102.5	32	75
	2	26.5	28	33.0	10	43.0	34.0	8	30.0	5	43.0	123.5	51	86
	2	24.0	22	32.0	10	41.0	33.0	10	26.0	5	42.0	115	47	83
	2	16.0	22	26.0	6	35.0	22.0	4	25.0	1	34.0	89	33	69
	2	24.0	24	30.0	8	40.0	25.0	8	30.0	4	31.0	109	44	71
	2	27.5	27	29.0	8	40.0	31.0	9	30.0	5	40.0	117.5	49	80
	2	22.0	20	22.0	6	34.0	24.0	4	20.0	5	35.0	88	37	69
	2	21.0	20	22.0	4	27.0	22.0	3	29.0	3	30.0	94	30	57
	2	22.5	26	31.0	9	40.0	30.0	4	29.0	5	33.0	112.5	44	73
	2	19.0	18	22.0	5	28.0	21.0	4	23.0	4	23.0	85	31	51
	2	13.0	23	23.0	9	33.0	26.0	4	21.0	0	26.0	83	36	59
	2	30.0	29	32.0	8	44.0	30.0	5	28.0	5	44.0	120	47	88
	2	25.0	26	30.0	9	41.0	30.0	10	25.0	5	38.0	110	50	79
	2	20.5	25	30.0	9	39.0	34.0	4	28.0	5	30.0	112.5	46	69
	2	27.0	27	22.0	8	44.0	29.0	10	27.0	5	37.0	105	50	81
	2	24.0	15	17.0	9	28.0	18.0	6	19.0	4	32.0	78	34	60
	2	21.0	21	26.0	9	44.0	27.0	9	24.0	5	30.0	98	44	74
	2	15.0	17	25.0	8	26.0	23.0	7	21.0	2	32.0	84	34	58
	2	30.0	29	35.0	10	47.0	35.0	10	29.0	5	42.0	129	54	89
	2	25.5	21	32.0	10	42.0	31.0	9	30.0	5	43.0	118.5	45	85
	2	27.0	29	26.0	9	45.0	33.0	9	27.0	5	40.0	113	52	85
	2	25.0	24	25.0	9	43.0	34.0	8	23.0	3	29.0	107	44	72
	2	25.0	17	22.0	10	44.0	27.0	7	26.0	5	40.0	100	39	84
	2	25.0	26	31.0	10	44.0	31.0	7	28.0	5	41.0	115	48	85
	2	27.5	25	32.0	10	46.0	31.0	10	30.0	5	41.0	120.5	50	87
	2	16.0	20	32.0	6	37.0	22.0	5	25.0	3	36.0	95	34	73
	2	20.0	19	29.0	9	40.0	21.0	5	22.0	0	33.0	92	33	73
	2	17.0	17	23.0	5	30.0	26.0	5	24.0	2	34.0	90	29	64
	2	26.0	27	28.0	10	47.0	32.0	10	30.0	5	39.0	116	52	86
	2	25.0	24	29.0	10	43.0	30.0	9	25.0	5	38.0	109	48	81
	2	17.0	24	27.0	7	34.0	23.0	2	20.0	5	32.0	87	38	66

Appendix J1. Individual and total assessment scores of students subjected to blended learning approach.

2	25.0	21	24.0	8	36.0	20.0	6	21.0	4	33.0	90	39	69
2	19.0	22	28.0	8	38.0	29.0	5	30.0	3	37.0	106	38	75
2	22.5	15	28.0	6	37.0	23.0	4	28.0	5	35.0	101.5	30	72
2	15.0	18	23.0	6	39.0	23.0	4	22.0	5	28.0	83	33	67
2	15.0	13	20.0	7	36.0	22.0	3	22.0	3	34.0	79	26	70
2	26.5	22	32.0	9	39.0	29.0	8	27.0	4	40.0	114.5	43	79
2	18.0	14	25.0	2	38.0	20.0	6	23.0	1	36.0	86	23	74
2	29.0	27	30.0	10	43.0	31.0	9	26.0	4	38.0	116	50	81
2	30.0	27	34.0	7	43.0	34.0	9	29.0	3	39.0	127	46	82
2	28.0	27	23.0	9	44.0	27.0	9	26.0	4	34.0	104	49	78
2	26.0	18	8.0	7	26.0	26.0	6	22.0	1	35.0	82	32	61
2	16.0	18	31.0	4	31.0	17.0	2	17.0	4	22.0	81	28	53
2	26.0	28	31.0	8	44.0	33.0	10	30.0	5	42.0	120	51	86
2	28.0	26	25.0	9	41.0	31.0	7	30.0	5	35.0	114	47	76
2	16.0	20	20.0	10	32.0	20.0	6	21.0	4	35.0	77	41	67
2	13.0	20	19.0	2	31.0	23.0	2	17.0	0	27.0	72	24	58
2	29.0	24	31.0	9	32.0	27.0	8	24.0	5	39.0	111	46	71
2	29.0	25	33.0	4	35.0	23.0	7	28.0	5	23.0	113	44	58
2	16.0	18	26.0	5	26.0	20.0	1	24.0	1	33.0	86	25	59
2	25.0	28	26.0	8	41.0	33.0	5	30.0	5	41.0	114	46	82
2	24.0	27	26.0	9	39.0	23.0	9	30.0	5	40.0	103	50	79
2	21.0	24	33.0	8	43.0	24.0	5	30.0	4	40.0	108	41	83
2	20.0	25	31.0	9	45.0	25.0	8	26.0	4	41.0	102	46	86
2	27.0	27	31.0	10	44.0	32.0	8	29.0	5	40.0	119	54	84
2	15.0	17	21.0	5	35.0	19.0	5	24.0	4	28.0	79	31	63
2	27.0	27	35.0	8	44.0	30.0	8	30.0	5	37.0	122	48	81
2	19.0	24	16.0	9	33.0	20.0	1	25.0	5	34.0	80	39	67
2	25.0	28	26.0	9	40.0	26.0	9	29.0	5	43.0	106	51	83
2	17.0	21	17.0	7	31.0	11.0	7	23.0	5	27.0	68	40	58
2	15.0	26	31.0	8	35.0	23.0	5	25.0	4	28.0	94	43	63
2	28.5	25	31.0	9	41.0	33.0	10	29.0	5	40.0	121.5	49	81
2	20.0	19	26.0	8	45.0	23.0	4	24.0	4	38.0	93	35	83
2	17.5	20	21.0	7	38.0	23.0	5	24.0	5	36.0	85.5	37	74
2	25.0	26	21.0	10	36.0	24.0	9	24.0	5	29.0	94	52	65
2	14.0	19	22.0	7	23.0	22.0	7	19.0	3	25.0	77	36	48
2	17.0	20	17.0	7	31.0	19.0	9	30.0	5	32.0	83	41	63
2	23.0	29	33.0	9	39.0	33.0	9	30.0	5	38.0	119	52	77
2	27.5	27	32.0	8	43.0	32.0	8	30.0	5	38.0	122	48	81
2	30.0	29	33.0	9	47.0	31.0	8	30.0	5	41.0	125	51	88
2	24.0	29	31.0	10	37.0	32.0	7	30.0	5	41.0	117	51	78
2	25.0	26	27.0	9	39.0	33.0	9	26.0	5	41.0	111	49	80
2	25.0	25	26.0	8	42.0	26.0	6.5	29.0	3	35.0	106	42	77
2	15.0	19	18.0	6	27.0	28.0	6	27.0	2	30.0	88	33	57
2	17.0	17	27.0	6	27.0	27.0	8	24.0	3	33.0	95	34	60
2	28.0	22	29.0	8	34.0	30.0	9	30.0	5	37.0	117	44	71
2	24.0	20	25.0	7	31.0	15.0	2	22.0	5	35.0	86	34	66
2	20.0	22	29.0	8	41.0	29.0	3	25.0	5	37.0	103	40	78
2	22.0	25	25.0	8	35.0	24.0	10	25.0	5	31.0	96	48	66

Appendix J2. Individual and total assessment scores of students subjected to blended learning approach.

### Mann-Whitney Test Ranks

	Group	N	Mean Rank	Sum of Ranks
T1_QUIZ	Without Module	109	106.10	11565.00
	With Module	108	111.93	12088.00
	Total	217		
T1_QC	Without Module	109	92.82	10117.50
	With Module	108	125.33	13535.50
	Total	217		
T2_QUIZ	Without Module	109	114.38	12467.50
	With Module	108	103.57	11185.50
	Total	217		
T2_QC	Without Module	109	110.06	11997.00
	With Module	108	107.93	11656.00
	Total	217		
FORM1	Without Module	109	107.81	11751.00
	With Module	108	110.20	11902.00
	Total	217		
T3_QUIZ	Without Module	109	122.03	13301.50
	With Module	108	95.85	10351.50
	Total	217		
T3_QC	Without Module	109	114.41	12470.50
	With Module	108	103.54	11182.50
	Total	217		
T4_QUIZ	Without Module	109	106.06	11560.50
	With Module	108	111.97	12092.50
	Total	217		
T4_QC	Without Module	109	104.61	11403.00
	With Module	108	113.43	12250.00
	Total	217		
FORM2	Without Module	109	113.86	12411.00
	With Module	108	104.09	11242.00
	Total	217		
TOTAL_QUIZ	Without Module	109	113.20	12339.00
	With Module	108	104.76	11314.00
	Total	217		
TOTAL_QC	Without Module	109	99.71	10868.00
	With Module	108	118.38	12785.00
	Total	217		
TOTAL_FORM	Without Module	109	111.05	12104.00
	With Module	108	106.94	11549.00
	Total	217		

Appendix K. Mann-Whitney U-Test Mean Rank and Sum of Ranks of the two groups

**Test Statistics<sup>a</sup>**

	T1_QUI Z	T1_QC	T2_QUI Z	T2_QC	FOR M1	T3_QUI Z	T3_QC	T4_QUI Z	T4_QC	FOR M2	TOT AL_QUIZ	TOT AL_QC	TOT AL_FOR M
Mann-Whitney U	557 0.00 0	412 2.50 0	529 9.50 0	577 0.00 0	575 6.00 0	446 5.50 0	529 6.50 0	556 5.50 0	540 8.00 0	535 6.00 0	5428. 000	4873. 000	5663. 000
Wilcoxon W	115 65.0 00	101 17.5 00	111 85.5 00	116 56.0 00	117 51.0 00	103 51.5 00	111 82.5 00	115 60.5 00	114 03.0 00	112 42.0 00	1131 4.000	1086 8.00 0	11549 .000
Z	- .685	- 3.82 2	- 1.27 2	- .256	- .282	- 3.07 8	- 1.28 8	- .700	- 1.15 8	- 1.14 9	- -.991	- 2.19 2	- -.483
Asymp. Sig. (2-tailed)	.494	.000	.204	.798	.778	.002	.198	.484	.247	.251	.322	.028	.629

Appendix L. Results of Mann-Whitney U-Test comparing the mean scores of individual and total assessments per group.



***Relationship of Learning Environments to Students' Interactive Behaviors in  
a Project-based English Course***

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The Asian Conference on Education 2017  
Official Conference Proceedings

**Abstract**

A number of studies of Active Learning (AL) explained that AL provided collaborative learning for students. The authors of this study believe providing good learning environments for students is important in order to improve AL course. The aim of this study is to identify a way to utilize AL classrooms for English language teaching in higher education. To this end, we conducted a questionnaire survey for students in project-based English classes both in a regular classroom and in an AL classroom. A total of 81 students participated in the survey. The results indicated no systematic difference between the normal classroom and the AL classroom in terms of students' perceived in-class behavior such as student-student interaction (normal classrooms, 2.92; AL classrooms, 3.06), student-teacher formal interaction (normal classrooms, 2.74; AL classrooms, 2.81), and student as teachers (normal classrooms, 2.70; AL classrooms, 2.67) on a four-point scale. This result may be due to the equivalence in basic classroom conditions other than AL elements, such as the number of students, the size of the classroom, and classroom capacity. We therefore argue that classroom characteristics other than AL elements should also be described in future AL classroom research.

Keywords: active learning classroom, project-based learning, English language teaching, students' behavior

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## Introduction

This paper explores our second study in a series of continual efforts to utilize active learning classrooms for English language teaching in higher education. Higher education institutes in Japan have been urged to shift to active learning, as stated in a policy report published in 2012 by the Ministry of Education, Science, Culture, and Sports of Japan (MEXT). In response, Shizuoka University, where the authors of this study currently work, established AL classrooms on two campuses. These classrooms have been available since April 2015. Since then, we started to research how we can maximize the effectiveness of using AL classrooms for teaching English for university students.

AL is a comprehensive term that refers to various learning activities. It facilitates AL by avoiding the kind of passive learning that happens when knowledge is transferred from teachers to students in one-sided lectures (MEXT, 2012). In Japan, collaborative learning and project-based learning (PBL) are often cited as one of AL methods (e.g., Chubu Chiiki Daigaku Group Tokai A Team, 2014). As a number of studies have already showed examples of teaching procedures for cooperative or project-based English learning (e.g., Yamamoto & Kimura, 2013; Yoshimura, Hiromori, Kirimura, & Nishina, 2017), it is now necessary to develop guidelines for the effective use of the facilities at our university, which has recently established AL classrooms. Therefore, this study taught project-based English language courses in both normal and AL classrooms to compare the issues found in each case.

## Effect of Learning Environments

Of the previous studies of the effect of learning environments on teachers and students, few focused on English language teaching (e.g., Brooks, 2012; Park & Choi, 2014). Brooks (2012) examined the actual in-class behaviors of teachers and students in normal and AL classrooms. Experiment lessons in both normal and AL classrooms were conducted during introductory biology courses that share the same course title, learning content, and level of experience of the instructor. Both were planned to reduce one-sided lectures as much as possible. For investigation, multiple trained observers monitored and recorded the lessons using prescribed observation forms more than ten times per classroom. The results showed that, in the normal classroom, the instructor spent a longer amount of time lecturing from the podium in front of the class, whereas discussions between students were limited. On the other hand, in the AL classroom, the instructor left his podium and spent more time providing advice and consulting with student groups.

According to Park and Choi (2014), both “golden” and “shadow” zones exist in normal classrooms when it comes to seating arrangements. Golden zones are preferred: seats in these offer optimum learning conditions, whereas seats in shadow zones are believed to prevent students’ vision, understanding, and concentration. In other words, seat position in normal classrooms makes a difference in learning conditions. On the other hand, Park and Choi suggest that there is no such difference caused by seat position in AL classrooms. Moreover, their questionnaire survey reveals that students evaluated AL classrooms as preferable to normal classrooms because they felt that AL classrooms facilitated their active participation.

However, to the best of our knowledge, the effect of learning settings on students and instructors is still unclear in the field of English language teaching. Thus, we practiced project-based English lessons in both regular normal and newly introduced AL classrooms, and compared student’s perceived behaviors in the classrooms by conducting a questionnaire

survey (Amano, Yamamoto, Fujimori, & Matsuno, 2016). The results indicated that the AL classroom was evaluated more highly for individual activities, but, contrary to the above-mentioned studies, students did not perceive any difference during peer- or group activities. One of the causes of this unexpected result might be the desk arrangement of the AL classroom used for the study. The desks in the AL classroom were in essence fixed because of laptop wiring and power supply poles. This might have prevented students from contacting each other in the classroom. Thus, we conducted a modified replication in an AL classroom on the other campus at Shizuoka University. We present the results and interpretation, as well as discuss further issues found in the analysis.

## **Methodology**

### **Participants of this study**

Participants of this study were first-year non-English majors in four different classes at Shizuoka University, a four-year national university in Japan ( $N = 81$ , consisted of male = 41, female = 35, no answer = 5). All participants were native speakers of Japanese who had previously been exposed to formal instruction in English as a foreign language (EFL) at Japanese schools. Fortuitously, there were no international students in any of the four classes. A supplemental survey revealed that only one student had previously studied in an English-speaking country. This student had studied in the United States for a month as an exchange student during junior high school. None of the remaining participants had resided in an English-speaking country for more than a month. Two classes were conducted in an AL classroom ( $N = 41$ ) and the other two were in a normal classroom ( $N = 40$ ). The second author was the instructor for every class.

### **Classroom Conditions**

Since this study focuses on learning environments, it is necessary to describe classroom conditions in detail. Table 1 summarizes the features of normal and AL classrooms used in this study. Comparing the size of the classrooms, although there was a small difference in the depth of the room (normal classroom 10.80m, AL classroom 14.40m), the width hardly varied (normal classroom 7.13m, AL classroom 7.80m). There were 23 long desks that were almost fixed in the normal classroom (See Figure 1), while there were 40 easily-movable small desks in the AL classrooms (See Figure 2). There were two blackboards in the front and rear of the normal classroom, compared to three whiteboards in the front, rear, and left sides of the AL classroom. While students could use 41 laptop computers and 6 slide projectors for group discussion in the AL classroom (though unfortunately the computers are not visible in Figure 2), they had no choice but to bring their own computers in the normal classroom.

Table 1

*Features of Each Type of Classroom (When the Podium is at the Front of the Room)*

Classroom type	Normal	AL
Depth	10.80m	14.40m
Width	7.13m	7.80m
Desk/Table	23	40
Blackboard, etc.	Two blackboards in total, front and back of the room	Three whiteboards in total, front, back and left side of the room
Projector and screen	One, in front of the room	Six in total, front, back and left side of the room
Computer	None	42 in total, one for instructors and 41 for students
Tablet	None	Seven for students



Figure 1. Arrangement of classroom equipment in the normal classroom

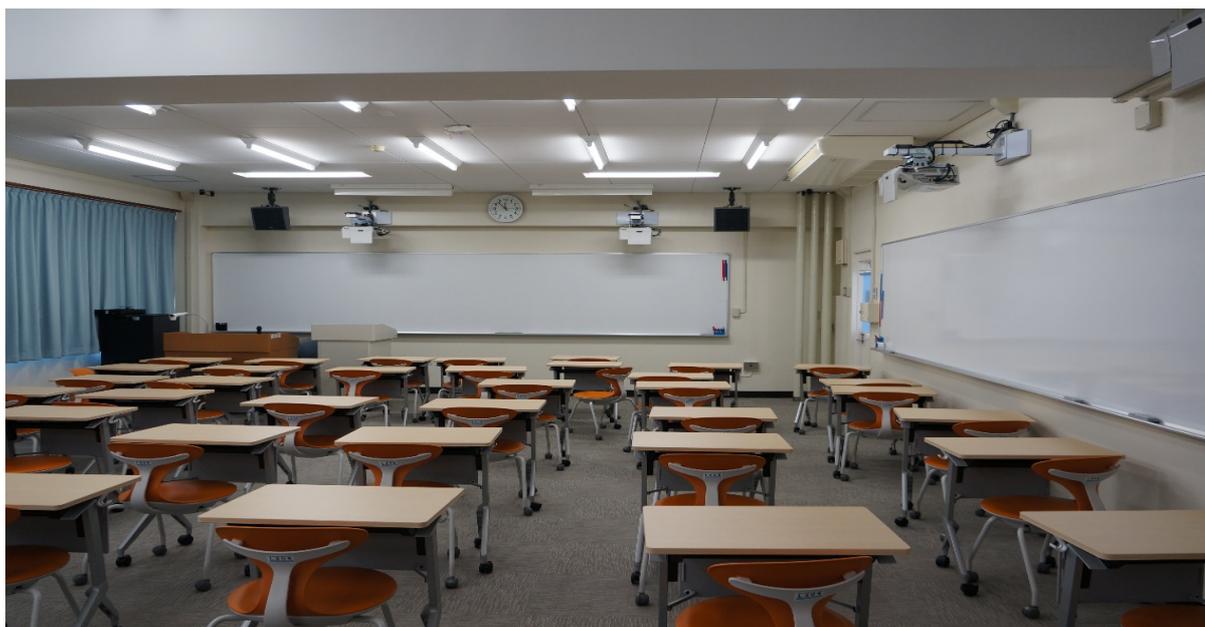


Figure 2. Arrangement of classroom equipment in the AL classroom

### Lesson Procedures

This section explains the details of lesson procedures. The project-based English lesson in this study was implemented in a semester-long compulsory course for first-year students titled "English Communication I," which focuses on the development of EFL communication skills. The essentials are the following:

- 1) Students on their own select and research a topic of interest throughout the semester. Conducting research in English is recommended.
- 2) Students learn basic academic writing and presentation, with a view to the necessity of writing a bachelor's thesis in English or making an English presentation when they get a job in the future.
- 3) Students deepen the research content through presentations and discussions, and submit a report written in English at the end of the semester.

The instructor supported students' progress while considering the effective use of the facilities in each classroom. The medium of instruction was entirely English.

Next, the entire lesson plan for each class time and throughout the semester will be explained. The right-side columns of Table 2 show the lesson plans during the semester. Topics were established for each lesson from the first week to the ninth week, and corresponding 20-minute lectures were delivered. Moreover, as the left-side columns of Table 2 show, teacher-designated out-of-class assignments were required in the classes from the first week to the ninth week. At the beginning of the next lesson, students presented their achievements within a group and evaluated each other's work. These assignments helped the progress of students' project as well. They were designed to complete the first draft of the final report when all homework tasks were completed. Starting from the 11th week, end-of-semester presentation sessions prepared throughout the semester were conducted. The student audience provided peer feedback for the presentations using feedback sheets prepared by the instructor.

Table 2

*Lesson Plans in the Semester*

Week	Lecture contents	Out-of-class tasks
1	Introduction	Find topics and summarize related articles
2	Research methods	Find topics and summarize related articles
3	How to find research topics	Find subtopics and summarize related articles
4	How to narrow down the topics	Find subtopics and summarize related articles
5	How to make a presentation	Find subtopics and summarize related articles
6	How to make slides	Write part of a report based on the above
7	Basics of academic writing 1	Write an introduction
8	Basics of academic writing 2	Write a conclusion
9	How to write a presentation script	Prepare for an end-of-semester presentation
10	Presentation practice	Prepare for an end-of-semester presentation
11	End-of-semester presentation 1	Provide peer feedback for other student speakers
12	End-of-semester presentation 2	Provide peer feedback for other student speakers
13	End-of-semester presentation 3	Provide peer feedback for other student speakers
14	End-of-semester presentation 4	Provide peer feedback for other student speakers
15	Comprehensive review of the course	Submit an end-of-semester report

Next, the contents of each of the 90-minute sessions will be described. Figure 3 shows a typical example of lessons from the second to ninth weeks. Group discussions based on out-of-class tasks were the first activity in each lesson. Students were encouraged to use English for the discussion. Opportunities to practice their presentations were provided in the classes from the second to tenth lessons. Each group selected a presenter and a facilitator for the week, and the group representatives gave the entire class a practice presentation, based on the outcome of the homework assignment and using a project and a screen in the classroom. Instructor feedback was offered to the whole class after the practice. Then, the instructor provided pre-planned lectures. On average, thirty minutes per lesson were dedicated to allowing students to work on their projects by themselves.

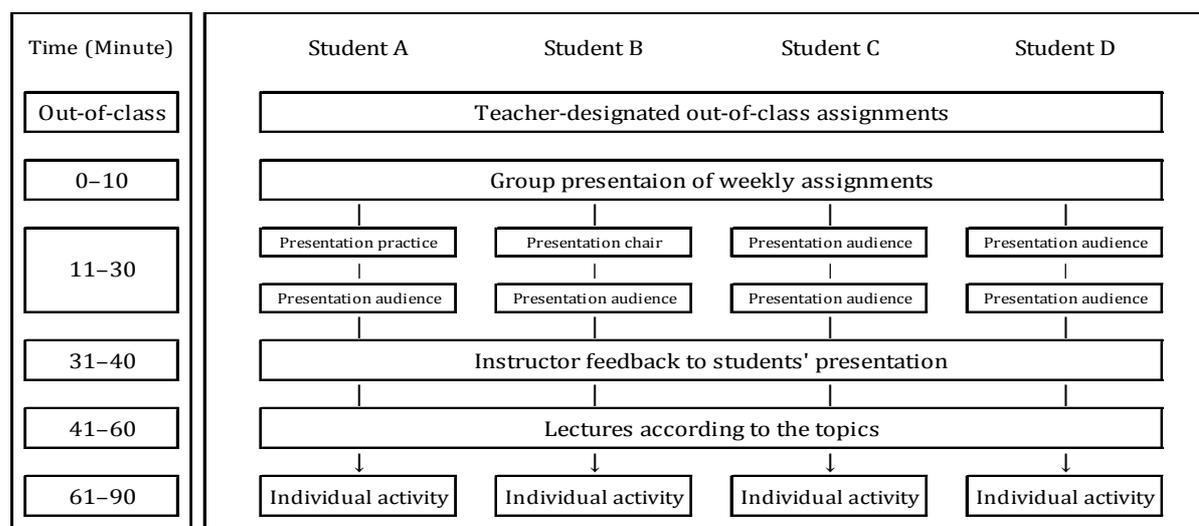


Figure 3. Typical example of presentation lessons

## Questionnaire Survey

The University of Minnesota Learning Spaces Research Survey was adopted as the questionnaire for this survey. This 32-item questionnaire consists of four components, Student-Student Relations (ten items), Student-Instructor Formal Relations (five items), Student-Instructor Informal Relations (three items), and Student as Instructor (seven items). The survey includes seven dummy items as well (seven items). The questions which were used in this study are put in the Appendix.

## Results

The table in the Appendix presents the means and standard deviations (SDs) for each four-point scale item from the questionnaires completed in the final week. The data indicates that there were little differences in students' responses between the AL and normal classrooms. The internal consistency reliability of each of the four components was determined by Cronbach's coefficient alpha.

Table 3 shows that the internal consistency of three of the components of "student-student relations ( $\alpha = .89$ )," "student-instructor formal relation ( $\alpha = .78$ )," and "student as instructor ( $\alpha = .82$ )" was sufficiently high, but "student-instructor informal relations" were not confirmed in this survey ( $\alpha = .60$ ). Therefore, the means of the items for only the three reliable components were computed and utilized as scaled scores.

Table 3

### *Internal Consistency of the Components*

Components	student-student relations	student-instructor formal relations	student-instructor informal relations	student as instructor
Cronbach's coefficient alpha	.89	.78	.60	.82

Table 4

### *Results of Non-Parametric Tests*

Components		<i>M</i>	<i>SD</i>	<i>z</i>	<i>p</i>	<i>r</i>
Student-student relations	AL classrooms	2.92	0.61	-0.98	.33	.11
	Normal classrooms	3.06	0.50			
Student-instructor formal relations	AL classrooms	2.74	0.61	-0.30	.77	.03
	Normal classrooms	2.81	0.46			
Student as instructor	AL classrooms	2.70	0.52	-0.83	.41	.09
	Normal classrooms	2.67	0.46			

The means and SDs of each scaled score and the results of tests of mean differences are given in Table 4. As the data did not follow a normal distribution, Mann-Whitney U tests were conducted for each scaled score to evaluate the difference between the two classroom types. All three scaled scores did not show significant differences, and the effect sizes were fairly low. This confirms that classroom type had no impact on the perceived behaviors of students who enrolled in project-based English courses. This is consistent with our previous study

(Amano et al., 2016), but not with the other previous studies (Brooks, 2012; Park & Choi, 2014).

Our previous research (Amano et al., 2016) indicated that differences in classroom environment affect learning progress in individuals but do not alter interactions between students. The present study further revealed that the environment did not have any impact on formal interactions between students and instructor. In addition, it did not facilitate students' behaviors to support each other. Quite interestingly, this appears to be inconsistent with previous studies conducted in other contexts. The question is, why do our studies show any effects of the learning environment on students' behaviors?

## **Discussion**

There appear to be two explanations. One pertains to the instructor's behaviors, which we have not yet examined. Brooks (2012) showed changes in both students' and instructor's behaviors in the classroom due to differences in classroom conditions. If there were no changes in the classroom behavior of the instructor in this paper, it may be a reason students' behavior in our study was not affected by the classroom conditions. A second explanation is the possibility that basic classroom settings, such as the number of students, the size of the classroom, and classroom capacity, affected the result. All classes in this research were small classes of about 20 students. Therefore, the students and instructor may have been in an environment where they could communicate easily, irrespective of the classroom type. Furthermore, the fact that there was no big difference in the size of normal and AL classrooms may also explain the result.

Based on the results of this study, language teachers could offer AL style classes in a traditional classroom. It is for sure better to have the AL classroom where it is specially designed for AL. Within the AL classroom, the authors of this study believe that both teachers and students can easily learn their target language. However, as this study showed that teachers could offer quality AL classes in a normal classroom as well, as long as they are well prepared and organized.

## **Conclusion**

This study explored a way to efficiently leverage an AL classroom for project-based English language courses. More specifically, we examined the impact of classroom type (i.e., normal classroom versus AL classroom) on the perceived differences in students' in-class behaviors. The result showed no significant difference between the normal and AL classrooms in terms of scale components such as student-student interaction, student-teacher formal interaction, and student as teachers. The finding on student-student interaction is consistent with that of our previous study (Amano et al., 2016). However, contrary to the assumption in the study, the mobility of desks and chairs does not appear to be a factor. In addition, the survey revealed that classroom type did not make any impact on student-teacher formal interaction. We assume that there may be two possible reasons: instructor's behaviors and basic classroom conditions. These factors seem to at least partly affect the results. However, this study used a small scale data and therefore, in order to improve the quality of this study, the authors of this study will continue this research.

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## Appendix

### The Questionnaire Items Used in the Study (Adapted from University of Minnesota Learning Spaces Research Survey)

	Items	Components
1	I've learned something from my classmates.	Student-Student Relations
2	The students sitting near me rely on each other for help in learning class material.	Student-Student Relations
3	In general, people sitting near me in class work well together on class assignments, questions, etc.	Student-Student Relations
4	I know something personal about the people sitting near me in class.	Student-Student Relations
5	I feel comfortable asking for help from my classmates.	Student-Student Relations
6	I am acquainted with the students sitting near me in class.	Student-Student Relations
7	During class, I often have a chance to discuss material with some of my classmates.	Student-Student Relations
8	The students sitting near me respect my opinions.	Student-Student Relations
9	In this class, other students pointed out a helpful resource.	Student-Student Relations
10	In this class, other students explained a concept to me.	Student-Student Relations
11	The material covered by the tests and assignments in this class was presented and discussed in class or online.	Student-Instructor Formal Relations
12	My instructor makes class enjoyable.	Student-Instructor Formal Relations
13	My instructor wants me to do well on the tests and assignments in this class.	Student-Instructor Formal Relations
14	Sometimes I feel like my instructor and I are on opposing teams in this class.	Student-Instructor Formal Relations
15	My instructor encourages questions and comments from students.	Student-Instructor Formal Relations
16	The instructor is acquainted with me.	Student-Instructor Informal Relations
17	I am acquainted with the instructor.	Student-Instructor Informal Relations
18	I've spoken informally with the instructor before, during, or after class.	Student-Instructor Informal Relations
19	I can explain my ideas in specific terms.	Student as Instructor
20	The people sitting near me have learned something from me this semester.	Student as Instructor

- |    |  |                       |
|----|--|-----------------------|
| 21 | I can clearly explain new concepts I've learned to others in class.                                | Student as Instructor |
| 22 | I can persuade my classmates why my ideas are relevant to the problems we encounter in this class. | Student as Instructor |
| 23 | I can use the terminology in this class correctly.   | Student as Instructor |
| 24 | I can explain my thought process from start to finish to others in class.                          | Student as Instructor |
| 25 | I can help others in this class learn.   | Student as Instructor |
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***An Investigation on the Learning Satisfaction of Employing the Flipped Classroom Model in an “Introduction to Computer Science” Course***

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**Abstract**

The employment of the flipped classroom model in instruction has become popular in Taiwan among different levels of education. Reversed from the traditional in-class lectures, students in the flipped classroom model have to preview the learning materials, watch video clips or complete learning sheets provided by the teacher at home before the class. Then, discussion is the main task in class, and the teacher acts as a facilitator to motivate students to work cooperatively in groups to engage in problem solving or hand-on practices. Most studies have revealed the benefits of the flipped classroom models in enhancing students learning achievement and learning motivation. In this model of learning, students are also able to learn at their own pace, utilize the time more effectively, and generate more interaction in class. As a result, this study aimed to investigate the learning satisfaction of using the flipped classroom model in an introductory course of computer science in the university level, including the opinions of benefits and weakness. 50 sophomore students participated in this study. A questionnaire and a semi-structured interview were the two instruments. The findings were as follows,

1. A positive learning satisfaction was found in the use of flipped classroom model, including the online learning materials, pre-classroom activities, and in-class discussion.
2. The amount of time to access to the online videos and the learning preferences were the two major difficulties they have encountered. Some students who were low-achieving in English also felt more frustrated in understanding some of the pre-class video assignments.

Finally, some pedagogical implications were offered.

Key words: flipped classroom model, online learning resources, learning satisfaction

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## Introduction

Based on several researches, flipped classroom model is regarded as an important and popular pedagogy of 21st century education (Educause, 2012; Fulton, 2012; Goodwin & Miller, 2013; Peña & Rosson, 2014; Saxena, 2013). With the development and innovation of technology, teaching has flipped, becoming more and more interactive and student-engaged. It is different from the traditional instructions, mostly teacher-centered or lecture-based approaches. This flipped model has been widely implemented and has grown in popularity in many education fields (Edtech, 2012; Johnson, Adam, Estrada, & Freeman, 2014; Srivastava, 2014). The main idea of the flipped classroom model begins with the use of prerecorded lectures or short video clips that students have to view at home or before the class (Hill, 2012; Saxena, 2013). Students are allowed to access new learning materials outside the classroom initially. When they come back to the classroom, they are engaged in the homework-style activities. They enhance content learning through in-class activities or collaborative work with peers. That is, the traditional classroom is strategically reversed and changed into a student-centered style (Vaughan, 2014; Zhang, Ma, & Liu, 2014). The in-class lecture activities and homework elements are reversed (Srivastava, 2014). In other word, the curriculum is designed in a constructivist learning approach, previewing the instructional videos at home. Learners are responsible for the concept construction by themselves. Then, in class, the teacher serves as a facilitator or knowledge expert, offering hand-on practical activities to apply the concepts or clarify challenging parts that students have encountered in self-learning pace (Bergmann & Sams, 2012).

The idea of the flipped classroom has been in existence since 2000, the time when an experiment of inverting the economics course in the Economics Department at Miami University, allowing students to do homework in the classroom and moved traditional lectures outside of the classroom for multimedia learning (Johnson & Renner, 2012; Salik, 2013). In 2006, Salman Khan established the Khan Academy, providing abundant online educational content for teaching and learning (Hill, 2012). Therefore, the flexible course design was widely adopted and many teachers were encouraged to open access to their online courses. In 2007, the concept of the flipped classroom model was spread quickly when high school chemistry teachers Jonathan Bergmann and Aaron Sams from Woodland Park High School at Colorado began to use recorded lectures (Arnold-Garza, 2014). They had their students access the learning materials with the recorded lectures and assisted them to acquire mastery of the content learning and peer interaction. From the speech that Khan presented in the TED platform in 2011 about the use of his videos to flip the curriculum design, more attention on the flip classroom model was received and teachers were inspired to put it into practice in their own classroom. In 2012, a free website for educators, named Flipped Learning Network and Online Community of Practice was established by Jonathan Bergmann and Aaron Sams (Flipped Learning Network, 2013), motivating more learners to participate in online learning. Following this trend, more and more new technologies are involved in the flipped classroom models, including podcasts, flash animations, recorded videos, YouTube, MOOCs, and TED talks (Arnold-Garza, 2014), utilizing electronic means and offering digital learning content to help learners in the flipped classroom model.

In the flipped classroom model, there are several major benefits. First, learners can learn at their own pace regardless of locations and time (Fulton, 2012; Marlowe, 2012). It is more individualized and flexible that students take greater ownership of learning. Students can decide their learning pace to access the learning resources anytime and anywhere. This is quite important for independent learning and self-autonomy (Liu, 2005; Marlowe, 2012). They can schedule their own learning. In addition, the flipped classroom model enables students and teachers to make the class time effectively (Bergmann, Overmyer, & Willie, 2011). They do not have to spend so much time giving lectures; instead, they are able to offer student-centered or collaborative work for students based on the pre-class learning materials or concepts. Teachers can design and customize the curriculum to meet students' needs, and the class activities become various. Also, students become more actively involved in the student-centered learning process (Horn, 2013; Stone, 2012). They work interactively with their peers to discuss questions, solve problems, implement a group task, and complete hand-on practice. Teachers can facilitate the learning process, offer instant feedback, and assist learners who have difficulties in learning. In this way, students' learning motivation can be enhanced positively (Johnson, 2013; Mok, 2014). They prefer on-line preparation or obtain content knowledge through media before the class. Then, the design of making their engagement in the practical applications or discussion in class make the class more interesting and interactively.

With the positive affirmation of numerous empirical studies around the world, the flipped classroom model has been employed in different levels of education and subjects. In the elementary school level, the findings have displayed positively, including Mathematics (Wang, 2014), and English Reading (Lee, 2015). In the high school level, the use of flipped classroom model also show a significant difference has been found in terms of learning English grammar (Yang, 2015) and Mathematics (Johnson, 2013). As for the college level, some researches also demonstrate the effectiveness, such as the Statistics (Strayer, 2012), Physics (Educause, 2012), and Biology (Stone, 2012). These studies illustrate employing the model of flipped classroom can enhance students' learning achievement, learning motivation, and interaction.

On the other hand, some researches have raised different viewpoints and controversial issues. Some researches indicate that no strong evidence was found to support the claim that the flipped classroom model can enhance students' learning. They found students in the traditional lecture-based class improve as much as the ones in the flipped classroom. There was no significant difference found compared to the traditional instruction. (Chin, 2014; Johnson and Renner, 2012). There were some difficulties that students have encountered. Since it shows the different findings, the use of flipped classroom model needs further investigation. So, the main purpose of this research was to investigate students' feedback of the use of flipped classroom model, including benefits and weakness. Two research questions are followed.

1. How effectively of the learning satisfaction of the employing the flipped classroom model in the course of Introduction to Computer Science?
2. What are the difficulties that students may encounter in the flipped classroom model?

## Method

In this study, fifty sophomore participants taking a 3-credit college-level course “Introduction to Computer Science” were involved in the study. The course was a required course categorized in General Education, and the participants were not relatively information-science majors. They were from the departments belonging to the School of Arts & Humanities. Two instruments were employed in this study, including a questionnaire and a semi-structured interview. All the participants offered responses to the questionnaire regarding the use of flipped classroom model. Ten participants were selected randomly to schedule an interview with five questions to collect further information about difficulties that they may encounter in the implementation of the flipped classroom model.

There are seven units designed in the “Introduction to Computer Science” course. Each unit lasts for two weeks, and the participants are required to watch the video clips before class (See Appendix A). When they come to the class, the teacher will ask if there is any question about the pre-class activities. After that, a learning sheet with related questions to discuss or tasks to complete is given to each one. They can work in groups to discuss and then the teacher will assign each group to provide answers or to present their discussion.

The questionnaire was revised from the researches of Araño-Ocuaman (2010), Lee (2015) and Yang (2015). Also, it was revised based on two experienced teachers to reach a high expert validity. The 15-item questions, shown in Appendix B, were divided into three parts, including the online learning materials, pre-classroom activities, and in-class discussion. The questions used a four-point Likert scale rating from “fully agree = 4,” “strongly agree = 3,” “slightly disagree = 2,” to “completely disagree = 1” to rate participants’ satisfaction of the use of flipped classroom model. In addition, a semi-structured interview was arranged to investigate the opinions of the use of flipped classroom model, especially the difficulties in the learning process. Ten participants were randomly selected and interviewed individually in a cozy rest area at school in the end of the class. They were told that the interview would be recorded to transcribe the scripts, and all of them agreed. There were four five questions (see Appendix C), and each interview conducted by the researcher took around 20 minutes to implement.

The data of the questionnaire for the first research question was collected in the end of the semester and analyzed by descriptive statistics from SPSS. As for the interview data, it was analyzed qualitatively to answer the second research two. The raw data was transcribed, organized, and compared to find out the similarities or differences.

## Results and Discussion

To investigate the participants’ feedback of the flip classroom model, a questionnaire was used. The descriptive statistics of the results was displayed in Table 1. It was found that the participants gave a high positive feedback to the use of the flipped classroom model ( $M=3.33$ ,  $SD=.56$ ), above the midpoint in the scale on all items related to the flipped format. They regarded the employment of flipped classroom model in their “Introduction to Computer Science” course was quite useful for their learning. In terms of each part, the mean is also high, indicating that the participants

are satisfied with the online learning materials, pre-class activities, in-class group discussion and showing students' learning satisfaction was quite positive in the flipped classroom model. One thing that needed to notice was that most of all participants agreed that the pre-class activities took so too much time at time ( $M=3.10$ ,  $SD=.74$ ).

Table 1: Results of Responses to the Use of the Flipped Classroom Model

Question	<i>M</i>	<i>SD</i>
1. Learning from the online learning materials helps me prepare my learning about a new topic well.	3.6	.52
2. Visual images presented online hold my attention and help me understand the concepts of a new topic well.	3.3	.48
3. The online learning materials are clear and easy to understand in explaining the details.	3.5	.53
4. The length of the online is quite acceptable for self-study.	3.0	.67
5. It is easy to access to the online learning materials.	3.2	.42
<i>Subtotal of questions related to online learning materials</i>	3.32	
6. I feel it is much easier to learn a new topic by means of the technology at home.	3.0	.67
7. The pre-class activities takes me too much time at home.	3.1	.74
8. I can learn the new topic at my own pace, rewinding or pausing or moving forward.	3.6	.52
9. I am more responsible for being in control of my own learning in the flipped classroom model.	3.4	.52
10. I prefer using this kind of learning activity to preview.	3.3	.82
<i>Subtotal of questions related to pre-class activities</i>	3.24	
11. The in-class activities help me identify the concepts of the content more deeply.	3.3	.48
12. The discussion within the group in class helps me enhance my learning development.	3.4	.52
13. The in-class activities can help me work out learning problems.	3.5	.53
14. To engage activities with peers in class makes me form good relationship with other group members.	3.4	.52
15. I learn a lot through group collaboration to work on the assignments in class.	3.6	.52
<i>Subtotal of questions related to in-class activities</i>	3.44	
<i>Overall average</i>	3.33	.56

*Note.* N=50. Positive includes fully agree (4 points) and strongly agree (3 points); negative includes slightly disagree (2 points) and completely disagree (1 point).

This findings demonstrated that students' learning satisfaction was positive with the use of flipped classroom model, and there are three possible to explain the results. First, it is likely that the use of online learning materials enables the participants to access to the learning content with higher learning motivation. Taking the advantages of technology may motivate students' learning because the images in the videos may hold students' attention, which are in line with others' findings. (Artino, & Stephens, 2006; Yang, 2005).

Next, the pre-class activities to preview at home enables the participants to learn at their own pace. They have the opportunity to control the pace of the learning, which is similar as some researchers' findings. (Educause, 2012; Marlowe, 2012; Peña & Rosson, 2014). They can repeat to watch the videos when they do not understand the topic and concepts clearly. They are responsible for their own learning and have the ownership of their learning. However, they also reflect that the pre-class activities take so much time at home from the interview data. They have spent so much time in the pre-learning activities, which may occupy some of their leisure time to chat with friends or play games.

Besides that, it is also possible that the in-class group discussion have generated a cooperative learning environment, making the class supportive and interactive. They use communicative skills within groups and complete the group work with the assistance of group members. The group works facilitate their learning since they share, clarify, and discuss their opinions or tasks. Therefore, they think the flipped classroom model is able to help them be involved in the learning process successfully. It is in accordance with other researches that students have positive learning satisfaction in group work in the flipped classroom model (Gannod, 2008; Li, 2014; Sato & Lyster, 2012).

As for the results of the Research Question 2, the data from the interviewed was collected and analyzed. In terms of the pre-class learning, the 10 interviewees all agreed that the flipped classroom model helped them have a better comprehension of the content learning. They could watch the video as many times as they needed, which enabled them become ready for their class discussion. They were able to decide their own learning pace, too. Once they understood the new concept, they could finish the in-class activities easily. However, a few interviewees mentioned that the difficulties they have encountered included the access to the internet, the time spent and the language used in the videos. Otherwise, there were no difficulties in pre-class activities. Two interviewees thought it was hard to understand the videos used in English at the very beginning. However, key words could be picked up after getting used to the explanation, which is also good for learning. On the other hand, time-consuming is another difficulty because they have to spend some time before the class. Compared to the traditional lectures, the flipped classroom model takes the participants more time to be involved.

Interview Q1: How does the flipped classroom model help you have a better comprehension of the content learning?

*"I am a slower learner, so I like this type of learning. I can watch the videos until I understand..." (S1)*

*"I like this part because I won't feel nervous in class. Watching the online videos have me to prepare for the class..." (S3)*

Interview Q2: Are there any difficulties that you may encounter in pre-class learning?  
*“Not really. Only sometimes it is hard for me to understand the English used in the videos....” (S2)*

*“My English is not good enough to catch up with the explanation at first. However, I can catch the key words later...” (S6)*

*“I do not like because I spend so much time watching videos. I spent more time self-study compared to the traditional in-class lectures...” (S4; S5; S9)*

*“I need to find somewhere with WIFI or internet access when I use the online videos. Because my home is not equipped with WIFI, it is harder to watch the videos at home than in the dorm...” (S10)*

As for the in-class learning, all of them showed positive feedback. They became more active in the class to discuss the tasks with their partners. They liked to work with peers in the group, and they could learn from each other. They could clarify and reinforce the concept establishment. Working together made the group members support and interact positively. Although two interviewees said a few students did not preview or prepare well, all the interviewees thought the in-class activities were meaningful and beneficial for their learning. They do not like to work with this kind of team members. As for the teacher’s role in class, he/she was a facilitator, giving assistance when needed. It was quite different from traditional teacher-centered classroom and may not get used to it, but all the interviewees liked this type of learning gradually. They could take the responsibilities of learning.

Interview Q3: What do you think of your role in the in-class activities, such as group discussion or complete learning tasks?

*“I am like the orchestra leader because I can integrate each other’s opinions in discussion. I learn a lot...” (S4)*

*“I am a productive member, always giving my opinions. But one of my classmates in our is not well-prepared...He always listens to each other’s discussion...” (S7)*

*“I contribute my opinions and ideas. I like the supportive feeling so much...But, some people are not responsible for their learning, like hitch-riders...” (S8)*

Interview Q4: What do you think of your teacher’s role in the involvement in class?

*“The teacher is supportive whenever the group needs. The teacher will give us some clues when we are confused or when we disagree each other...” (S1)*

*“I can’t get used to this kind of learning, but more and more I like it. After all, it is my own responsibility to learn...” (S9)*

Finally, the overall responses to the employment of flipped classroom model were positive, and their learning was better than the traditional in-class lectures. They gained learning motivation and confidence working with others. However, they also thought somehow this course has brought them some learning pressure.

Interview Q5: What’s your opinion on the integration of flipped classroom model into Introduction of Computer Science overall? Any suggestions or comments?

*“Interesting, but I feel a little pressure because I have to preview each week...” (S4)*

*“I have learned a lot and hope to continue learning in this way...” (S7)*

*“Overall, I am more confident and become more interested in the learning by using this kind of learning...” (S9)*

The results from the interview can correspond to the questionnaire results, both indicating the employment of flipped classroom model is a positive assistance for students' learning. It is likely that this model scaffold the learning from the pre-class activities to the group discussion in class. Students are able to spend time establish key concepts at the beginning at their own pace. Then, their concepts can be reinforced or clarified through group discussion or learning tasks in class. This finding is in line with the conclusions of some researchers (Butt, 2004; Fulton, 2012; Toto & Nguyen, 2009). As for the difficulties that they may encounter, the language used in the videos or the interaction with some group members, it was possible to happen. The language barrier may decrease the learning motivation or effects. Also, to prevent hitchhike riders in the group discussion, the assignment of roles to students may be needed. Each person has his or her own responsibility, such as the chairman, presenter, and recorder. In this way, the effects of cooperative learning may be raised.

### **Conclusions & Pedagogical implications**

The employment of the flipped classroom model has made the learning satisfaction positively in this study, including in the aspects of online learning materials, pre-class activities, and in-class discussion. Learners are able to access to the online videos and become responsible for their preview at their own pace. Then, they are able to clarify, reinforce, or contribute their own opinions of the learning concepts in class. Working in groups enables to form a supportive and less-threatening learning environment. As a result, this model makes students become motivated in the course.

To make the model become more effective in both pre-class and in-class group activities, two pedagogical implications are offered. First, the selection of the videos can focus on the simple language used either in Chinese or in English. For some low-achieving English learners, the aim of the learning is not the language itself but the content. The language may impede and takes lots of time and efforts, which often frustrates learners. On the contrary, if the language is easy to understand, they will not be stuck in the language. Once they understand the learning content, they are able to complete the in-class activities. Otherwise, they are not able to interact with other group members. As a result, key words or some assistance guidelines can be offered with the videos, which is able to be beneficial for those who needs. In this way, it may decrease the amount of time they spend on the videos, and the learning frustration.

Second, the individual accountability in cooperative learning can be emphasized by peer evaluation. To positively make every group member work together to contribute what they have learned from the pre-class activities, individual accountability is quite important. By means of the role assignment in the task, everyone has the role's task and responsibility to implement. Also, the use of peer evaluation can be an aid to the individual accountability. In the end of each unit, the teacher can ask each student to reflect what they have learned and what other members have done. In this way, the hitchhike riders of learning may decrease and will not annoy some group members. Everyone can have positive interdependence, making the cooperative learning more effective.

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**Appendix A Video Links for Pre-class Activities**

Week	Unit/Topic	Links
2~3	1. Computer Operation 2. numerical system 3. Boolean algebra	<a href="https://www.youtube.com/watch?v=26QPDBe-NB8">https://www.youtube.com/watch?v=26QPDBe-NB8</a> <a href="https://www.youtube.com/watch?v=cZH0YnFpjwU">https://www.youtube.com/watch?v=cZH0YnFpjwU</a> <a href="https://www.youtube.com/watch?v=2zRJ1ShMcgA">https://www.youtube.com/watch?v=2zRJ1ShMcgA</a> <a href="https://www.youtube.com/watch?v=NwBLk_0dUgQ">https://www.youtube.com/watch?v=NwBLk_0dUgQ</a>
4~5	Computer Organization	<a href="https://www.youtube.com/watch?v=8eODu6VYxtw">https://www.youtube.com/watch?v=8eODu6VYxtw</a> <a href="https://www.youtube.com/watch?v=ki0A-TDxvEk">https://www.youtube.com/watch?v=ki0A-TDxvEk</a>
6~7	1. Algorithm 2. Flow chart	<a href="https://www.youtube.com/watch?v=AVScy7YsKM0">https://www.youtube.com/watch?v=AVScy7YsKM0</a> <a href="https://www.youtube.com/watch?v=ENFp49wZfAE">https://www.youtube.com/watch?v=ENFp49wZfAE</a> <a href="https://www.youtube.com/watch?v=aqlfSTCys2U">https://www.youtube.com/watch?v=aqlfSTCys2U</a>
10~11	Operating System	<a href="https://www.youtube.com/watch?v=5AjReRMoG3Y">https://www.youtube.com/watch?v=5AjReRMoG3Y</a> <a href="https://www.youtube.com/watch?v=M9rUbHDcvNU">https://www.youtube.com/watch?v=M9rUbHDcvNU</a> <a href="https://www.youtube.com/watch?v=qNzhkrrsukc">https://www.youtube.com/watch?v=qNzhkrrsukc</a>
12~13	1. File Organization 2. Database System	<a href="https://www.youtube.com/watch?v=dpDRg--OuFA">https://www.youtube.com/watch?v=dpDRg--OuFA</a> <a href="https://www.youtube.com/watch?v=zcZ-HgpmCmc">https://www.youtube.com/watch?v=zcZ-HgpmCmc</a> <a href="http://study.com/academy/lesson/what-is-a-database-management-system-purpose-and-function.html">http://study.com/academy/lesson/what-is-a-database-management-system-purpose-and-function.html</a>
14~15	Data Communication & Network	<a href="https://www.youtube.com/watch?v=cxNxzJsyOfI">https://www.youtube.com/watch?v=cxNxzJsyOfI</a> <a href="https://www.youtube.com/watch?v=0zY1vNsHbNs">https://www.youtube.com/watch?v=0zY1vNsHbNs</a> <a href="https://www.youtube.com/watch?v=WGWi9TqUrHY">https://www.youtube.com/watch?v=WGWi9TqUrHY</a>
15~16	Information Security & Information Ethics	<a href="http://study.com/academy/lesson/information-security-basic-principles.html">http://study.com/academy/lesson/information-security-basic-principles.html</a> <a href="https://www.youtube.com/watch?v=eUxUUarTRW4">https://www.youtube.com/watch?v=eUxUUarTRW4</a> <a href="https://www.youtube.com/watch?v=l2CDhcqvVq4">https://www.youtube.com/watch?v=l2CDhcqvVq4</a> <a href="https://www.youtube.com/watch?v=w4OBmQNjG1g">https://www.youtube.com/watch?v=w4OBmQNjG1g</a>
17~18		Questionnaire & Interview

Note: Week 8 & 9-mid-term exam; no new topics for learning

## Appendix B The Questionnaire of the Use of the Flipped Classroom Model

### Section 1:

1. Gender  Male  Female
2. How do you evaluate your English proficiency?  excellent  good  fair  poor
3. How was your grades in the subject of “English” in the Freshman year?  above 90  89~70  69~50  below 50

Section 2: Please answer the questions based on your own personal learning experience by checking one box. “4=fully agree; 3=strongly agree; 2=slightly disagree; 1=completely disagree.”

Item	Statement	4	3	2	1
<b><i>Questions related to online learning materials</i></b>					
1	Learning from the online learning materials helps me prepare my learning about a new topic well.				
2	Visual images presented online hold my attention and help me understand the concepts of a new topic well.				
3	The online learning materials are clear and easy to understand.in explaining the details.				
4	The length of the online is quite acceptable for self-study.				
5	It is easy to access to the online learning materials.				
<b><i>Questions related to pre-class activities</i></b>					
6	I feel it is much easier to learn a new topic by means of the technology at home.				
7	The pre-class activities takes me too much time at home.				
8	I can learn the new topic at my own pace, rewinding or pausing or moving forward.				
9	I am more responsible for being in control of my own learning in the flipped classroom model.				
10	I prefer using this kind of learning activity to preview.				
<b><i>Questions related to in-class activities</i></b>					
11	The in-class activities help me identify the concepts of the content more deeply.				
12	The discussion within the group in class helps me enhance my learning development.				
13	The in-class activities can help me work out learning problems.				
14	To engage activities with peers in class makes me form good relationship with other group members.				
15	I learn a lot through group collaboration to work on the assignments in class.				

## **Appendix C The Questions for the Semi-structured Interview**

### Pre-class learning

Q1: How does the flipped classroom model help you have a better comprehension of the content learning?

Q2: Are there any difficulties that you may encounter in pre-class learning?

### In-class learning

Q3: What do you think of your role in the in-class activities, such as group discussion or complete learning tasks?

Q4: What do you think of your teacher's role in the involvement in class?

### Overall feedback of Flipped Classroom Model

Q5: What's your opinion on the integration of flipped classroom model into Introduction of Computer Science overall? Any suggestions or comments?

## *The Social History of Chronic STIs in Africa: Experiences from Cameroon*

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The Asian Conference on Education 2017  
Official Conference Proceedings

### **Abstract**

The emergence of chronic sexually transmitted infections (STIs) in Africa has been nightmare to medical scientists who experience different clinical, therapeutic and social challenges around these infections. Medical history show that HIV/AIDS and hepatitis B virus (HBV) are the only chronic STIs for the moment. This study narrates the life experiences of some patients who have lived with these infections above a decade. A public awareness of the trauma that HIV/AIDS and HBV infections have crown on the social lives of infected persons. A contribution of this current literature on health beliefs and social responses around chronic STIs in Cameroon. This qualitative study use the comparative approach of the grounded theory using focus group discussions (FGD), in-depth interviews and participant observations to collect data from a sample of 158 persons living with HIV and HIV/HBV co-infections. Data collected from patients selected amongst those with therapeutic complications, a FGD with patients found in social networks of infected persons and in-depth interview with care-providers and care givers. A content analysis and interpretation using the Social Dynamic Analysis theory and Cultural interpretative theory. Infected persons with HIV/AIDS have life experiences different from those with HBV and other infections at large. Their life experiences have over the years HIV patients leave from doubt to fear and rejection and presently shame, insult, accusation, and stigmatization that caused a new form of social life through networking. Some patients refused to seek for medical care due to psychological traumas from their entourage. New experiences as a result of the loss of loved ones, broken relations and emotional pain has become a new way of life. Ignorance about HBV and it modes of transmission makes it stigma-free. This study recommends a health system capable of integrating cultural beliefs.

Keywords: Social history, chronic STIs, experiences, Cameroon

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## Introduction

This study describes the new social set-ups that have been created within the individual and collective way of life of infected and affected Cameroonians since the outbreak of chronic STIs such as HIV/AIDS and Hepatitis B virus (HBV). Acknowledging that the outbreak of these infections have created different types of histories in the clinical, biological, therapeutic, and immunological perspectives, the social aspect of HIV/AIDS could not be underscored. The social modifications that have taken place in the history of infected and affected person with HIV/AIDS and HBV in Cameroon are quite different from the social history of other chronic infections such as; leprosy, cancer, renal failure, diabetes, hypertension etc just to cite a few. A lot of negative perceptions, beliefs and social responses have taken place in the individual and collective lives life styles of the infected persons and their entourage. This paper describes the historical evolution in the social and behavioural set-ups in a context where sexuality is still a taboo and the therapeutic challenges from the scientific and alternative medicines keep rising in the fight to find a proper cure to these infections. The negligence of the cultural reality in the practice of preventive and protective measures implicates the present focus of knowledge in this study. The role that culture plays in the history of chronic STDs in Cameroon cannot be overemphasized in the sense that most of the STDs (syphilis, chlamydia, gonorrhoea etc) were treated by alternative therapies in the different ethno medicines according to ethnic realities. The chronicity of HIV and HBV becomes a problem at the moment when health beliefs have rejected these infections.

Due to the inability to recognize these infections in these semi-modern communities, this study came with the conclusion that, the rejection of these infections originate from the fact that, no community in this country is able to find a local name for HIV or HBV. Consequently the belief that, they are 'strange' or 'foreign' infections fabricated to destabilize the social peace of Africans. Thus denial and rejection of this reality have been responsible for the persistence of new infections, therapeutic challenges such as viral resistance and the general instability in the managerial situation of this public health problem. A lot of studies have been done on social impacts on HIV/AIDS in Africa such as that of OBBO, C 1993, 1995, 1997, Paul Farmer 1992, 1996, but few of these works examine the case of Cameroon. Moreover, these studies were limited to social, economic, and political impacts. The present literature describes the new social set-ups that have been created in the individual and collective lives in the meso- community through new forms of social networks as measures to overcome the social stigma. Previous studies have neglected the inability to examine the new forms of social relationships within these communities as a result of infections. New forms of families, social statuses, friendships, marriages, relationships and way of lives are rising as a result of these infections. The issue of self or public accusations, blame, prejudices and guilt to infected and affected persons has caused this mechanism as a way to overcome the social stigma by infected person. Attitudes of denial by infected persons has been a cause of great re-occurrence of co-infections with other STIs and sero-different partners becoming all sero-positive in the nearest future.

This study describes the effects of rejection in the context of Cameroon and negative attitudes have made a social history. It also examine the main social modifications that have taken place since the outbreak of this infection and why the social history of HIV/AIDS is different from that of other chronic diseases. This study describes the social history that has been created in the social life of Cameroonians especially amongst persons infected with HIV/HSV. It a narration of the behavioral dilemma as far as sexual matters are concerned with person infected and affected with chronic STIs.

### **Brief background of this study**

This study was carryout in the University Teaching Hospital Yaounde in Cameroon. This health institution is a referent center of the first category that receives patients from the four corners of this country. It has a technical platform that is adapted to manage complicated cases of infections and most often opportunistic infections from HIV and Hepatitis virus in general. It is also amongst one of the pioneer centers for the management of Hepatitis B virus and other forms of severe infections in Cameroon.

### **Literature review**

The literature used in this study is mainly empirical literature. The main review approach is thematic approach. A summary of the existing empirical literature shows that, a landscape literature exist on HIV/AIDS in the world and Africa in particular and little on Hepatitis B. But a laborious amount of these works are mostly on clinical, biological, immunological and therapeutic literature in the domain of medical science. As far as social sciences is concern, the volume of scientific work done on HIV/AIDS is still evolving and few works exist on HSV. The general strength of the existing literature in social sciences tackles the question of HIV/AIDS from the methodological and disciplinary issues ( DOZAN et VIDAL, 1993), social construction and implication of AIDS, Social sciences, support and prevention of AIDS ( ANRS-ORSTOM, 1997). According to these works, social sciences were not much implicated in the management of HIV in the past decades. This could have contributed to some of the challenges faced by medical scientists since the problem of HIV prevention is mainly behavioral. Authors like (Paul Farmer 1992 and 1996, Christine Obbo 1993, Lurie, Hintzen, Lowe 1995, Millen and Lederer 1998) have written laborious works that critically reflects on AIDS in the context of Africa and some parts of the Western world. These works are mostly based on understanding AIDS and it implication in the domain of social sciences. But little has been done in the historical aspects of these infections. Such efforts as that of Nancy Rose 1994, who worked on the historical derivatives of STDs in Congo-Zaire are still having inconsistencies in the sense that, STDs and chronic STIs have a great difference in the perceptions and health beliefs as far as Africa is concern. The former are sexually transmitted infections that are cured or treated with indigenous therapies in various ways depending on the ethnic group and it indigenous potentials. Meanwhile the later have not yet have any specific therapy to eradicate or properly treat it. The fact is that, the former could be handled without a scandal as far it sexual origin is concern, whereas the later has always create a scandal since the medical scientists prescribes a lot of behavioural modifications to adopt in order to prevent or protect transmission. The

present literature tries to contribute to the epistemological gap that exist in the historical perspective of HIV/AIDS, while comparing it with Hepatitis B which is an infection with similar etiological and pathogenic characteristics like HIV/AIDS. It is not only tracing the history but showing the social modification that these infections have made in the social lives of the infected and affected persons in the context of Cameroon with a health belief different from that of the western context.

### **Statement of the problem**

Chronic infections have always been a health burden to both the health care provider, the care-giver and the patient at large over the years. This challenge is a general problem across the globe. The therapeutic management of chronic illnesses demands not only the management of clinical symptoms, but a holistic care of the patient in his/her psychological, social, financial, emotional and nutritional domains. While this norm is general for other type of chronic infections, it has been noted that, there is a deviation from the norm as far as chronic infections are concerned in Black Africa and Cameroon in particular. As far as chronic STIs are concern, there has been an exception in the health beliefs and social responses surrounding these infections in the context of Africa whose cultural beliefs about sexuality and it practices makes a taboo.

Since HIV was declared to be mainly a sexually transmitted infection besides other means of transmission such as; mother-to-child, blood transfusion, use of sharp unsterilized objects, it has created a historically reconstruction as a shameful, racialized, promiscuous (Nancy Rose, 1996) and most often categorized and feminized in the context of Cameroon. Hepatitis B on the other hand is still an emerging infection in this context and is fast becoming a public health problem in Cameroon due to the number of new infections and it prevalence curve similar to HIV. It is a major cause of morbidity and mortality in this country as the number of patients diagnosed at the terminal phase are rising in a same way as HIV/AIDS in the late 80s to early 2000s. This is because, many patients are ignorant of the existence and the modes of transmission of HBV and most often arrive the health units at the terminal phase where little medical help could be given.

For more than three decades, the government of Cameroon has been putting enormous financial and human resources as efforts to arrest the situation. These efforts have not been yielding good fruits in relation to the new incidence rate that continue to be at a rise (7600 new pediatric cases in 2015, PLAN: PTME), the average co-infection HIV/HBV prevalence rate stands at 8-10% (WHO, 2014), the prevalence rate of HIV in the general population stands at 4.3% (EDS, 2011), the prevalence rate in pregnant women stands at 7.6% (Plan eTME 2012).

Not with standing, there seems to be a great disparity in the perception of HIV and HBV which are both chronic STIs with the same modes of transmission and chronicity with respect to other chronic infections which are not sexually transmitted. These disparities in perceptions between these two infections have negatively influenced their therapeutic

management and consequently creating therapeutic challenges that are mainly of behavioral origin.

### **Objectives of the study**

The main object of this paper is to show how cultural beliefs and practices have played a great role in the creating a new form of social life amongst persons living with these infections. This has also contributed to the therapeutic challenges that the scientific medicine is facing in some parts of Africa and Cameroon in particular in the management of these chronic STIs. Given the fact that, these infections according to history were first discovered in the Western countries, and later speeded to Africa, the situation is known to be stabilized in the Western countries. Studies talked of infected persons who leaves for more than ten years without presenting any clinical symptoms, or hardly hear of sero-different couples who suddenly become all infected in the Western countries as is the case in Cameroon. It is current and frequent in the context of Cameroon to receive a sero-different couple who in the near few months become all sero-positive. Sexuality in general is still a subject of taboo despite the concept of modernization that is ravaging the continent of Africa. Modernization entails the enculturation of the Western way of life which in this case should have led to the open-conversation around issues of sexuality amongst different social strata in a normal or vulgarized way. This is not yet the case as far as the subject of sexuality and HIV/AIDS is concerned. The different social strata in the context of Cameroon perceive this subject differently and have different ways of looking at it. Meanwhile the elderly belief it to be a subject of youths who are sexually active and at time practice deviant sexual behaviours, the youth believe that HIV is a means to limit the enjoyment of their sexual lives. This paper describes the various social modifications that have occurred in the lives of the infected and affected persons in particular and the meso- communities. This makes a social history of chronic STIs different from the clinical and therapeutic histories that are widely known.

### **Methodology**

This is a qualitative study that uses the grounded theory approached. The core methodological strategies in the grounded theory is the constant comparative method and theoretical sampling. The term constant underscores the repetitive nature of the process which comes to a close when repeated comparison yields no additional categories. This qualitative study made use of the qualitative approach in data collection and data analyses. While trying to examine the influence of socio-cultural factors on a biological phenomenon, a comparative study of our subjects helped us to better show the differences in perceptions and representations of infections of the same etiology (virus), pathogenic form, main mode of transmission (mostly sexual intercourse), and their chronic nature. The objective is the generating of new awareness, knowledge from the research gaps dictated from the existing literature. A comparative constant approach enabled us to understand the differences in life-styles and therapeutic responses that have resulted from the social and cultural differences among the different social strata. Given the clinical and epidemiological similarities that exist in our study subjects, a historical approach enabled us to bring up historical facts about these infections and how the therapeutic process have

been influenced by health beliefs of Cameroonians in general and on chronic STIs in particular in their social-cultural specificities and similarities

### **Study Population**

Our study population was regrouped in to four categories: the first category drew samples from the lots of patients who for came for their clinical follow-ups for HIV/Hepatitis B and were faced with some clinical, therapeutic, social or psychological problems. The second category are those who are infected with HIV/HBV and have jointed some social networks. The third category of our study population were care-takers who accompany their relations to the care units. And last category were health care providers engaged in the care-process of these patients.

Our sample and sampling consisted of a patient suffering from a chronic infection, a health care provider, and a patient's relation. Our sampling method was the convenient sampling which took in to account the convenience sake of the study units that happened to be available at the time of data collection. Although it had it drawbacks in that the sample population was not quite a representation of the study population. . Our sample size was 158 informants and depended on the saturation point of information. Since we were working on social responses and health beliefs on chronic STIs in the context of Cameroon, we needed a representation of all or most ethnic groups in Cameroon to draw conclusions on our hypotheses.

We used two major methods to collect our data. These were the direct method and indirect methods. The direct method consisted of coming in contact with our informants for a face-to-face in-depth interview. The indirect method consisted of gathering information from participant-observations and documentary sources. The former method enabled us to proceed to a social construction of knowledge through the use of the content analyses of our research participants' declarations on their social responses and health beliefs around HIV/AIDS and Hepatitis B virus. Meanwhile, the later method enabled us to gather information through the observations of attitudes, gestures, body expressions, facial language from the research subjects.

Four principal techniques were used to collect our data. These are; documentary studies, in-depth-observation, face-to-face interview, and a focus group discussion. The documentary technique of data collection was facilitated by the use of some existing literature on HIV and Hepatitis B management in Africa and in Cameroon. This strategy consisted to gather books, articles, publications on chronic STIs or related documentaries from both libraries and Websites. The face-to-face interview technique was be facilitated with the elaboration of an interview guide organized in a thematic and sub-thematic forms corresponding to the main and specific research questions respectively. The participant-observation technique was facilitated with the use of an observation guide elaborated to observe how these patients do their clinical, social, and psychological follow-ups. We observed the how clinical consultations were being carried out, social consultations made and psychological follow-up done. A focus group was organized with patients who had regrouped themselves in associations or social networks. This was

achieved by the respect of Focus Discussion norms during the unfolding of this activity in order to collect data in a coherent manner. A discussion guide was elaborated to orientate the discussion session.

### **Ethical considerations**

We respected certain ethical principles during this study since it involved human subjects and sensitive issues around their private or intimate life. After collecting the ethical clearance from the study institution, we adopted two main procedures to collect our data. For the direct method of data collection, we started by introducing ourselves on the field, explaining the purpose of our research, stated the type of research intervention and proceeded to the selection of our participants. After selecting our participants, we described our research process, told them the duration of our research, possible risks that our participants might encounter and how to manage them, the benefits of this research to the participants and the country as a whole, explained the procedure that we were going to adopt to collect our data and explained that participation was voluntary.

We proceeded to collect our data. The process involved the meeting of patients while on their waiting-seats to see the doctors, the reception of patients and their care-takers in therapeutic education sessions at the psycho-social post. We met the patients with the doctors to discourse resolutions concerning their therapeutic challenges, and kept appointments with patients with similar social, clinical and psychological problems for a focus group discussion aimed at confronting patients with similar problems and making them learn from each other's experience. We also booked appointments with health care-providers (doctors, nurses, social workers, counselors, psychologists, community relay agents, and members of associations of persons living with these illness), to interview them. We fixed a venue and time to meet our research participants. At our meeting point, we interviewed them on their health beliefs and social responses on these infections following our interview guide. This process was repeated over and over with different participants in order to verify some facts and coherency in ideas. We stopped the recruitment of participants when we noticed that, our data was saturated and information kept repeating itself. Our duration on the field lasted for approximately 12 months.

The right to refuse or withdrawal was allowed to participants. They could stop participating in the research at any time they wished without losing anything. Participants were allowed to ask questions immediately or later. They were also given the possibility to contact the Department of Anthropology, in the University of Yaoundé 1 if need arise. For the indirect method of data collection, we started by inquiring from our academic elders and supervisors from where we can get necessary documentation for this research topic. We then proceeded to the search of our documentation and screening them according to their importance. Since we could not get a large number of hard copies of our documentation, we looked for soft copies from the net.

## **Comparative presentation of HIV/AIDS and Hepatitis B**

HIV/AIDS has been existing in Sub-Saharan Africa and Cameroon in particular for more than three decades now with respect to Hepatitis B which that made it way in less than a decade. These two infections share etiological boundaries in many aspects. Firstly, they are all viral infections and chronic in nature. In other words, they cannot not be cured or eradicated completely as for the moment due to scientific limitations. But Hepatitis B in this case differs from HIV/AIDS in the sense that, it could also be caused by toxic infections. But this study was based on Hepatitis B from the viral origin.

Secondly, HIV/AIDS is similar to Hepatitis B through their modes of transmission. These infections are mainly sexually transmitted, although other sources such as mother-to-child transmission, blood transfusion and the manipulation of unsterilized or blood-stain objects do exist. And thirdly, these two infections when in the human body, evolve following different phases that give them different scientific names. The first phase of HIV infection that is usually asymptomatic is called the healthy carrier phase, meanwhile in the case of HBV the case is also the same. The infected person shows no clinical signs and cannot be suspected. When these viruses have stayed in the human body and have gain their place in the body defense system, they start to produce clinical signs which most often could not be clearly distinguish in the case of HIV. Infected persons could loss body weight which is not generally the case, present other clinical symptoms or frequently fall sick. But in the case of HBV, the infected person starts to have yellowish eyes and symptoms of body fatigue. The third phase of these infections that is usually called the terminal stage for HIV infected persons is called AIDS, meanwhile for HBV it is called liver Cirrhosis which is another way of calling liver Cancer. Meanwhile for AIDS patients, the situation could be rescue if proper medical care is given to the patient, for HBV only palliative care is possible. This is care meant to reduce the discomfort of the patient and to prolong life for some time. But the end results for all HBV patients who have reach the terminal phase is death. The above reasons have motivated us to pair these infections in the same cage. As far as social responses are concern, the following facts were noted:

### **Findings**

A 100% of persons living with HIV who are members of social networks of persons infected with HIV/AIDS are found in the urban zones or big cities in Cameroon. There are not social networks in the rural communities where individuals are known or identified by their names. The massive creation of associations of persons infected with HIV/AIDS in urban cities is as a result of the hiding of personal identities. 90% of these associations are made of women although some associations are purely feminine associations, the association for mix sexes are still filled with women. This shows that, women are bold enough to share their experiences with others than men in these communities. Secondly, many survivals who have lived with HIV/AIDS for above a decade are mostly women who are today widows. During this study, more than 66% of our respondents were widows. Most of them discovered their HIV status only after the death of their husband. Since the husbands have the cultural right of practicing polygamy,

they had multiple sexual partners were predisposed to be infected with the HIV virus before their women. Most of them knew their HIV statuses after the deaths of their husbands and decided to seek for care in order not to die and leave their children total orphans as was the case of their husbands. Many of these widows had this experience between the late 80s to early 90s when HIV/AIDS was diagnosed on some persons in Cameroon. Many people manifested the attitude of doubts, especially the men who refuse to seek for medical advice and consequently lose their lives.

Although some women also lose their lives, a greater number of survival are the women. A conclusion could be drawn that; women are more resistant to opportunistic infections than men. A good number of these women have remained single and never made any attempt to rebuild a permanent intimate relationship. Most of their intimate relationships are temporal and adventurous. Some of them have remained childless for the fear to infect others if they perform unprotected sex with the aim to have children. Those who are trying and willing to have a permanent intimate relationship such as marriage would prefer to contact social networks of infected persons to pose their candidature for a search of an infected partners with certain characteristics such as; age, ethnic group, profession and religious belonging. These are the new forms of social set-ups that have been created within the context of HIV.

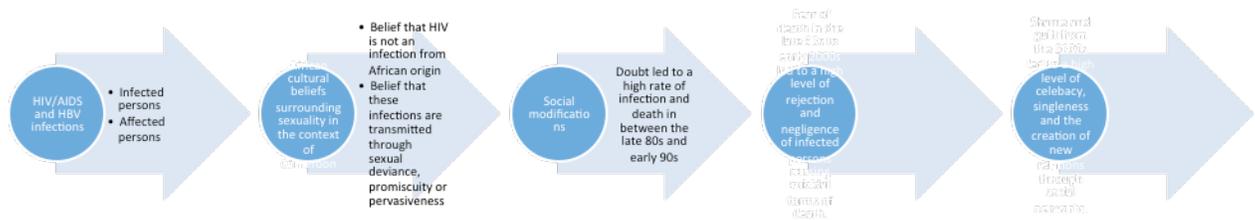
They could not believe that, an infection that was first diagnosed in the USA amongst the socially devalued class (Hess et al.1988), that is intravenous drugs users and homosexual could be a reality in Cameroon. It was also stated that it was a disease that was sometimes fatal and almost always a precursor of AIDS (New week, Nov. 24, 1986, p. 31). More to that, Westerners practice sexual pervasiveness or deviance as pornographic films show how people have sex with animals. This was the source of this doubt and consequently, HIV was denied, refused, rejected and believed to be a slow poison, illness from witch craft or sorcery. The attitude led to the death of many people since there was no adequate scientific therapy for it. Social relations were in total confusion and disarray. The quest for alternative therapies was at its greatest height. By then HBV was not yet existing in Cameroon.

By the late 90s to early 2000s this HIV/AIDS had killed many Cameroonians till the point that, it was difficult to point out a family that was not affected or infected in one way or the other. HIV/AIDS started gaining its effective presence in the minds of Cameroonians who started believing that, it was a reality. The attitudes of doubt started changing to fear. Fear for death because HIV/AIDS was believed to be a killer disease, a strange illness, a disease of the 'White-man', the slim disease, end of social life, a bad sick and a foreign disease (that is not recognized in this cultural universe). Fear of death was manifested by the rejection of infected persons by affected ones. With the efforts of the government through the Ministry of public health, Anti-retro-viral therapy was introduced in the management measures although it was very expensive to the extent that only a few Cameroonians could afford for this drug. The number of persons who die of HIV/AIDS continued to be alarming. Still HBV was still unknown in this context.

From the late 2000s till date, the attitude of fear changed to shame and guilt although some infected persons after taking the ART for some felt that, this drug could cure the HIV virus (Ingham 1995). This is because, the respect of this treatment for about six months as medical practitioners say, is capable of assisting in the proper eradication of some opportunistic infections, making the patient to be clinically well and physically healthy. But bearing in mind the modes of transmission of this infection which is mainly through sex, many infected persons are still unable to accept that they were infected through sex. Others means could be attributed for the contraction of this infection except through sex. Meanwhile HBV entered the scene of chronic STIs in the last ten years. Although much sensitization has not been done on this infection with respect to HIV/AIDS, many patients deny to acknowledge that HBV is similar to HIV in many ways as far as it modes of transmission is concern and viral evolution.

**Discussions**

In this study we had three variables that intervened at various levels to bring out the above results. As shown on figure 1 below, the operationalization of variables shows that the intervening variable here is HIV/AIDS and HBV that intervenes in a community with cultural beliefs that produce a corresponding social responses which are dependent variables.



**Figure 1.** Theoretical model for operation of chronic STIs in the behavioral modification of infected and affected persons in the context of Cameroon.

The arrival of HIV/AIDS and HBV in Cameroon has created a social history in the behavioral modification of the lives of infected and affected persons that is very different from that in the Western context where these infections first generated. From the beginning, the doubt of the true existence of the HIV infection led to a high rate of transmission and consequently, the death of many as a result of the absence of ART or any adequate drug to manage its evolution. This led many widows, widowers and orphans of HIV. There used to be a total phobia among the people that created a state of confusion and the fear of the end of social life.

But as time went on, this doubt turned to a permanent fear of death as soon as the name HIV is mentioned. Consequently, fear led a rejection and negligence of loved ones and friends because of the conviction no matter the efforts made towards the infected ones, they end up dying. Because HIV has no cure.

Since the arrival of ART in Cameroon and the free grant to patients, fear of death has been transformed to partial acceptance of self-confidence to live as far as a good follow-up is done. But at the level of social relationships, there is still that stigma of rejection, accusation, labeling and name calling. These have created a new form of social network that manifest in associative life where new intimate relations are created, new or organized marriages are made and where a new family is formed. This is not yet the same with HBV for many are still ignorant of the gravity of the infections and its mode of transmission. This is a brief sequential events that have taken place or made a remark in the individual/collective way of life of the Cameroonians since the arrival of HIV/AIDS and HBV.

According to the cultural interpretative theory of Geertz Clifford, an anthropological study needs a thick description in the direction of any study that asserts the essentially semiotic nature of culture that implicates for the social sciences in general. In the case of this study, the persistence of HIV in Cameroon could be attributed to the belief that individuals and collectivities give to this infection. From the beginning, HIV was never accepted in Africa and Cameroon because it was believed that, it is an infection that is mostly meant for people with sexual pervasiveness or those who practice sexual deviance. Sexual deviance in this study is the practice of sexual behaviors that are out of the cultural norms. Given that sexuality is cultural. This is why most infected persons were afraid to share their HIV sero-positive status to their sexual partners and consequently, their uninfected partners become infected along the line.

In the same perspective, most sero-different partners who become infected along the line after the infection of one of the partners are women. In this cultural universe, women are of the weaker sex, that is, do not have the right to deny sex from their husbands or impose the use of condoms to their husbands. In the same light, in most households, the men have the financial power that permit them to dictate the fate of their form of sex (Adomako Ampofo 1995, 1996; Anarfi and Fayorsey 1995; Ankomah and Ford 1993). They may be infected and never tell their wives or in case their wives are weak to resist the decision of the husband not to use condom or the marriage breaks.

The Social dynamic analysis of George BALANDIER state that change does not constitute a transitory stage but is a permanent state that can be endogenous or exogenous (or “out-side”). We use the exogenous factors that HIV and HBV have brought on the behavioral modifications of persons infected in Cameroon and their entourage. From the beginning of the history of HIV, infected persons in this community were afraid to continue with their social life in the areas of marriage and child bearing. This is how many people who were infected with HIV for more than two decades have either remained widows/widowers because they lost their partners from this infection, some are single women/men because they were conscious not to get married to someone who will

be infected later and others childless because they could do unprotected sex that could lead them to be pregnant. Today, although the medical scientist preach the practice of unprotected sex among couples who are on ART, the breast feeding of children born by infected mothers, the stigma still exist and has not been eradicated. But this society has developed other labels or coded language to discuss issues surrounding HIV/AIDS amongst infected persons who form a category of social strata.

The Health Belief Model of BECKER highlights the function of beliefs in decision-making. According to this theory, for a behavior change to take place, individuals; must have an incentive to change. A change in the sexual behavior of most Cameroonians entails a reduction of the number of sexual partners for those who culture prescribes it. It also entails the way of practicing sex which means the use of condoms or abstinence. But if the individuals concern do not see any incentive in adopting new behaviors, they would not do so. In the light if they do not feel threatened by their current behavior, they will still continue with their old behavior that promotes the propagation of these virus. The case of the traditional rulers is a good example in this society where the culture stipulates the marriage to many wives. The feeling that a change would be beneficial to some way and have few adverse consequences is not enculturated in this cultural universe. Thus the propagation of social stigma which is a major factor to the spread of these infections.

### **Significance of this study**

This study is going to enrich the theoretical knowledge on chronic STIs in general and HIV and HBV in particular. It is also going to show how the process of acquisitions of new or adapted behaviors and attitudes has taken place over the years since the HIV/AIDS and HBV started the chronic STIs history. The study is going to give practical modalities for policy development on social management of risky HIV/AIDS and HBV behavior in Cameroon.

### **Conclusion**

For over three decades that HIV/AIDS has existed in Cameroon, it is still making news and new stories amongst individuals and collectivities. The announcement of a sero-positive status still brings fear, shame and prejudice from the newly infected and affected since the belief that sexual promiscuity is at its origin. Another new scene arises from children born with this infection at the age of school and especially adolescent age when they have to know why they are on ART. Despite the fact that, the financial cost of the medical follow-up of HBV outweighs that of HIV, many patients seem to be motivated and curious to know more about the treatment process of HBV than HIV. They question of why me and a blame on my late parents.

The reliability and trustworthiness of this study is found in the research method that uses the participant observation technique to collect rich data in a short time and from a small sample. The data is verifiable and less costly. The study is limited to the context of Cameroon and the research methodology and data collection tools which are mainly qualitative.

## **Acknowledgements**

My thanks goes to the staff of the department of Anthropology of the University of Yaoundé 1 for initiating me in to the academic research world most especially Pr. SOCPA Antoine who is my academic supervisor for his relentless efforts in orientating my ideas. I cannot left out my some of my classmates like Tohmutain Peter and Fomete Ronny who have been closely working with me to carry out this research and my colleagues who assisted me in collecting the data. My regards goes to my husband, NDI Henry who has been supporting me psychologically throughout this academic process.

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***ICT Use: Changing Students' Perception in Learning Grammar Through Kahoot Program***

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The Asian Conference on Education 2017  
Official Conference Proceedings

**Abstract**

The background of the study in this research is based on the researcher's experience when doing teaching practice, in which method used by the teacher in teaching and learning process was often assumed as the factor that cause the students uninterested in learning grammar. In Indonesia, specially in East Indonesia, some teacher still used convetional method and did repition in teaching grammar. Teaching English as a second or foreign language need variation and creativity especially in teaching grammar in order to make the class more joyful, relaxed and make the students interesting in joining the class. This paper describe how kahoot program change the students' perception in learning grammar. As the part of technology, kahoot program can be use in online and offline because kahoot is a tool that designed as a learning platform that make it fun to learn and very applicable in English classroom for boosting the students' learning. In this study, the data were colleted by using questinaire that given before and after teaching. The result showed that teaching by using kahoot program raise the students attention and interested join the class.

Keywords: grammar, ICT, ICT program, kahoot

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## Introduction

Teaching English In Indonesia emphasizes on the students' skill in mastering the four language skill namently listening, speaking, reading and writing. The four skill should be reinforced equally. However, most student of senior high school still get difficuties in equally all of skill.

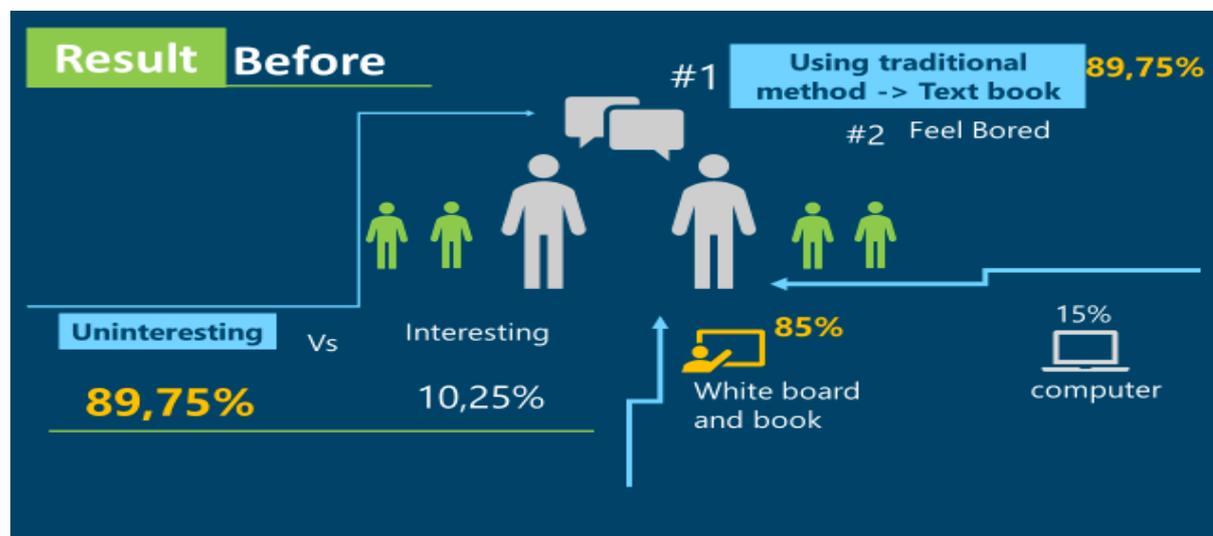
The difficultis got by the student in learning English specially in learn about grammar was caused by the teacher in senior high Sschool hat usually used traditional method in teaching and learning process. This method is not effective to the students because the student are bored, and they need much time to be able in masterig English. based on the researcher's experience when doing teaching practice, in which method used by the teacher in teaching and learning process was often assumed as the factor that cause the students uniterested in learning grammar. In Indonesia, specially in East Indonesia, some teacher still used convetional method and did repition in teaching grammar. Coghill and Stacy (2003) stated that the grammar of language is the set of rules that govern its structure. Grammar determines how world are arranged to form meaningfull units". Teaching English as a second or foreign language need variation and creativity especially in teaching grammar in order to make the class more joyful, relaxed and make the students interesting in joining the class.

That is way, based on the reasecher experience, this experiments was using other learning style in changing students perseption in learning English speacially in Learning Grammar by using one of learning platform in ICT is Kahoot!.

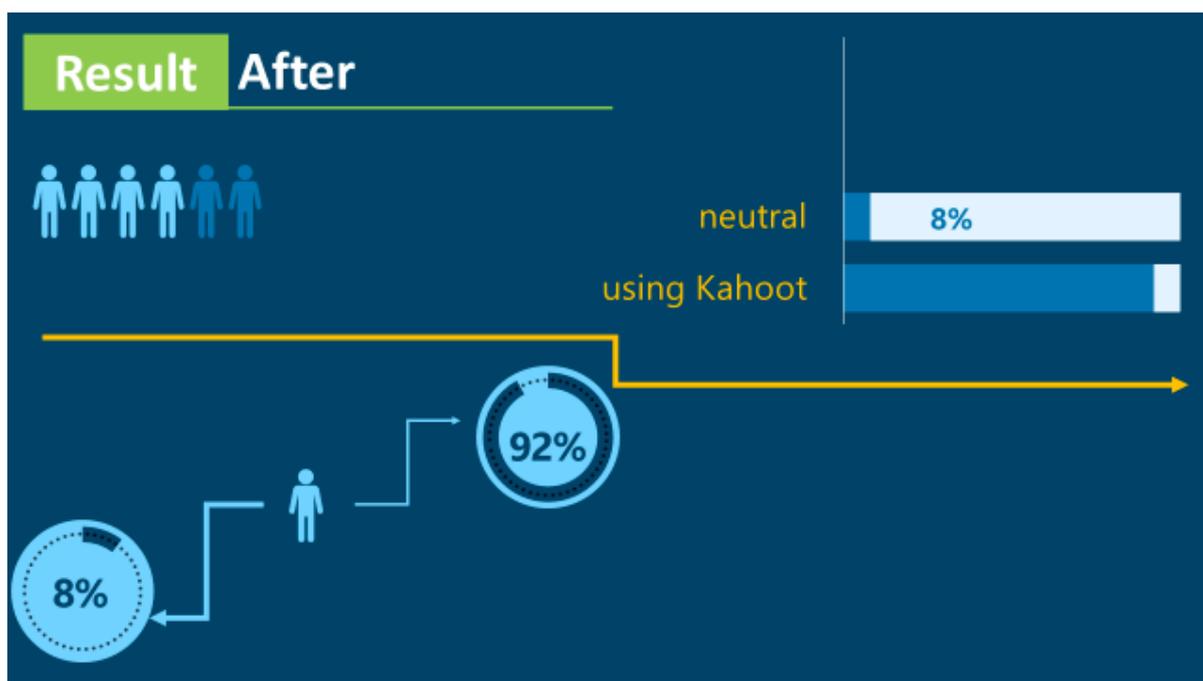
ICT inlcude of devices for encoding, storing, organizing, processing, retriving, transferring and presenting information with the elp of communication, television and computer (Yeul, 2013 cited by Budiati). By using ICT as a approaches in learning provide many opportunities to construct learning through their provision and support for resource-based, students center setting and by enambling learning to related to the context and practice (Barge, 1998; Barron, 1998 cited by Amin).

## Conclusions

There were some activities in conducting the data. The data was conducted by using questionnaires that have been answered by the students before using Kahoot and after using Kahoot. The student in this sample is one of senior high school students in East Indonesia, specially in North Maluku. Based on the data before using Kahoot, the data shown:



The data from the picture shown that 89,75% using traditional method by textbook make them bored in teaching learning process and became uninteresting in learn about English. It can see 89,75% uninteresting in learn differen with 10,75% for those who are interesting in learn grammar beacuse some of them are used privet course out of formal. Beside that, the teacher just used computer as much as 15% in teaching and learning process just to provide what the material have explain in the textbook. It means that, the teacher just shown the repetition material to using the facilities in the classroom and the most using white board and textbook.



In addition, after implementing kahoot in teaching grammar the response coming based on questioner and interview were variable. Most of them stated that using kahoot is more fun n teaching and learning process and looking forward in English clas or 92% stated it. However, 8% being in neutral becuse some of them come for rural areas uncapablelity in using smartphone or computer.

However, the litimitation on this reaserch is coming on the internet conection were sometimes unconection or limited acces. So, furthermore reaserch in using ICT need to give more attention in wifi connection.

### Acknowledgements

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***The Development of Multimedia Story Book for Promotion of the Moral and Ethics  
Development for Hearing Impaired Student's Grade 1***

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The Asian Conference on Education 2017  
Official Conference Proceedings

**Abstract**

Multimedia story book is useful and has many advantages for hearing impaired students. This paper presents information based on reliable literature reviews about the multimedia story book design framework for hearing impaired students. The purpose of this research is to explore the application of a multimedia story book approach in teaching the hearing impaired students in moral and ethics. In addition, the paper aims to inform educators as to the importance of understanding in three aspects of this study: multimedia design, hearing impaired learning design, and interface design. This current study shows how these three aspects can be combined to furnish a multimedia story book prototype for hearing impaired students. In the next phrase, the researcher will create the multimedia story book for hearing impaired students.

Keywords: multimedia story book, hearing impaired student, moral and ethics

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## Introduction

Providing education to hearing impaired students is important for the development of Thailand. Although, schools must be able to teach children with physical disabilities and focus on this group of children, schools also need to develop appropriate teaching methods that will enhance the development of hearing impaired students. Thus, the educational system in Thailand should not be confined to the hearing student. It must also provide opportunities for children who are hearing impaired, and who are considered disadvantaged (Department of Education, 2003). According to a survey of the disabled population, by the National Statistical (2017) 1,771,417 people out of the 65.4 million Thai populations have disabilities, including 323,735 hearing impaired. This represents 18.27% of the total Thai disabled population. Therefore, to provide education for those hearing impaired students, the traditional public and private schools have established a special education program which was established with the goal of providing a road to a successful, happy, and normal life.

The Basic Education Core Curriculum is aimed at the full development of learners in all respects such as morality, wisdom, happiness, and potentiality for education and living. Thus, the direction of such human capacity development would focus on providing children and youths with a firm foundation for attaining morality and public-mindedness, together with capacities, skills and basic knowledge essential to their future lives, leading to sustainability in national development (National Economic and Social Development Board, 2006)

This current study includes interviews with teachers (Angkana, 2017) in Thung Mahamek School for the deaf on 25 February 2017. From interviewer, the teachers said about problems as following: 1) The deaf and hard of hearing students didn't like to work together or teamwork, 2) They lack of kindness such as when the teacher carry heavy bag; they didn't help their teachers, and 3) They didn't share something or give for their friends.

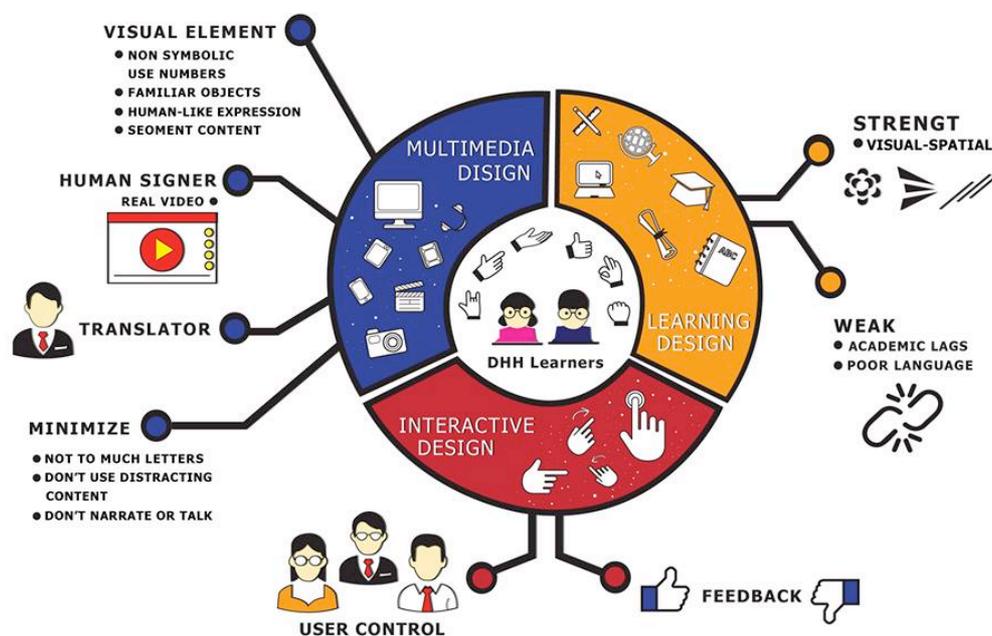
The study found that: In addition, Theunissen SCPM and et al., (2014) suggests that children with hearing impairment have to develop about moral because children and adolescents with prelingual, severe to profound hearing loss more often experience social difficulties than normal people, which is manifested in problematic peer relations (Wolters N and et al., 2011), behavior problems (Barker DH and et al., 2009), and antisocial personality (i.e., poor impulse control, lack of empathy). The students with hearing impaired, they were physical characteristics of these children. This is one factor that was cut off from society. So the opportunity to communicate or socialize is not the same as a typical child, such as facial expressions, inappropriate behavior with friends (Barker DH and et al., 2009), which delayed about social learning and ability to respond adaptively to another person's need (Decety & Jackson, 2004)

The way to solve problems in ethic and moral for students with hearing impairment is to help the student acquire a basic knowledge of how to adapt to another's person (Nunner-Winkler G et al., 1988) and social learning. The research related to students who are hearing impaired students including interviews with teachers found that hearing impaired students have the ability to remember images (Techaraungrong, et al., 2017) and deaf children will learn from what they see and what they do (Finney

EM, et al., 2001) indicated that visual and verbal learners learned better from multimedia materials than pictures or words.

The researchers suggest one way to address these problems of hearing impaired is to create multimedia-based instruction. This can improve social learning skills. The present findings posit that multimedia helps students understand content that cannot be described in words. It is widely used to present information so that people of all levels can understand quickly and accurately. The students learn more efficiently, develop creative thinking skills and understand concepts easier. Furthermore, findings indicate that media of instruction in story book for students with hearing impairment can be successful because picture can portray deaf gain through image fictional stories and other genres that portray the unique qualities and advantages of visual ways of being rather the loss of hearing. As a result, this study designed a framework to promote the moral and ethics development for hearing impaired students.

This study proposed to design multimedia story book for hearing impaired students. In order to meet the needs and expectations of hearing impaired student; therefore, the design principles were selected based on the analysis for identifying design consideration framework. Each category includes a set of features as follows: 1) Learning design that adopts the guidelines as strategies to present hearing impaired background such as visual strengths, academic lags, weak academic skills, etc., 2) Multimedia design that adopts the guidelines as strategies to design the interaction between the courseware and hearing impaired students, and 3) Interactive design that adopts the guidelines as strategies to reduce cognitive load. The researchers developed multimedia story book based on the consideration design multimedia framework (See Figure 1).



**Figure 1.** The multimedia story book design framework for hearing impaired

This current research summarizes the multimedia story book for hearing impaired students in three steps. Two steps follow the e-book design framework (Roskos K. and Brueck J, 2009; Mayer, R. E., 1997): multimedia design and interface design.

Furthermore, the researchers used the hearing impaired learning design pedagogy that focuses on the corporative nature of sight learning and learning style in a school for the hearing impaired. In the next phrase, the study will create the multimedia for hearing impaired students.

- Multimedia design

The multimedia design is implemented for the hearing impaired to support literacy, learning, principle and communication. Also included tips for creating multimedia design:

**Table 1:** Multimedia guidance (Mayer, R. E., 1997)

No	Multimedia guidance
1	Learners learn better from words and graphics than from words alone.
2	Students learn better when explanations are personalized rather than non-personalized.
3	Beginner learners learn better when given principle-based explanations than they do when asked to infer principles by themselves.
No	Multimedia guidance
4	Students learn better by manipulating the materials rather than by passively observing others manipulate the materials.
5	Students learn better when given opportunities to reflect during the meaning making process.

These principles are displayed in Table 1.1 to guide the process of learning. Mayer emphasized that educators need to design the instructional message in a manner that will facilitate students' cognitive learning processes. As such, educators should make the objectives for the educational activity clear to students ahead of time, and students should be encouraged to familiarize themselves with the topic of interest prior to attending the lecture.

**Table 2:** Mayer's principles for designing effective instructional multimedia (Mayer, R. E., 1997)

No.	Mayer's principles
1	Coherence Principle – People learn better when extraneous words, pictures and sounds are excluded rather than included.
2	Signaling Principle – People learn better when cues that highlight the organization of the essential material are added.
3	Redundancy Principle – People learn better from graphics and narration than from graphics, narration and on-screen text.
4	Spatial Contiguity Principle – People learn better when corresponding words and pictures are presented near rather than far from each other on the page or screen.
5	Temporal Contiguity Principle – People learn better when corresponding words and pictures are presented simultaneously rather than successively.
6	Segmenting Principle – People learn better from a multimedia lesson is presented in user-paced segments rather than as a continuous unit.

7	Pre-training Principle – People learn better from a multimedia lesson when they know the names and characteristics of the main concepts.
8	Modality Principle – People learn better from graphics and narrations than from animation and on-screen text.
No.	Mayer's principles
9	Multimedia Principle – People learn better from words and pictures than from words alone.
10	Personalization Principle – People learn better from multimedia lessons when words are in conversational style rather than formal style.
11	Voice Principle – People learn better when the narration in multimedia lessons is spoken in a friendly human voice rather than a machine voice.
12	Image Principle – People do not necessarily learn better from a multimedia lesson when the speaker's image is added to the screen.

- Learning design

DHH students have shown slower achievement than their same-aged hearing peers across academic domains, including math proficiency (Pagliaro & Kritzer, 2012; Zarfaty, Nunes, & Bryant, 2004). In order to promote successful integration in a mainstream educational setting and minimize the risk of academic delays, it is essential that early learning experiences build on academic foundations (Yoshinaga-Itano, 2004, Cole & Flexer, 2011). The learning design is the guideline to support the hearing impaired student and learning style:

- A strong primary relationship between child and parent leads to strong self-identity and more appropriate peer interactions.(Vaccari, C. & Marschark, M., 1997).
- The increase in deaf and hard of hearing learners, postsecondary institutions will be required to provide educational technologies to accommodate individual needs of the learners (Lang & Steely, 2003).
- Instructional designers will be instrumental in providing access to technology that will improve access to an equal education for students with disabilities (Joiner, 2010).
- Support from parents on social issues increases the child's social independence and increases socialization with peers and motivation to socialize (Crick NR, Grotperter JK, 1995).
- Deaf and hearing impaired use sign language for communication (Hoffmeister & Wilber, 1979).
- Deaf parents identify with their children, provide appropriate model relating with other deaf individuals and encourage autonomy within their children (Lane et al., 2011).
- Use of visual and spatial images, sense of sight and the visualization of objects and helps create internal mental images/pictures (Gardner, 1983).
- Use imagery instructions to facilitate learning, students are more successful in recalling and retaining information. The ability to create mental images is a part of cognitive learning. (Kosslyn, 1975)
- Interface design  
The interface design is the guideline to support the hearing impaired student when using the multimedia storytelling book:

- Icons for children should be designed, so they represent actions or objects in a recognizable manner and easily distinguishable from each other (Tessmer, M. & Richey, C., 1997).
- Icons should also be sized so that children can easily click on them (Shneiderman, B., & Plaisant, C., 2010).
- Use of text should be minimized for children (Mayer, 2009).
- Design multimedia and an interface that is familiar to the children in school and daily life (Aungkana, 2017).

### Application to the prototype

This study follows the multimedia story book design framework for the guideline in developing the prototype. This study examines the effect of multimedia use on hearing impaired children's ability to learn math using a multimedia storytelling book. During the development of the prototype, each step was tested with hearing impaired students who were the targeted users. The results of the testes were evaluated by teachers in the deaf school. From the evaluations, the strengths and weaknesses of the prototype were accessed and the comments by the teachers were used to improve quality and flexibility of the design. Formal evaluation for the completed prototype was conducted. Examples of the prototype are shown in Figure. 2, 3, 4, and 5. From examples, there were two stories about honest and thoughtful. The stories was based on daily life is school and home.



Figure. 2 Content of story



Figure. 3 Content of story



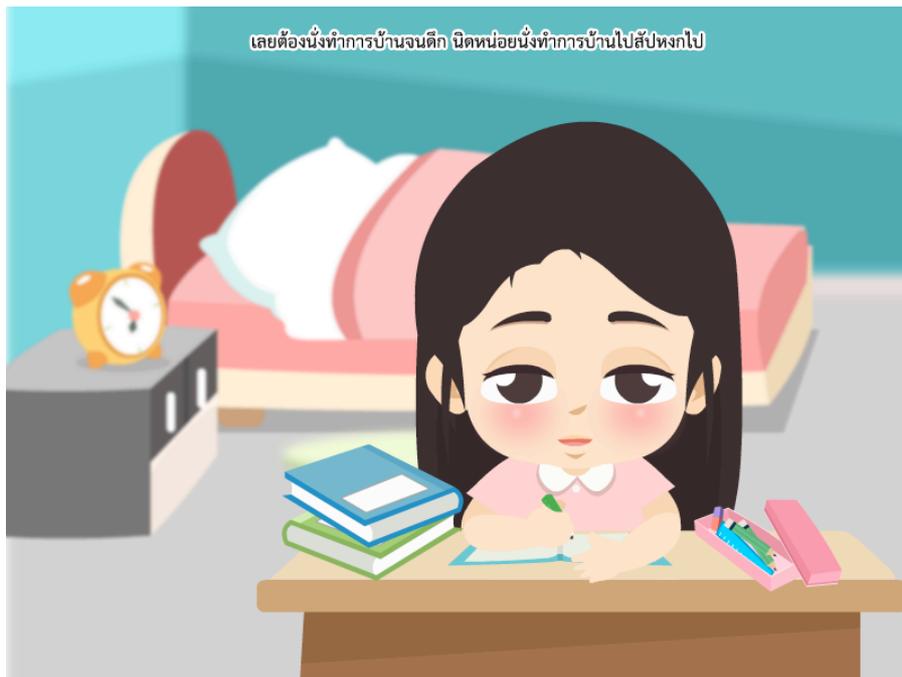
Figure. 4 Content of story



Figure. 5 Content of story



Figure. 6 Content of story



**Figure. 7** Content of story



**Figure. 8** Content about the scene of story

## **Conclusion**

This paper examines in four steps of the usability design of the multimedia story book based on a literature review; multimedia design, learning design, interface design and the hearing impaired learning. This current study also provides guidelines for students' use of the multimedia story book. The multimedia story book for hearing impaired was designed as an educational tool to support hearing impaired students and teachers in Thailand's school for the deaf. The first step of the framework of the multimedia story book has been designed and prototype. The current design covers ethics and morals because the Ministry of Education announced a policy and bringing knowledge, raising awareness of the value of sufficiency economy philosophy harmony, peace, etc (National Economic and Social Development Board, 2006). Morality is the foundation of the learning process that links families, institutions, religions, and educational institutions so that they are good people, knowledgeable and happy. This study is scope of two topic that to be thoughtful and to be honest.

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***Effectiveness of the Use (3D) Animation Programs to Development the Skills of Architectural Students in Designing; The Architectural Departments - College of Engineering- Baghdad University Model***

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The Asian Conference on Education 2017  
Official Conference Proceedings

**Abstract**

During the 1990s, anime appeared as one of Japan's cartoon Art , Anime is derived from the English term "animation". This type of animation is characterized by high quality in drawing pictures. As the first anime film appeared in Japan in 1955, this time came the appearance of the legendary cartoon "Osamu Tezuke" Who founded the rules of the Japanese animation world. The aim of the research is to develop the skills of the students of the first grade - architecture in the use of (3D) three-dimensional programs, dedicated to the production of motion graphics educational films for the design of buildings, which helps students to attract the recipient through the investment of all elements (size of the shot, movement of the camera and changing the angles of vision) Integrated for construction entrepreneurs. The researchers seeks to explain the stages of planning in the production of animated drawings, including the preparation of the idea, the scenario, the preparatory drawings of the buildings and backgrounds and the type and size of furniture according to the size of the rooms according to the variety of standards and requirements for the production of design and within the required specifications.

Keywords: Education, animation, architecture students, integrated for construction, production planning, buildings, standards and requirements, animated drawings, Students skills.

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## **Introduction:**

In traditional teaching process, teachers often using texts, simple graphs, slides and material objects as teaching aid means to enhance teaching effect. But, complex things, substances, principles, concepts and conceptions can only be taught in the form of text and imagination and finally form very abstract concepts. Comprehension requires rich spatial imagination ability. Thus, it is especially difficult to impart such knowledge. Because of rapid development of multimedia technology, the "researchers" tried to use technical methods to transfer pictures from its stability to more active projection by using (3D) animation to enhance teaching effect.

Anime is one of the types of animation produced by Japan, and the anime is derived from the English word "animation". Manga: The term used by Japanese for storytelling, used outside of Japan to denote comic books produced in Japan, or comic books drawn in a style similar to Japanese. This term may be used to refer to the industry related to this art as well as to the media through which it spreads (journals, magazines, etc.). Manga is a social phenomenon in Japan, which deals with almost all subjects (romance, adventure, science fiction) and goes to all segments of society as a whole. And is one of the most successful experiences in the field of comics globally. Japan's weekly Manga revenue is equivalent to the annual revenue of the American comics industry.

In the early years of 1914, talent in the world of animation began in Japan at the hands of amateur painters. The manifestations of these beginnings were markedly influenced by American and European graphic artists

## **Definition of Animation:**

The word 'Animation' is derived from the Latin word 'Anima', which means soul. It breathes life into imaginary characters. It is gaining popularity in the world of entertainment & multimedia. Apart from being a source of entertainment animation is also an educational tool. It is a form of art that is celebrated in the world wide film festivals.

The "researchers" definition for Animation can be defined: as an illusion of motion. It is the process of creating the illusion of moving images & model by displaying sequential images in rapid succession.

## **Definition of Multimedia:**

Vaughan and Judith agreed that "Multimedia is a combination of written texts, drawings, linear configurations, sound, music, animations, static and animated images provided through a computer. These are multimedia elements, and at least three elements are used in the program. The multimedia system relies on a computer or system And an interactive prerequisite for this system. "(Judith and Vigan,1995)<sup>(1)</sup>.

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<sup>1</sup> . Judith Jeffcoate . Multimedia in Practice technology and application. New Yourk. The RAISE language group. 1995. P7-8.

According to Reves, multimedia is a computer database that allows the user to access information in various forms, including written text, graphics, video and audio, and calls the learner the information he needs according to his needs and interests. The word Multi-Media is composed of two "Multi" "Means any means or means that means the use of a range of communication media such as audio, video or image in a combined and integrated in order to achieve effectiveness in the process of teaching and education, that is a mixture of elements placed in a general format, consisting of a variety of different means of communication . (Thomas C. Reves 1993)<sup>(2)</sup>.

**Digital animations that can be produced by a computer are classified into two types:-**

### **2D animation:**

Where the item is placed at a certain point so that the computer calculates one of its dimensions to be the starting point, and then placed at another point after that to form the end point and the computer calculate coordinates as well. The computer then calculates the coordinates of all the points on the linear path between the two points that have been identified as the starting and ending points.

The computer then starts to place the element at each point of the path it selects after clearing the item from the previous point, so the element appears to be moving from one point to another, and with certain speeds displayed, the element appears to flow in a smooth flow from the starting point to the end point Then produce some animated graphics.

### **3D animation:**

The process of designing a three-dimensional moving element through the creation of a hometown, the creation of a profile, the creation of a horizontal projection, and the introduction of these three projections into three-dimensional animation design programs are integrated into a basic form of the element.

When this model is complete, it is safe to add the effect of light and shadows to this display. The effect of shadow and light changes when the element moves, giving more realism and motion to this model.

Through the " researcher's" analysis of many studies and sources similar that dealt with the use of computers in the production of animation films found that the programs used in production are divided into two types:-

### **1. Multimedia programs:**

Multimedia programs such as Flash and Directors, which are programs used specifically for the production of educational program, but the ability to download graphics, sound and video and included the tools of animation and drawing tools and audio tools, enabling it to produce a film animation two-dimensional small size can Upload it easily on the Internet.

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<sup>2</sup> . Thomas C. Reves. Evaluating Interactive Multimedia, Educational Technology . May, 1993, P. 47.

## 2. Specialized animation production programs:

It is a software specially designed to produce motion graphics movies, divided into two-dimensional programs that tend to focus on hand-processed images, and three-dimensional programs that usually rely on the construction of virtual worlds where moving objects.(3D) animation can create images that look real to the viewer.

The "researchers" start to adopt the use of programs that produce (3)Dimensions require a long period of training to produce an educational film drawings with all the elements of production and the "researchers" confined to in the list of skills to produce animated graphics animation skills of production of (3D) animation.

### Pre- studies:

#### 1. Qiong Wang.(2017). Design of 3D Animation Special Effects in Animation (3D) Modeling Teaching Based on QFD Theory.

A multimedia teaching device based on synchronous text teaching content display was designed by utilizing multimedia and animation technology. The device can make relevant text appear synchronously while the teaching video is played. It can achieve perfect combination of video and text, reduce learning load and improve learning efficiency. To estimate this new teaching device, we chose the students as the objects of study before and after using the device, and combined QFD theory for quantitative evaluation. Finally, such conclusion was drawn that this teaching device indeed has an ideal teaching effect. <sup>(3)</sup>

#### 2. Denis Dedov, Mikhail Krasnyanskiy. Design and Development of Adaptive Simulators Using 3D Modeling.

The analysis of the effectiveness of adaptive training systems for training personnel to work in regular and emergency situations at the enterprises of chemical-technological profile was performed. It is concluded that for the chemical industry the simulators based on interactive 3D models of production facility are the most effective. The analysis of the main causes of emergency in the chemical industries allows developing a structure of the automated information system, which is a major component of the training complex. The classification of all basic objects of the virtual space was performed to formalize approaches to create simulators based on interactive 3D models of production facilities. The combination of these sets of the main objects of virtual space together with many auxiliary facilities (light sources, animations, etc.) allowed to produce a formalized model of the virtual space of production facility. The proposed theoretical approaches were implemented in the development of adaptive training complex for training personnel of chemical enterprises in the Tambov region, the Russian Federation.

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<sup>3</sup> Qiong Wang (2017). Design of 3D Animation Special Effects in Animation 3D Modeling Teaching Based on QFD Theory. China .University of Science and Technology Liaoning, Anshan. iJET – Vol. 12, No. 7, 2017.pgs:(90-100).see. <https://doi.org/10.3991/ijet.v12i07.7218>

The developed adaptive training complex is focused on the use of 3D models of virtual reality. It also provides the possibility of training on the real object with the use of augmented reality technology.<sup>(4)</sup>

### **3. Ahmed Talaat study (2009)**

The aim of the study was to design an animation-based educational program to provide English language skills to students of basic education in order to achieve the following objectives by: (1) defining the English language skills required for the development of basic education students through animation programs; To measure the effectiveness of the proposed program in the achievement of English reading and writing skills among students in basic education.

The importance of the study lies in the need to use animation-based computer programs in the educational process and to contribute to the development of educational software production using animation programs to provide English language reading skills to primary school students. The study sample consisted of (15) students of the fourth grade in the school of nuns in Damietta city. The limits of the study included 1. Human limits: a sample of 15 students of the fourth grade in the school of nuns in the city of Damietta. 2. The temporal boundary: the second semester of the academic year 2008, 2009. The researcher followed two approaches: analytical descriptive approach . Results showed statistically significant differences in favor of animation-based software.<sup>(5)</sup>

#### **The Benefits of the pre-studies:**

#### **The "researcher" benefited from previous studies:**

1. To define the basic technical of design for animated educational drawings.
2. Determining the components of the technical design and its standards.
3. Familiarity with international technical schools of 3D animations such as "Disney School" and "East European School" and the extent to which these technical schools differ in the films they produce.
4. To recognize the different methods of producing animated drawings, where the technical studies were characterized by deep and professional in this area, so that the methods of producing animated drawings.

In this study the "researchers" exceeded the (20) methods and tried to inventory and provide the most common methods used for student at the architectural departments- College of Engineering.

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<sup>4</sup>Denis Dedov, Mikhail Krasnyanskiy , Artyom Obukhov and Alexey Arkhipov. Design and Development of Adaptive Simulators Using 3D Modeling. International Journal of Applied Engineering Research ISSN 0973-4562 Volume 12, Number 20 (2017) pp. 10415-10422 © Research India Publications. <http://www.ripublication.com>.

<sup>5</sup> Ahmed Talaat Mohamed Sahloul.(2009) The effectiveness of using animation software to improve English language skills in the basic education stage. Msc.unpublished. Egypt. Mansoura University, Damietta Branch. College education quality . Computer Teacher Preparation Section. 216 pge.

**The "researchers" extracted the main points of the educational and cognitive content to be taught to the architectural students so that they can produce motion picture animation films:-**

1. Introduction to the theory in the production of 3D instructional graphics films
2. Design (3D) animation Scripts.
3. Design cartoon characters and prepare them to work within the animation program.
4. Prepare audio elements.
5. Design animation scenes cartoon characters.
6. The Ultimate Film Editor.

### **Steps to Design 3D Using a Computer:**

**1. First Step: Scenario Preparation:** the Scenario which contains a general description of what will be done with the computer, including description of places, lighting, events and dialogue. The film scenario is divided into two main elements:-

a. **The written script:** script which includes all the details that will be performed in the film, including how to move from scene to scene, the dialogue that will record the film, character description, background, nature of the music and description of the characters' voices.

b. **The Drawing Scenario:** it is the guide to tracking the events of the movement in the story of the film, where the scenes are cut and identify the required footage, and personal planning and dialogue appropriate, and is clear relationship to the background and description of the event, taking into account the nature of cameras and lighting and perspective when designed.

### **2. Second Step: design characters and backgrounds:**

This will includes:

a. **Design of cartoon characters:** Drawings that show the cartoon characters that will appear in the film and include size, clothing, emotional characteristics and relationships with other characters.

The characters can be drawn manually and then inserted into the computer by the scanner or drawn directly using graphics design software available specifically for this purpose, whether characters that will be designed two-dimensional or three-dimensional.

b. **Background design:** means by the places where the story of the film is going. They are used to confirm the type of climate in which they live and confirm their dramatic psychological atmosphere.

### **3. Third Step: Audio recording:**

One of the most influential factors in the success and effectiveness of motion graphics is the use of sounds, sound effects and stylized music that are of their own character, aiming to create value, increase interaction, attract attention and stimulate the mind. A sound factor is one of the most important elements that helps the success or failure of designing a movie animation.

#### 4. Fourth Step: Animation:

The movement plays an important role in the effect of motion graphics. It is the boundary between the drawing and the motion. When drawing frames, the frame of the first frame and frame is called motion. These frames are called the main movement keys. The frame Interchangeable Keys.( Mohammed Dhahi .2014)<sup>(6)</sup>

#### 5. Fifth Step: The editing

At this step, video editing software is used, where all the production elements produced in the previous stages are assembled. The footage that is taken individually is assembled into a scene-sized snapshot with the numbering of each scene. At this step, which then took place in the previous stages and then treated or re-produced again, and then all the elements of the sound are assembled from music, dialogue and effects and linked to the image so that each audio element is associated with its own scene. In the final step all the scenes are included in a single film file.(Wong.2013)<sup>(7)</sup>.

#### Case Study:

The "researchers" seeks to adopt a program prepared for Architectural students in designing extends to (3) months/student of the 1<sup>st</sup> year. ., The experimental treatment material, of animation-based program, was designed to provide students with the basic skills of producing animated educational drawings by training them to study the modules in a sequential sequence. In accordance with a training program that continues according to a timetable that lasted for (6 units/3 months).

The program starts from teaching the elements of the animation drawings and ends with the production of the films, which is the project of each student after the completion of the training period. In order to ensure the production of educational drawings in accordance with logical sequence steps arranged. At the end of (6units/3 months) each student will subject to the final evaluation through the submission of the final project. See table (1:2) show aspect of (3D) Animation programs prepare for the experimental group of Students, and students (3D) educational animation movie.

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<sup>6</sup> Mohammed Dhahi Mohammed Tony Abbas. The use of integrated learning in the acquisition of students of the Department of Technology Education some of the skills of the production of educational cartoons and the development of their attitudes towards them .Ph.D. thesis. Cairo University . Institute of Educational Studies and Research. Department of Education Technology. 2014. Pge. (67-70)

<sup>7</sup> Yue-Ling Wong, Digital Media Primer: Digital Audio, Video, Imaging and Multimedia Programming, 2nd ed., Upper Saddle River, NJ: Prentice Hall, 2013. (ISBN-10: 0132923874. <http://users.wfu.edu/yhwong/publication/index.html>

Table (1). Presentation of the educational program.				
Seq	Units	Subjects	Method of implementation	Duration
1	Presentation of the educational program	1. Clarification of the general objective. 2. Explanation of sub-goals. 3. Presentation of models of educational films. 4. Explanation of how to use in the e-learning site. 5. Explain how to implement cooperative education. 6. Explain the Assessment. 7. Distribution training schedule. Teaching the animation elements.	Traditional lecture	1 month
			Send a summary of the lecture via e-mail to students	
			Distribute lecture content	

Table (2). Presentation of the educational program.				
Seq	Units	Subjects	Method of implementation	Duration
1	Practical training on the performance and the students skills	Preparing reports on the most important differences between (3D) animation movies	Evaluation of student activity	1 month
		Download a collection of educational (3D) animation films and write a paper about elements shared between each educational animation films	Evaluation of student activity	
Table (3). Presentation of the educational program.				
Seq	Units	Subjects	Method of implementation	Duration
1	Practical training on the performance and the students skills	<ol style="list-style-type: none"> <li>1. Write the movie title</li> <li>2. Formulation of the general idea</li> <li>3. Compiling a synopsis for the film</li> <li>4. Writing a script for the film</li> <li>5. Choose a program to execute the movie</li> </ol>	Practical model:	1 month

### See : Student projects models (3D) animation educational films



### Conclusion:

The training program has contributed positively and effectively to the theoretical knowledge of the skills of producing 3D animation films among the students of architecture at the University of Baghdad, the researchers recorded some points during the program

1. This study was characterized by the superiority of the students of the (experimental group) who were joined and subjected to the (3D) animation program, and students of the (control group) that studied using traditional education. The first group acquired the skill of education and the profession of producing animation films which opens up the horizons of work within the labor market and the production of educational films

2. The impact of producing (3D) animation of educational film is different among the students compared to the students' projects. That can be related due to individual differences in the acceptance of the program and acquiring the student's skills at the same level.(excellent for best (3D) movie /accepted for pass) project at the end of the course.

3. The training program actively and positively contributed to the skills of producing (3D) animation films for architectural students at the University of

Baghdad, and its impact was much stronger than the traditional way of developing this aspect.

4. The "researchers" recommended to add a complete course for the production of (3D) animation films for the student list for the Department of Architecture for undergraduate and postgraduate stages.

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## *The Effect of Game-Based Learning on Science 10 Test Scores*

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Official Conference Proceedings

### **Abstract**

Game-based learning (GBL) is one of many methods that enhance the classroom learning environment by increasing student motivation and engagement. In recent years, the availability of game resources on the internet and the ubiquity of mobile devices have generated more interest in game-based learning. There are few researches, however, on whether it improves retention or not. The purpose of this study is to explore the effect of game-based learning (GBL) on test scores (quick checks, quizzes, and forms) of Grade 10 students in Science class. The study used a one group post-test only design for a four-week learning activity. The participants included 204 Grade 10 students in six classes of Miriam College High School. Three classes were exposed to GBL (experimental group) and the other three classes learned with traditional teaching approach (control group). The Mann-Whitney test for independent samples revealed that quick check scores of students in the experimental group were significantly higher than that of the students in the control group. However, no significant difference was found between form and quiz test scores of the two groups. This suggests that game-based learning may be effective in improving short-term retention, leading to higher scores in post-tests administered shortly after the game. However, there is insufficient evidence to determine whether or not game-based learning is effective in improving long-term retention or scores in long-term post-tests.

Keywords: games, GBL, game-based learning, post-test scores, retention, Mann-Whitney Test

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## **Introduction**

### **Background of the Study**

Science is a highly-conceptual subject matter. Some issues in Science learning include its abstraction, thus, many students tend to lose interest which oftentimes leads to boredom. Moreover, many of them do not see the relevance of Science in their lives (Osborne, et. al., 2003). According to Butler (2011), for Science teaching to become successful, a teacher must develop and include carefully constructed strategies which encourage students to learn and apply Science concepts in the classroom and in their lives.

Games are a regular part of students' lives, no matter what their grade level. Students play games throughout the day on their computers, the Internet, and their cell phones. One of the few places they don't regularly play games is in their classrooms. Although some teachers use games as a part of their instructional repertoire, most teachers do not, and those who do include them may not be using them to their full potential (Marzano, 2010).

As teachers of twenty-first century learners, the need to incorporate novel and varied strategies in order to engage students and sustain their interest in Science is apparent. Incorporating games and simulations in the classroom is an effective way to address this (Hsieh et al., 2015).

In addition to this, digital games used in the classroom have been proven to provide more engagement for the learner, provide personalized learning opportunities, teach twenty-first century skills, provide an environment for authentic and relevant assessment, and are founded on sound learning principles (Mc Clarty, 2012).

### **Significance of the Study**

The results of the study will hopefully provide more evidence to show the positive effect of the use of game-based learning in the classroom. This has become especially relevant today, with the development of more digital games to engage students. This study could also affirm the use of game-based learning in improving student performance in Science.

### **Scope and Limitations of the Study**

The participants of the study will be limited to six sections of MCHS Grade 10 students for school year 2016-2017. These girls fall within the age range of fourteen and fifteen years old. Three sections under one teacher will make-up the control group (not exposed to games), while the other three under another teacher will form the experimental group (exposed to games). Games used for the experimental group were limited to memory games. These include Four Pics One Word, Cash Cab, Pictionary, Pinoy Genyo, Find Your Partner Game, and Jeopardy.

Science 10 course materials such as PowerPoint presentations, lecture activities, laboratory activities, and quick check / quiz / form questionnaires for all six classes will be kept constant. The study will only consider the students' quick check, quiz and

form results as a basis of their performance for a lesson unit. The course materials (lesson plan, lesson presentation slides, games, and post-test questionnaires) used in the control and experimental groups were prepared by both teachers. Some of the games were based on famous television shows/games like Jeopardy and Cash Cab. While others were based on popular games like Pictionary, 4 pics 1 word and Call my Bluff.

The study covered the following lessons: Biomolecules, DNA Structure and Replication, Protein Synthesis, Mutation, Evolution, and Population Ecology. There were nine quick checks, four quizzes, and two forms within the span of the experiment.

### Conceptual Framework

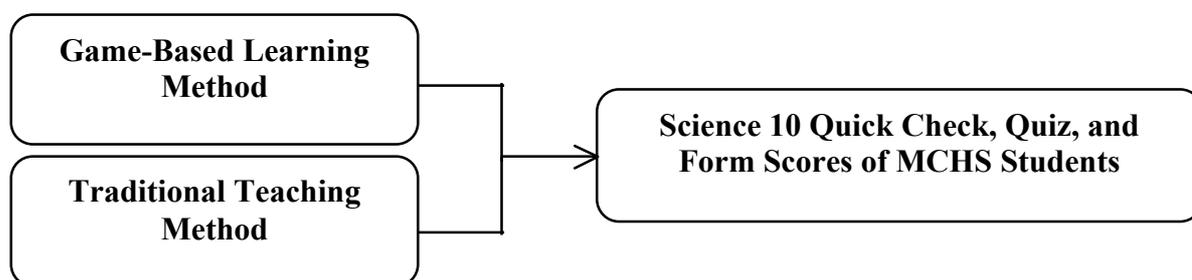


Figure 1. Framework for determining the effect of game-based learning on MCHS students' test scores in Science 10.

Referring to our conceptual framework (Figure 1), the study aims to determine the effect of game-based learning on Grade 10 students' Science posttest scores.

### Statement of the Problem

The study seeks to determine if there is a difference in Science test scores between students exposed to game-based learning and those who were not. Specifically, it aims to answer the following questions:

1. Is there a significant difference between Science 10 form scores of regular classes and that of game-based learning classes?
2. Is there a significant difference between Science 10 quiz scores of regular classes and that of game-based learning classes?
3. Is there a significant difference between Science 10 quick check scores of regular classes and that of game-based learning classes?

### Hypotheses

The following are the null hypotheses for the research:

H<sub>01</sub>: There is no significant difference between the quick check scores of the Science 10 regular group and game-based learning group.

H<sub>02</sub>: There is no significant difference between the quiz scores of the Science 10 regular group and game-based learning group.

$H_{03}$ : There is no significant difference between the form scores of the Science 10 regular group and game-based learning group.

### **Research Design**

The study used a one group post-test only design. The students' quick check, quiz and form results were considered as the post-test scores after the implementation of game-based learning in the experimental group. Three sections under one teacher made up the control group, while the other three under another teacher formed the experimental group. The sample size is 204 MCHS Grade 10 students, with 104 students making up the control group (traditional learning) and 100 students making up the experimental group (game-based learning).

The difference in mean scores between the two groups was determined using the Mann-Whitney Test for independent samples upon learning that the scores were not normally distributed.

### **Participants**

The participants of the study was limited to six sections of MCHS Grade 10 students for school year 2016-2017. These girls fall within the age range of fourteen and fifteen years old. Convenience sampling was utilized in gathering data, wherein one group was exposed to game-based learning while the other group was exposed to the regular / traditional lesson format. Three sections under one teacher made up the control group, while the other three under another teacher formed the experimental group. The sample size is 204 MCHS Grade 10 students, with 104 students making up the control group and 100 students making up the experimental group.

### **Research Instruments**

Testing instruments include nine quick check questionnaires, four quiz questionnaires and two form questionnaires (refer to Appendix B). Quick check questions usually belong to the following test types:

- Identification,
- Fill in the blank, and
- True or False.

Quizzes usually have the following test types:

- Identification,
- Modified True or False,
- Labeling,
- Matching Type, and
- Application (short essay).

Forms, on the other hand, follow the multiple choice type of test but incorporate analysis questions involving:

- Sentence analysis,

- Sequencing,
- Always, Sometimes, Never (ASN), and
- Odd-one-out.

## **Procedures**

### **Execution of Games**

The game-based learning group, made up of three sections under one teacher, was exposed to games that were incorporated into the subject period as motivational activities or review games.

The first game that was played by the game-based learning group was 4 Pics 1 Word, which was used as a motivational activity for the lesson on carbohydrates. In the classroom adaptation, a PowerPoint template (refer to Appendix C.1) of the 4 Pics 1 Word game was used to display the four pictures and blank letter squares that serve as clues for the players to be able to guess the mystery word. All of the students were asked to bring out their tablets and use the whiteboard app to write their guess for what the mystery word might be. At the end of fifteen seconds (15 s), the students were asked to raise their iPads to display their answers. The students were asked to explain their answers before the correct answer was revealed by the teacher.

Call My Bluff was the game used in preparing for the quiz on biomolecules. In the modified classroom version, a PowerPoint template (refer to Appendix C.2) of the Call My Bluff game was used to display the pictures of three scientists who served as celebrity guests and their suggested answers to each question. All of the students were asked to bring out their tablets and use the whiteboard app to write down the name of the scientist / celebrity who they think is telling the truth. At the end of fifteen seconds (15 s), the students were asked to raise their iPads to display their answers. The students were asked to explain their answers before the correct answer was revealed by the teacher.

A Find Your Partner game was used to prepare for the quiz on DNA structure and replication. All students in class were given a piece of paper with a term or description written on it. They were asked not to read the term upon receiving the piece of paper. A signal was given to read their assigned term. They were then asked to find their partner without talking or communicating verbally. Upon finding their partner, they sat down next to their partner and waited for everyone in the class to finish. Each pair was then asked to read their assigned terms and explain why the two matched.

Pictionary was used to review for the quick check on transcription. A volunteer from the class was asked to draw the word / term on the board while the rest of the class guessed the word. The remaining students blurted out their guesses until correct word has been announced. If the word had not been uttered at the end of 3 minutes, the volunteer revealed the answer and explained what she was trying to depict in her drawing.

Pinoy Henyo was used to review for the quiz on protein synthesis. A mystery word was given to the class volunteer, which she held facing her classmates. The guesser

asked yes or no questions which were answered by the rest of the class in chorus until the guesser blurts out the correct answer. If the volunteer had not guessed the correct term at the end of two minutes, the teacher revealed the answer and had the volunteer think of questions that could have led to the correct answer.

Jeopardy was the game used as a review for the form on biomolecules. In the modified classroom version, a PowerPoint template (refer to Appendix C.8) of the Jeopardy game was used to display the categories and questions for the game. The students were grouped by column and took turns representing their group per round. Representatives for each column/group were stationed at the back of the classroom, behind their group mates. They were asked to bring their tablets and use the whiteboard app to write down their answers. They were asked to raise their iPads to display their answers at the end of 15 seconds. A volunteer scorekeeper kept track of each group's score on the board. Before revealing the correct answer, the teacher asked the remaining members of the group to answer the question before confirming the correct answer to the class.

A quiz bee game with three rounds (Easy, Average, and Difficult) was used as a review activity for the form on central dogma and mutations. The students formed groups of five and were asked to write their group's answer using a whiteboard app on their iPad. Each correct answer was worth one point in the Easy round, three points in the Average round and five points in the Difficult round. Before announcing the correct answer, the students were asked to explain their team's answer.

### **Data Collection**

Quick checks are five- to ten-item tests that are administered midway and at the end of a lesson. Students are given five to ten minutes to accomplish the quick check. Quizzes range from twenty to thirty points. Students are given twenty to thirty minutes of the Science period to answer a quiz. Forms range from fifty to seventy points. The whole period of fifty-five minutes is allotted for this assessment. Quiz and form components are equivalent to twenty-five percent (25%) each of the final term grade. Quick check scores are recorded under the seat work / homework component which makes up fifteen percent (15%) of the Science 10 term grade. These are considered as short-term post-test scores while quiz and form scores are considered as long-term post-test scores.

### **Analysis of Data/Statistical Methods**

The Test for Normality was performed prior to the deciding on the appropriate test for independent samples. Since the data was not normally distributed, the Mann-Whitney Test for independent samples was employed to determine if there is a statistically reliable difference between the post-test scores of Grade 10 Science students who were exposed to game-based learning and those who were not.

## Conclusion

## Results and Discussion

### *Data Distribution*

The 204 Grade 10 students' quick check scores ranged from 13 to 58 ( $M = 42.25$ ,  $SD = 7.728$ ). The students' quick check scores were not normally distributed,  $W(204) = .979$ ,  $p = .003$ . The Grade 10 students' quiz scores ranged from 43 to 129 ( $M = 104.62$ ,  $SD = 15.419$ ). The students' quiz scores were not normally distributed,  $W(204) = .957$ ,  $p = .000$ . The Grade 10 students' form scores ranged from 39 to 89 ( $M = 72.69$ ,  $SD = 10.982$ ). The students' form scores were not normally distributed,  $W(204) = .949$ ,  $p = .000$ . Table 1 shows the descriptive statistics of the data set while Table 2 presents the results of the Tests of Normality.

Table 1. Tests for Normality of Quick Check, Quiz, and Form Scores

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
TOT_QUIZ	.077	204	.005	.957	204	.000
TOT_F	.104	204	.000	.949	204	.000
TOT_QC	.055	204	.200*	.979	204	.003

Note: *TOT\_QUIZ* = Total Quiz Scores, *TOT\_F* = Total Form Scores, *TOT\_QC* = Total Quick Check Scores

Table 2. Descriptive Statistics for Science 10 Quick Check, Quiz, and Form Scores

	N	Minimum	Maximum	Mean	Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Statistic
student_game_exposure	204	1.00	2.00	1.4902	.50113
TOT_QUIZ	204	43	129	104.62	15.419
TOT_F	204	39	89	72.69	10.382
TOT_QC	204	13	58	42.45	7.728
Valid N (listwise)	204				

Note: *TOT\_QUIZ* = Total Quiz Scores, *TOT\_F* = Total Form Scores, *TOT\_QC* = Total Quick Check Scores

### *The Mann-Whitney Test*

The Mann-Whitney two-sample rank-sum test was conducted to examine whether there were significant differences in post-test scores (quick check, quiz, and form scores) between the group exposed to memory games and the group that was not. The Mann-Whitney two-sample rank-sum test is a non-parametric alternative to the independent samples t-test and does not share the independent samples t-test's distributional assumptions. This is a more suitable statistical test for the study since the post-test scores were not normally distributed.

The form score mean rank of the group exposed to memory games was 103.04 while the mean rank of the regular group was 101.99. The Mann-Whitney Test revealed

insufficient evidence to show a statistically reliable difference between form scores of Grade 10 students who had memory games incorporated in Science class discussions and those who had regular Science class discussions ( $U = 5146.000$   $p = .899$ ).

The quiz score mean rank for the group exposed to memory games was 99.75 while the mean rank for the regular group was 105.14. The Mann-Whitney Test revealed insufficient evidence to show a statistically reliable difference between quiz scores of Grade 10 students who had memory games incorporated in Science class discussions and those who had regular Science class discussions ( $U = 4925.000$   $p = .514$ ).

The quick check score mean rank for the group exposed to memory games was 110.94 while the mean rank for the regular group was 94.38. This suggests that the distribution of quick check scores for the regular group was significantly different from the distribution of quick check scores for the group exposed to memory games, with the game-based learning group having a mean rank higher than that of the regular group ( $U = 4356.000$   $p = .045$ ). Table 3 shows the ranks of the two groups while Table 4 presents the Mann-Whitney Test results.

Table 3. Group Ranks

	student_game_ex posure	N	Mean Rank	Sum of Ranks
TOT_QUIZ	Regular	104	105.14	10935.00
	Game-based Learning	100	99.75	9975.00
	Total	204		
TOT_F	Regular	104	101.99	10606.50
	Game-based Learning	100	103.04	10303.50
	Total	204		
TOT_QC	Regular	104	94.38	9816.00
	Game-based Learning	100	110.94	11094.00
	Total	204		

Note: *TOT\_QUIZ* = Total Quiz Scores, *TOT\_F* = Total Form Scores, *TOT\_QC* = Total Quick Check Scores

Table 4. Mann-Whitney Test Results

	TOT_QUIZ	TOT_F	TOT_QC
Mann-Whitney U	4925.000	5146.500	4356.000
Wilcoxon W	9975.000	10606.500	9816.000
Z	-.653	-.127	-2.003
Asymp. Sig. (2-tailed)	.514	.899	.045

Note: *TOT\_QUIZ* = Total Quiz Scores, *TOT\_F* = Total Form Scores, *TOT\_QC* = Total Quick Check Scores

There were 100 students in the group exposed to memory games and 104 students in the regular group. There was no significant difference found between quiz and form

test scores of the regular group and the game-based learning group based on results from the Mann-Whitney Test.

However, it is observed that the form score mean ranks of the game-based learning group were slightly higher than that of the regular group. On the other hand, it is observed that the quiz mean score ranks of the regular group were slightly higher than that of the game-based learning group.

One factor that might have contributed to these slight differences in quiz and form test results is the difference in pacing of discussion. Pacing of classroom discussions is highly dependent on the number of questions generated by each class, thus, greatly varying the length of time allotted for a particular topic. Another factor could have been the allocation of time for the game in the case of the game-based learning group. Some discussion time is spent on the execution of the game and processing of the game results, while the regular classes had a lengthier discussion time for the topics. Another factor could have been that some of the games were used as a motivational activity rather than a review game. Subject matter in some of the motivational activities was trivia-related and not aligned with the competencies being checked by the post-tests.

Interestingly, the quick check mean rank of the game-based learning group ( $M = 110.94$ ) was significantly higher than the regular group ( $M = 94.38$ ). This is somewhat consistent with the findings of Rondon et.al. (2013) that Speech-Language and Hearing pathology undergraduate students who received the game-based method performed better in a post-test assessment focusing on a particular topic. However, they concluded that game-based learning is comparable to the traditional learning method in general and in short-term gains, while the traditional lecture still seems to be more effective in improving students' short and long term knowledge retention. In their study, the game-based method was limited to the use of computer assisted instruction with minimal lecture classroom discussions. This is in contrast with the definition used in this study, wherein game-based learning is defined as the integration of review games in traditional lecture discussions. The difference in definition of game-based learning, where review games are coupled with traditional lecture discussions, resulted in more positive results for game-based learning, in general. This is supported by the findings of this study that results of summative tests (form and quiz scores) of both groups are comparable to each other (as shown in Table 4).

As a review technique, games seem to be more effective than the traditional lecture review in improving students' ability to recall terms, concepts, processes, or ideas during the short-term post-tests (quick checks), usually administered immediately after the execution of the game, rather than long-term post-tests (forms and quizzes), which are administered a few days or weeks later. These findings are consistent with the results of Ke and Grabowski's study (2007). They compared Math post-test results of three groups of fifth grade math students employing three different review techniques (competitive gameplay, cooperative gameplay, and pen-and-pencil review). Their results showed that there was no significant difference in math performance between the cooperative game-playing group and the competitive game-playing group but both performed significantly higher than the control group (pen-

and-pencil). Incorporation of games, whether competitive or cooperative, seems to result in better performance in short-term post-tests.

### **Implications of the Study**

The classes that were exposed to game-based learning showed more interest in the subject matter, with a greater percentage of the class consistently participating in class discussions than the first term. This could mean that increased interest in the subject led to a slightly improved performance in the short-term post-tests but not the long-term post-tests.

Results of the study imply that:

- games should be used to supplement traditional lecture discussions since the findings of this study suggest that incorporating games in certain lessons is effective in improving short-term post-test results;
- different game-related applications must be introduced to and explored by teachers for lesson integration
- incorporation of games in particular lessons should be based on its appropriateness for the nature of the lesson;
- lesson planning should take into consideration the length of time necessary to execute the game, leaving enough time for covering the scope of the lesson; and
- perceived improvement in participation in class discussions by the game-based learning group suggests that there could have been unexplored and undocumented positive outcomes beyond the scope of the study like increased intrinsic motivation, improved interest, and development of a positive attitude towards the subject matter.

### **Conclusion**

The Mann-Whitney two-sample rank-sum test revealed a statistically reliable difference between the quick check scores of the Science 10 regular group and game-based learning group. On the other hand, the Mann-Whitney two-sample rank-sum test revealed insufficient evidence to show a statistically reliable difference between quiz and form scores of the Science 10 regular group and the game-based learning group. These findings suggest that incorporating games in certain lessons might be effective in improving short-term post-test results. However, the results were inconclusive regarding the effect of game-based learning on improvement of long-term post-test scores.

### **Recommendations**

1. **Documentation of Engagement in Class Discussions.** The improvement in participation of the game-based learning classes also suggest increased engagement in class discussions. However, this was not properly documented during the research. This was just based on the teacher's observation.
2. **Implementation of a Pre-Test – Post-Test Research Design.** If given the chance to improve the method of administering the study, the researchers recommend using the pre-test – post-test research design instead of the post-test only research design.

This method will be more effective in measuring the improvement in performance after exposure to game-based learning.

**3. Conducting a Science Interest Survey.** Adding a survey or means of measuring the increase in interest in Science could also be added to better support claims of the study.

**4. Alignment of Game Subject Matter with Competencies Measured by Post-Tests.** To make game-based learning more effective, subject matter included in the games must be aligned with competencies to be measured during the post-tests.

**5. Utilization of Other Game Types.** Since this study focused on review games, future studies could look into the effect of incorporating other types of games in improving retention of terms, concepts, processes, and ideas. Appropriateness of games and/or game types for specific topics could also be studied. Further studies on tournament game technique, wherein students' individual scores are collectively weighed against another group's score, could be pursued. Games in this format have been shown to increase personal accountability and engagement that lead to better performance (Salam, 2015).

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## *The Benefits of Typography in Materials Design in the Classroom*

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### **Abstract**

Understanding the basic principles behind design and typography in particular, is an often overlooked part of educator's basic training and practice. In the educational field, we interact with a variety of different text types and often take part in designing and creating new materials. This paper argues that typographical design is extremely beneficial for all educators. Typography is pervasive and present in all forms of written communication. It has the potential of being a hindrance or boon in the learning process. The author provides practical suggestions for how typography can best be utilized, and the positive effects it can have on classroom practice.

Keywords: Typography, materials design, practice, teacher development

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## Introduction

Robin Williams begins her bestselling book, *The Non-Designer's Design Book*, with an anecdotal principal known as the "Joshua tree epiphany." She relates an experience of having received a tree-identification book as a present. Opening the book to the first page, she is presented with a strange appearing tree known as the Joshua tree. Williams recalls thinking "That is a weird –looking tree. I would know if I saw that tree, and I've never seen one before" (Williams, 2008, p.11). Following this thought, she went outdoors, and to her surprise was able to identify the Joshua tree all over her neighborhood. She concludes her experience with these words, "Once you can name something, you're conscious of it. You have power over it. You own it. You are in control" (p.12). During my graduate degree, I had my own Joshua tree experience. A materials development course I was enrolled required that I read a section from William's aforementioned bestseller. Following the reading and discussion on materials design, I noticed the materials I had created were poorly designed. I quickly began experimenting with layout, typefaces, and other design-related principles. However, my initial efforts were amateur at best, and it wasn't until years later in my first full-time teaching position that I learned the true impact of design through two seemingly insignificant experiences.

The first experience occurred because of a report to the stakeholders of the University where I was employed. When my colleges and I received the report, comments concerning the professional nature of the report were common. Many commented that the title page looked great. One colleague remarked that regardless of the content, he was impressed by the professionalism of the author. For others, they simply noted that it was well done. For me, it was a Joshua tree moment. I knew that the report's typographical design had contributed to its high appraisal.

Months later, I participated in a community outreach program. Students from the community participated in short lessons at the university. Each student was provided with class handouts and additional self-study activities. As I perused through the materials, I was struck by the amount of appalling design errors, which in sum contributed to an overall impression of shoddy, unprofessional material. I was conscious of it but as a teacher required to use the materials, I also assumed ownership of them through no fault of mine.

Sadly, in regard to materials, teachers often have little or no control over what they present to students. On the other hand, practically every teacher in every context has a hand in creating, adapting, reviewing, and consuming a plethora of materials. A teacher performs a variety of roles in her or his career which are most always based on texts. From paper-based to digital mediums, chalkboards to tablet computers, all media used in a classroom acts as an interface between teacher and learner. How much thought do we give as teachers to the effectiveness of these mediums? Typography and design are critical parts of effective materials creation, without which materials cannot achieve maximum effectiveness. The principles of good typography and design are something that educators cannot afford to ignore.

## Literature review

Typography is a type of quiet media that “emphasizes the message of text...invites readers in, and keeps them there” (Williams, 2006, p. xi). Good typography is inviting to reader and creates a general sense of professionalism. Typography, though a quiet form of media, communicates a great deal of information to the reader. Essentially, typography is a key player in determining how well materials perform their roles. In environments such as the classroom, educators send messages to learners through typefaces, line-spacing, and point size, which are all seemingly miniscule or unimportant aspects of materials design. Papadopoulou, Manoli, & Zifkou (2014) conducted a study that found 44 of 46 children ages 4-6 were able to notice typographical differences without having developed formal reading skills (p. 5). We can infer that learners of all ages should be able to notice typographical changes. Though typography can factor heavily within the design of a document, it can also seemingly melt into the background behind the content. Whatever its role, it is part of the interactive dynamic process of creating meaning in a text.

Typography also contributes to the message of a text as “a basic interpretative act for literature, which is full of chances for knowledge” (Papadopoulou et al., 2014, p. 24). Typography can enhance and enrich text in ways that go beyond the words themselves. Indeed, this is a requirement for the increasingly complex media landscape in the modern world. The argument can be made that attention to the details outside of the linguistics content of a text are increasingly important. Kress et. Al (2001) describe this fundamental shift in the reading process in this manner:

*In this way, literacy pedagogy, particularly, the meaning-making process of reading comprehension skill, needs to be modified, as it can no longer be viewed as a process that is centrally contingent on language, but as a process where the various modes of communication are either woven jointly or are separated to produce meaning in order to keep up with the constantly changing world and meet the communicational demands of the era.*

So then, if the very nature of literature pedagogy is changing to match the rich modes of communication common in today’s society, typography must play a critical role, as it is “what communication looks like” (Felici, 2012, p. ix). The potential benefits and affordances of typography in the classroom are numerous, but hereafter I will provide three simple areas wherein typography and design can aid educators.

## Benefits of good typography in classroom practice

### 1. Design materials that communicate professionalism

One of the most important contributions well-designed materials make is on the perceptions of the parties exposed to said materials. In fact, the message of a text is partially constructed before a single word is even read. Visual design can communicate a variety of messages, both positive and negative, about the teacher or institution in which texts are used. The field of advertising employs various strategies to ensure brand recognition and positive emotional associations; the same principles can be applied to any other specimen of text. Poorly designed texts reflect poorly on the creator or designer of the texts, and may have negative connotations which are

applied beyond the text. On the other hand, a well-designed text may have the opposite effect. Sometimes the texts with the best typography and design are not noteworthy, because they draw attention to the content of the text rather than the design itself. When a text is able to fulfill its intended purpose in the most efficient manner, professionalism is a result.

## **2. Increase uptake of materials through readability and legibility**

Reading texts can be approached in different manners. Sometimes we want to read every word carefully. In this case, typography can be applied to create an optimal reading experience. Line length, spacing, and choice of font all contribute to the overall readability of a text. Other times we need texts that provide relevant information quickly, such as instructions which help to perform a task correctly. In these cases, texts designed for maximum legibility, meaning the ability to quickly read and understand a text, are the most appropriate. In essence, readers should be able to scan a text quickly and easily find relevant information. To aid in this process, creators of materials need to consider creating a hierarchy of information through a system of headings and subheadings. Properly segmenting and organizing the flow of information in a text will also make the materials easier to understand and follow. Classroom materials are in essence very similar to a recipe, a desired outcome is defined and the materials and method are given to reach the outcome. Think now about the formatting of a recipe; the design leads prospective cooks through a clear set of materials and methods with the information broken up into small chunks that are easy to understand at a glance. This same design strategy can be applied to classroom instructions and materials.

## **3. Create materials that can be shared proudly with others and or integrated into a curriculum**

One of the most important functions of good design is its ability to focus on communication. Good typography not only helps to communicate a message more clearly, but it creates communication around a text. Collaboration is more likely to take place when a text's content and aesthetics are sufficiently polished. It is easier to share and easier to use materials with good organization and typography applied. An organization is more likely to adopt materials on a larger scale if they are well designed.

## **Conclusion**

Typography is the visual aspect to textual communication. As such, typography is central in shaping the message of texts. It is not something that can be ignored in education. Good typography will improve the communicative ability of a text, and allow a text to extend and impact areas far beyond the walls of the classroom. Good typography can help materials reach wider audiences and provides support for educators in need of a voice or empowerment. Typography is powerful tool that should have a place in every educators' toolbox.

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***Transitioning to Student-centered Learning in Kazakhstan: Undergraduate Student Experiences***

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**Abstract**

Karaganda State Medical University has been transitioning and practicing active methods of teaching and learning since 2011. Faculty members are encouraged to lead their courses with diverse activities designed to increase student learning. Unfortunately, there is limited evidence regarding the extent of faculty members who evaluate their own courses. With this in mind, this paper aims to explore and share undergraduate students' learning experiences and the teaching of Philosophy at a medical university. The course, which ran from February to May in 2017, was taught in English. The class was divided into four groups of international students and two groups of local students. Using a qualitative method, a total of 63 students responded to open ended questions. Additionally, 23 students, comprising four students from each group, were engaged in focus group discussions. Students' participation and performance in classes were also observed over the period of the course. This presentation will focus on the outcomes of the study within the wider context of the discussion about ways in which Kazakhstani universities are opening up to educational changes in the context of globalization. Feedback from other conference participants is most welcome.

Keywords: active methods of teaching, learning experiences, philosophy, undergraduate students

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## Introduction

Since 2011, Karaganda State Medical University has been introducing new methods of learning into the curriculum. University leaders invite experts, underpin current research projects, and organize workshops and seminars for university administrators and faculty members. Currently, within the scope of international projects, several experimental groups are practicing problem-based learning. However, this study has uncovered that teacher-centered learning practices are still being experienced by students.

The twenty-first century requires that universities and policies educate active citizens, who are able to contribute to economic and social development following graduation. This has brought about changes in education; namely, with the alteration of the approach to teaching and learning. The previous method of rote learning has been replaced with small group discussions and independent learning. However, it is not enough to imitate active learning, as there also needs to be a method to assess the ways in which students are growing within this process in order to allow them to respond and adapt to global changes. The issues related to student learning remains significant among scholars across the world (Carpenter & Tain, 2001; Pintrich, 2004; Yilmaz, 2009; McCarthy & Anderson, 2010).

One of the ways to assess student learning, is to conduct a course evaluation. Varying results might be attributed to a variety of reasons, such as; teachers assessing their own professionalism through student feedback, or conversely, student learning may be the focal point of the evaluation. This has been pointed out by Golding & Adam (2014), who concluded that teaching methods have to improve students' learning experiences and academic achievements in ways that will demonstrate student learning. Through course evaluation, this study aims to explore the experiences of students who are transitioning from teacher-centered to student-centered learning.

Teacher-centered learning possesses clear criteria in order to assess gained knowledge. In comparison, it is difficult to gauge the level of knowledge and skill that students have gained through student-centered learning, which is a process where all students are actively involved and demonstrate a high level of contribution to discussions. In order to research common experiences of student learning, it is possible to use online surveys. However, a study conducted by Goos & Salomons (2017) found that an online survey, which was responded to by 28,000 students, resulted in biases and an overestimation of the course evaluation.

Another approach to exploring students' learning is to scrutinize students' preferred learning styles. Interestingly, research conducted by Hativa & Birenbaum (2000), identified that students who preferred to complete university courses indicate elements of teacher-centered learning, and those who preferred to complete courses with deep learning, suggested to expand student-centered learning. Hence, examining students' preferences provides evidence about their attitudes towards learning rather than learning per se.

Taking into account the advantages and disadvantages of two previous inquiries, this study decided to use paper-based evaluations, which increase the credibility and reliability of student responses, and are oriented in examining the students' descriptions of

their learning experiences. For instance, a study conducted by MacLellan & Soden (2004), analyzed students' open ended responses utilizing the criteria suggested by King & Kitchener's reasoning stages; 'pre-reflective,' 'quasi-reflective' and 'reflective thinking.' This method helped to identify that most of the students in their study showed quasi-reflective thinking, and referred to reading books, and discussions with group mates, as elements of learning. For this study, it is also important to examine how students reflect on the learner role and what kind of teaching approaches enforced their learning.

Student-centered learning not only concentrates on students, but on faculty members' role as facilitator as well. Faculty members are aware of the methods to use to facilitate student learning in related topics. However, the learning process is reciprocal, which means that students also need to strive for knowledge and actively take part in their learning. They need to spend additional hours researching materials and exploring the issue deeper. A study conducted by Carpenter & Tait (2001) at Queensland University of Technology (Australia), highlighted the need for student involvement in learning. This may become an issue in this study mainly because students were used to following teacher-centered standards of learning. In this mode, their role is to answer questions rather than question themselves regarding the concepts of learning.

Although students' reciprocity is a necessary part of the learning process, a positive learning environment fostered by faculty members is significant too. This means students need to be able to express their thoughts and ideas, build their own conceptual understanding, argue, and accept constructive critique towards their own stance. All of these require a respectful and supportive environment that can be nurtured by qualified faculty members. Umbach & Wawrzynski (2005), in the USA, analyzed 22,033 freshman and 20,226 senior students' responses from the National Survey of Student Engagement (NSSE), which emphasized that faculty members are vital in creating a positive learning environment.

The faculty's role is also important in bringing about change at an institutional level. They are very often practice changes and, at their level, they can provide feedback regarding implemented changes. Therefore, in order to increase their academic integrity, it is imperative to consider their views. Their opinion might even improve existing systems. A study conducted by Moscal, Stein, & Golding (2015) in New Zealand, found that survey structures on course evaluations were modified due to faculty members' requests to obtain more accurate responses. At the university where this study took place, students also completed a course evaluation survey annually; unfortunately, faculty members lacked interest in the results. However, the results of this study might interest other faculty members, because the study contains students' insights, and encourage them to discuss the results of the survey.

As student-centered learning has been practiced around the world, there should be a common and shared understanding of this concept. It seems that active methods of learning that encourage student-centered learning, can be interpreted differently by practitioners. For instance, research conducted in Korea by Kang, Choi, & Chang (2007), suggests that student-centered learning has been embedded under the constructivist approach. These scholars examined 385 Korean and international journal articles published between 1990 and 2006, and have indicated that there was a lack of theoretical discussion regarding the constructivist approach in Korean journals, in

contrast to international practices. In contrast, at a Turkish Institute, faculty members hesitated to exercise student-centered learning because of cultural incommensurability. This issue raised by Yilmaz (2009), stated that student-centered learning relies on the readiness of students to become independent learners, which is, however, unfamiliar to their learning culture. Issues related to cultural readiness and the rush to implement the practical aspect might exist in the Kazakhstani context as well.

A review of the literature shows how the student-centered approach has been cultivated in different parts of the world. The focus flits from students to faculty, from constructivist approach to cultural heritages. These experiences suggest that the concept of student-centered learning is still developing and adapting. The results of this study indicate how student-centered learning is being employed in the Kazakhstani context. The study aims to explore undergraduate medical students' experiences of transitioning from teacher-centered to student-centered learning. The remaining sections discuss methodology, data collection processes and research results. In the conclusion, findings of the study have been discussed in relation to existing knowledge.

## **Methodology**

This is qualitative research. It aims to examine medical students' learning experiences and their perceptions of the Philosophy course in Kazakhstan; which has previously been under researched (Creswell, 2012). The study employed qualitative methods such as, observation, document analysis, a survey with open-ended questions, and focus group discussions with students. In practical classes, students worked in small groups creating mind maps, writing reflection papers, presenting topics, and analyzing articles. The purpose of each task during practical classes was to provide a space for students to explore the topics on their own. Therefore, this study examines how students perceived their new role of learner wherein they are at the center of the learning process.

## **Data Collection and Participants**

The philosophy course was taught over a four-month period (February to May, 2017). A total of 63 out of 65 students took part in the study - one student was absent, whereas the other was expelled from the university. Twenty-three students participated in focus group discussions. The ages of the respondents ranged from 18 to 25 years of age; comprising 41% of 19 year olds, and 28% of 20 years old. With regards to gender, 73% of the study was male, and 27% female.. With 83% of international students from India and 17% local students that were provided with English language instructions. Data accumulation was undertaken at the end of the semester during the last few practical classes.

Regarding IRB (Institutional Review Board), here at KSMU there is an ethics committee entitled 'Bioethics Committee' (see <http://www.kgmu.kz/ru/contents/view/356>). Prior to launching any research, every researcher, faculty member and student has to submit his or her application for approval. This committee reviews research projects related to medicine rather than education; and therefore, because this study was aimed at course evaluation, there was no need to submit an application. Nevertheless, I have followed the ethics of research and at the beginning of my research explained the purpose of the survey to the students. The survey contained 14 open-ended ques-

tions; three of which were related to students' age, course dates, and tuition. The rest of the 11 questions aimed to explore students' learning experiences. Each student that participated in focus group discussion received an informed consent form. Prior to joining a focus group discussion, students were informed about its risks. While interpreting the data, students' names were coded to ensure their anonymity. Data have been analyzed in MS Excel, where the responses of all the students have been coded and merged into categories.

## Research Results

According to research results, student-learning experiences are categorized into two domains. The *first domain* is 'challenges' and the *second domain* is 'perceptions.' Each category was integrated with daily class observations, and extracts from focus group discussions.

### First category: 'very challenging, despite this fact it is good'

In order to gain a broader perspective of the issue, survey questions were triangulated with results of focus group discussions and daily observations of practical classes. Analysis of the survey questions identified **four major categories of challenges** in students learning, which were:

- 1) finding the main idea of the article
- 2) providing their own views and ideas
- 3) working in groups
- 4) border control and manifestation of SIWT (Student Individual Work with Teacher)

*The first challenge* was "finding the main idea of the article." According to my first week's experience of practical classes, students prepared by reading small parts of the text from the internet - some even read those small sections during class. I decided to use journal articles instead of text. The plan was to read two articles per class; unfortunately, I realized that the number of students, who were prepared, had decreased. Instead of grading them zero, I provided extra time for students to read the articles in class. Moreover, in order to keep them focused and in order to research particular information, I gave them eight questions related to the articles. During class, it seemed to me that everybody undertook the task with enthusiasm; however, the survey results suggest that 24% of the 63 students had difficulty in finding the main idea of the article. Here is one of the quotes that pointed out this:

*Many articles, I did not get main ideas about the topic. It was challenging for me (Student\_2, Male\_19).*

This quote could be interpreted as either a lack of experience reading articles in English, or in having insufficient time to find the answers. This issue was raised by participants of focus group discussions as well. In contrast to reading texts from internet sources, where they can understand small sections or subsections, reading articles requires following a main point throughout the paper. In this regard, it is difficult to identify the main concept from reading a couple of sentences, unless clearly indicated. One of the participants of the focus group discussion explained the issue in this way:

*Regarding articles, they are long. Sometimes I force myself to read all 11 pages without understanding. Nevertheless, I have spent my time reading it. I have to understand something. I have to force myself to understand it (Student\_4, Female, Focus Group\_1).*

This is related to philosophy, where concepts can be difficult to understand in the first instance. This issue signals the challenge of transitioning to student-centered learning. The respondent tried to force themselves to understand the text; whereas, understanding comes when one reads with holistic vision to build a conceptual understanding. In order to enhance the students' awareness of their own learning, at the end of each practical class, local students were provided with a reflective paper where they had to identify what they had learned so far, and explain how these concepts were related to previous class topics. As students were used to reproducing what was said in the text without analyzing the learned information, it was challenging to formulate their own opinion.

**The second challenge** was "expressing own thoughts." Twenty-one per cent of students mentioned difficulties in expressing their ideas. Some of them were afraid to speak because their ideas were similar to others; meanwhile, others were afraid to express their ideas because other students did not listen to them. In particular, when they were asked to provide precise answers, they tried to read what was written in the text rather than synthesize learned materials. From the observer's point of view, it seemed that they were not taking the task seriously; however, in reality it was pointed out that:

*The most challenging part in Philosophy is to express our own thoughts (Student\_1, Male\_19)*

Despite this fact, some students identified positive implications of this practice during focus group discussions. It seems that this challenge emerged due to a lack of experience during previous stages of learning. Although students faced challenges, they grew within this process - as pointed out by this respondent:

*Second point, is very good group discussion. I will not mention their name, but at the beginning of the semester, they were afraid of speaking. I know of one teacher who sometimes let us do such a thing, now they are capable of speaking because the first of study I saw they were very afraid of speaking when they spoke, they knew but were afraid to talk in public. However, now their condition is better, maybe because you involve us in such group discussion, and we are able to speak (International Student\_3, Female, Focus Group\_2).*

To some extent, all of the students found it challenging when discussing homework. Whenever they were asked to explain, they struggled because they did not understand what they were saying - this is one of the constraints of rote learning. Students were merged into groups and each member was required to participate in the presentation. As a result, most of the silent students became active, regardless of their previous experience. Nevertheless, this also contained a problem that instigated the next challenge.

**The third challenge** was “working in groups.” Another 21% of students mentioned that they had difficulty interacting with others during group work - students were comfortable working with students that they communicated with daily. In addition, during group discussions, they remained in the same position and divided responsibilities according to abilities. Therefore, they were divided via different methods into groups of three, four, or five people respective to the task. I knew that this was going to be a big challenge for them, as the following quote describes:

*Challenging part was dealing with group mates with whom we never communicated, working with them in groups, and answering questions (Student\_27, Female\_20).*

However, there emerged another issue, which I observed and tried to resolve within each class. Focus group discussions revealed this challenge of group work as well:

*Group discussion is also difficult because not all of them have knowledge of philosophy, I do not have to think for them. Therefore, if we are working in a group, each member should participate in the group discussion. Therefore, if only one or two students participate, the other students are a burden on the shoulders of these two students. How can they manage the whole group discussion? (Student\_1, Male, Focus Group\_2).*

Observation of practical classes noted that some students were less engaged when compared to other students. Students were advised of the significance of contributing, and therefore, sometimes pretended that they were researching and helping. Nevertheless, this did not mean that they received the same grade as their peers. During the assessment, this fact was taken into account in order to motivate students in the next class. Students indicated this challenge because the time to complete each task was limited.

**The fourth challenge** was “Border Control/SIWT (Students Individual Work with Teacher).” This challenge emerged because students received different additional tasks for SIWT. When they were asked to research material, it was observed that one or two students did the research for everyone. The other students do not want to elaborate and create something of their own. It is worth mentioning here, that local students took tasks more seriously than international students, because they receive state scholarship; whereas, international students study on a payment basis. In other words, local students might lose their scholarship if their grades deteriorate; whereas, students’ registered on a payment basis, are only required to complete the course. One of the tasks that took two weeks to submit from international students was finding an article from a credible source. This appeared in a survey where 8% of respondents have mentioned it. It is simply explained by this respondent:

*To prepare work in the library for the first time was challenging (Student\_14, Male\_20).*

In contrast to the survey, focus group participants identified the benefits of this task. They acknowledged the significance of being able to identify credible sources and use this skill for further learning. This is an extract from a focus group discussion:

*You also taught us to get credible data in the library, which other teachers do not teach us, they gave us only notes, books, that you should study this, they do not teach us how you can get other knowledge from other sources. Like you did, you gave us SRSP [SIWT] task to go to the library, how to talk to the librarian, and ask how to get data, credible data for philosophy, to go to different sites on Google, on kgmu [KSMU] sites, and this is really helpful for us in the future because other teachers do not give us these sites (Student\_1, Female, Focus Group\_2).*

Border control is counted as intermediate control in order to measure students' knowledge. Here students have to revise all of the topics that were discussed during practical classes. For students it is easier to learn specific points than understand holistically. Consequently, they lacked conceptual learning. They rely on someone who will explain and build a comprehensive map for them. This caused a constraint when nurturing student-centered learning. Therefore, it was identified as a challenge to remember all of the required information, as this quote suggests:

*Border control because I have to prepare all topics and some find difficult to explain (Student\_34, Male\_19).*

To sum up this section, new methods of learning stemmed from a lot of challenges, although students emphasized their beneficial implications as well. These challenges were mentioned because they were unexpected, and consequently, students were unprepared for these activities. Their previous experiences were based on reproducing reading material without comprehension or being able to form their own concepts. In contrast, the new mode of teaching requires facilitating students' independent learning. Therefore, the role of students has adapted from consuming materials, to creating, building, and elaborating on their own concepts. The following section analyzes their perceptions of their learning experiences.

### **Second category: pros and cons of the subject matter**

The second category 'perceptions' is divided into two categories; the *pros*, those who had positive experiences from active methods of learning, and the *cons*, those who described their experience negatively. The previous section underlined several challenges to student learning. This section looks at these issues from another angle. It also provides student perceptions of active learning methods. The activities were organized to provide a space for student-centered learning when working in teams, preparing charts, and topic presentations. This required the contribution of each member in order to finish the task on time. Most of the students (90.5%) remained satisfied with activities in practical classes and thought that they gained a lot from this type of learning. It seems that such activities are limited in other important medical subjects. In other words, elements of previous teacher-centered learning continues to dominate. Here is one of the quotes that reflects this point:

*Usually our system says that we just come to class and retell the homework. If all other classes were as interactive as Philosophy class, we would have wonderful doctors in the future (Student\_57, Male\_19)*

This quote shows that students lacked the space and skills to express their opinions, to feel themselves at the center of learning, and to create and interact with each other.

Despite this, being highlighted as a challenge in the previous section, students did learn to express their own opinions. For instance, this respondent emphasized their ability to express their point of view regarding learning:

*Philosophy is the only subject that was undertaken in a different way. I really liked it and this method is more preferable to me. For SIW [student individual work] and SIWT [student individual work with teacher] teacher asks our own opinion, I learned how to summarize the information and add my view (Student\_60, Female\_19).*

Moreover, working in groups, helping each other, nurturing a sense of teamwork, and the participation of each member during presentations, motivated students to support each other. They began to listen to, and learn from, their group mates, as was pointed out here:

*In Philosophy class we discuss in groups, all students have new ideas, and they speak freely in front of the teacher and every student. However, other classes do not have this opportunity (Student\_5, Male\_19)*

Student-centered learning requires the intervention of faculty members (Wohlfarth, Sheras, Bennett, Simon, Pimentel & Gasbel, 2008). In order to start a dialogue with students, teachers asked questions to initiate further discussion among students. This is how they perceived this activity:

*Actually, Philosophy classes went on a higher level. Teacher was interested in our understanding of topics and tried to explain some things, which we did not understand while other teachers are just coming to lesson and start to ask the topic (Student\_54, Female\_18)*

In focus group discussions, students mentioned that activities used during practical classes involved all students. This seems important for them, as this respondent says:

*The point, which I liked the most, is you take students and make them participate in class. This is what you gave us, very important. ... (Student\_3, Female, Focus Group\_2)*

Although the majority of students liked the activities, 9.5% of students had a different opinion regarding Philosophy classes. I noticed this indifference during class and I thought that students might have needed more encouragement and motivation. However, there was a much deeper reason, as this respondent pointed out:

*It is good, but it is not important as other subjects just like Anatomy (Student\_39, Male\_19)*

Some students do not perceive philosophy as a medical subject; therefore, they see no need to learn it. Upon raising this topic in focus group, discussions here was a big debate about it. However, this is how one of the students concluded the point and the rest of the students remained silent at the end of the discussion:

*Generally, medical students wonder why we study philosophy. It is not, I also think that it is not useful in our fuller life in future, but this remains in our GK, general*

*knowledge. If we do not have general knowledge, we are unable to study society. So, learning of Philosophy, History of Kazakhstan, like local subjects, why study this subject is to get general knowledge. After that, we know about different cultures, like Islamic culture, also about Chinese culture, Greek philosophy, or Kazakh philosophy. In philosophy, we did not know about philosophers, but all are remains as general knowledge (Student\_6, Male, Focus Group\_3)*

Overall, students were satisfied with the new methods of learning. Despite challenges, student's transitioning experience to self-regulated learning identified several important skills. In particular, they have learned to express their point of view, to listen to their peers and learn from them, to participate in team work and nurture team spirit, to summarize information, and finally, to present learned information and share it in front of the public. However, some students still question why they need Philosophy in medical school. A lesson learned from this section is that before Philosophy course' students might need an explanation or introduction about the role philosophy plays in their learning.

## **Conclusion**

The aim of employing active methods of learning is not about mastering skills to mobilize your students, rather, to nurture students' accountability for their own learning and motivation, to enhance their capacity to build their own learning trajectory, and to be able to identify their own strengths and weaknesses and improve upon them through life-long learning processes. The purpose of course evaluations aimed at identifying these skills in students is consistent with research conducted by Golding & Adam (2014) that underlined the importance of student learning. The results of this study show that medical students at a Kazakhstani university still need the support of faculty members to understand their philosophy curriculum. This point supports the study conducted by Yilmaz (2009) which highlighted the challenges of cultural incommensurability with the implementation of student-centered learning. In addition, this study supports research undertaken by Umbach & Wawrzynski (2005) and Moscal, Stein, & Golding (2015) that emphasized the significance of the contribution of faculty members in creating a positive learning environment and improving existing systems. Individuals are different, and due to that, their learning practices should be monitored yearly. Finally, this study provides evidence and enhances knowledge by providing fresh perspectives of a group of undergraduate medical students throughout their transition to student-centered learning.

This study was limited as only 8% of the 772 students studying the second course of General Medicine, were sampled, and only 25% of the 253 students who also studied in English. However, based on categories that emerged from this study, new survey questions can be developed in order to gain an understanding of the undergraduate student learning experience.

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***Fostering Autonomy through Meaningful Homework in Foreign Language Education***

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**Abstract**

There is an important dichotomy between teachers' and students' expectations regarding homework in university. Teachers prioritise what they feel students need to become successful adults, while students are divided between learning and enjoying their life as young adults. In foreign language contexts, contact with the target language is limited outside of class, so homework can help fill that gap. There is a need to re-think the role of homework for university students, not only to improve learning in general, but to foster autonomy motivated by pleasure of learning and interest. Teachers must provide students with opportunities to develop individual interests and learning strategies through semi-controlled homework. This research will present different ways of rendering homework relevant by connecting learning to students' lives and by encouraging autonomous behaviours. Also, it finds out that what students learn in content classes taught in their first language should be connected to their second language classes. The students' perspectives will be analysed through interviews, and ways of stimulating learning autonomy outside of the classroom such as research projects, extra-curricular activities, etc. will be presented.

Keywords: homework, projects, motivation, autonomy

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## Introduction

Teachers everywhere have to face students who are not motivated to learn. Children would rather enjoy their youth than study, while teachers do their best to instruct skills and knowledge that these future adults will need to be successful. A dichotomy exists between students' and teachers' expectation of what school should be, and this dichotomy is alive and well at the university level in Japan. Students want to enjoy their social life as young adults before they enter the demanding workforce, so they prioritize part-time work, club activities, and making friends over studying. On the other hand, many teachers, including foreign teachers who have a different experience of what constitutes university life, expect students to be more serious in their studies. Teachers often complain that students do not do homework, or that they do it overnight a few hours before it is due, or that they copy from classmates. Consequently, the quality is poor, and it does not lead to any intake.

From the students' point of view, however, homework might appear unmotivating or a waste of time. In the Japanese education system, passing an entrance exam is usually the most strenuous step, but completing courses and graduating are not expected to be so laborious. In addition, the mentality of Japan Inc. has traditionally been to provide full training to new employees and show them everything they need to know to do their work. Based on these, what pupils learn at school does not seem to matter so much in the end. Of course it does, but it is difficult to convince teenagers and young adults about the importance of being dedicated to their studies. Moreover, there is a wrong assumption that learning happens at school and only at school, not through personal interests (hobbies) or after graduation throughout one's life. The goal of education seems to be preparing students to pass tests; very little effort is made to connect what is learned in class with real life.

With this in mind, this paper will attempt to answer these questions:

1. What kind of homework will make students want to pursue their learning?
  - a. What is meaningful homework in the eyes of students?
2. What kind of homework will enhance their learning?

## Context

In countries where English is widely spoken, people who learn English as a second language have daily opportunities to hear and practice the target language. In these countries, what is learned in class and life outside of the classroom are directly connected, and learners are motivated to learn in order to find employment, make friends, etc. However, in foreign language contexts, there is virtually no contact with the target language outside of class. Language education has then little to no choice but to rely on rote memorization, which cannot possibly be stimulating for students. Murray (2008) demonstrated that learners feel motivated if there is a connection between what they learn and their life.

In Japan, English cultural products such as music, magazines, etc. are not common considering that the entire nation learns English at school. Japan has a complete local artistic scene, and while Western (or American) cultures certainly influence Japanese artists, students generally have no direct contact with foreign culture. Their needs of

pop culture are satisfied with domestic products. In fact, even university English majors admitted having little to no interest in music sung in English (Marceau, 2017, p.194). Another factor in this problematic equation is that foreigners on Japanese television are usually dubbed in Japanese, denying viewers any exposure to foreign languages. While learning English is compulsory for all Japanese, it is almost censored off the air. This is not the case in many other countries, such as in Europe, says Kuure (2011, p.36). Japanese learners are therefore not in contact with much English, if any at all.

Moreover, the katakana alphabet allows Japanese speakers to transcribe foreign words into Japanese. This japanisation of foreign names, places, etc. eliminates any necessity to read the English language or alphabet. According to professor Paula Kalaja from the University of Jyväskylä, Finland, children need “cereal box English”, referring to the multilingual food packaging in many countries (including the European Union, Canada, and many more) that exposes people to easily accessible foreign languages (Kalaja *et al.*, 2011). Myself, as a child, I learned a great deal of English vocabulary and identified many grammatical similarities and differences by reading both sides of the cereal box, the milk carton, etc. morning after morning while eating breakfast.

In 2008, Benesse, a major publisher of educational materials in Japan, released the results of a survey conducted both in Japan ( $n = 3700$ ) and South Korea ( $n = 4019$ ) about the usage of English at home among high school students (see figure 1). The results revealed that 76,1% of South Korean high schoolers read English books at home, while only 27,4% of Japanese high school students did the same, a difference of 48.7%. Another item, using Internet in English, had 79.4% of South Koreans answered positively, but only 20.9% for Japanese, this time a difference of 58.5% (Benesse, 2008)! Comparing these results with the average TOEIC scores between the years 2001 and 2011 in both countries (see figure 2), it is noticeable that while South Korea and Japan had similar results in 2001, 562 for Japan vs. 566 for South Korea, after ten years the average score for South Koreans jumped to 633, while Japan reached 574, only 12 points higher than a decade before. (NE Holdings, n.d.). After ten years, the gap between the two countries reached 59 points. While proving the direct causation between using English at home and the increase in TOEIC scores is beyond the scope of this paper, it can be assumed that the considerable difference in the amount of time spent using English probably helped.

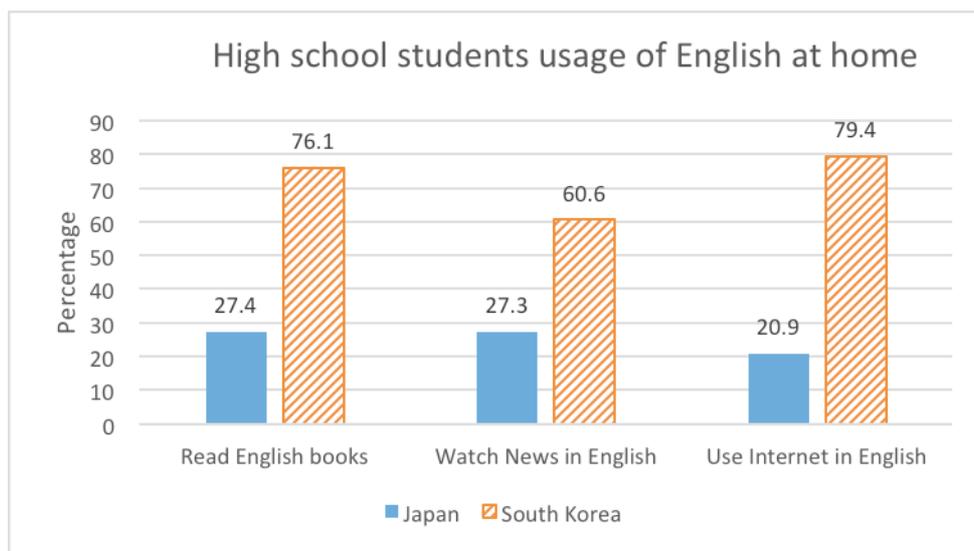


Figure 1.

Source: [http://berd.benesse.jp/berd/center/open/syo/view21/2008/06/s09view\\_01.html](http://berd.benesse.jp/berd/center/open/syo/view21/2008/06/s09view_01.html)

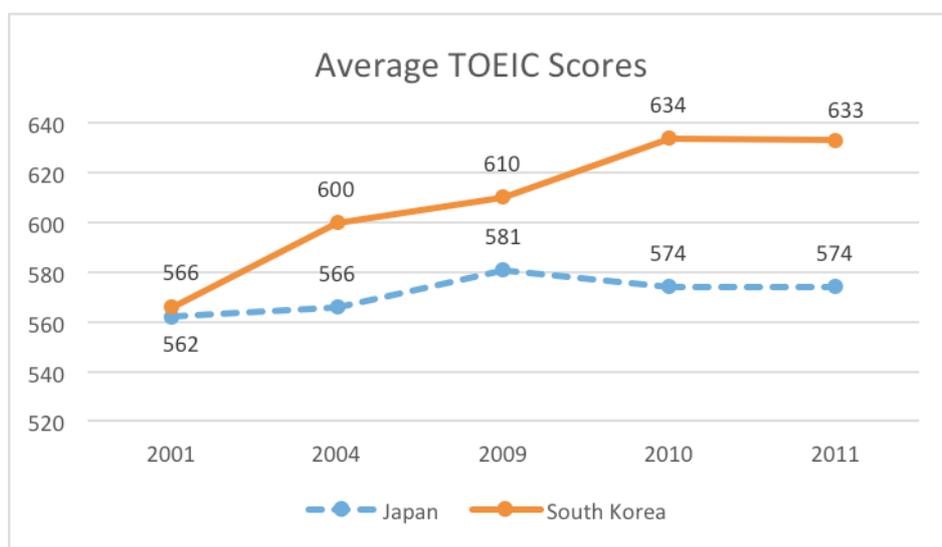


Figure 2.

Source: <http://www.ne-holdings.com/kobetsu/?p=2796>

## What the Research Says

### Motivation

Motivation can be challenging for teachers. While building motivating lessons are the teacher’s responsibility, teachers wish students would adopt a more active and engaged attitude and find intrinsic reasons to be motivated. There are various ways to make a course more stimulating for students, and in the end, teachers would also benefit from a positive and stimulating environment and become more motivated themselves.

A dominant figure in motivation, Zoltán Dörnyei, has written numerous books and articles on the subject. While it is impossible to summarize Dörnyei’s prolific career here, this paper will focus on a few main points. In 2001, in *Motivational Strategies in*

*the Language Classroom*, Dörnyei identified four steps in motivation: (1) creating the basic motivational condition, (2) generating initial motivation, (3) maintaining and promoting motivation, and (4) encouraging positive retrospective self-evaluation (Dörnyei, 2001). If motivation is ultimately a question of internal factors, it is clear here that the teacher has a leading role such as creating and maintaining a motivating environment for students. In a country like Japan, where attending university is common (75,9% of students who graduate high school enroll into an institution of higher education (MEXT, 2005, p.10)), some students will reveal that they attend university because their parents pressured them to enroll, or because a university degree will improve their chances of finding employment in the future, no matter which field. It should therefore not be a surprise that some lack intrinsic motivation.

A few years later, in 2015, Dörnyei refined his approach and explained seeing successful motivation as *Directed Motivational Currents* (DMC): focused, strong, and sustained. Dörnyei imagines a perpetual movement sustaining and regenerating the motivation. The initial four-step model was refined as: (1) to have a goal or vision orientedness (or directional), (2) a triggering factor and launch, (3) a facilitative structure that includes behavioural routines and progress checks, and finally (4) a positive emotionality (Dörnyei, 2015). Interestingly, if the model appears to have been developed for language learning, it seems applicable to any learning contexts. Also interesting, positivity is a factor that is repeated in both models above. In addition to the two models mentioned above, in collaboration with Ema Ushioda, Dörnyei put forward that motivation is also greatly influenced by social interactions (teachers, peers, and second-language speaking communities) and learning environment (attitudes towards second language learning within the first-language speaking community) (Dörnyei & Ushioda, 2011). Being surrounded by motivated people is motivating, while the opposite is also true. Equally, living around people who demonstrate hostile attitudes towards a different cultural group will surely affect the motivation to learn the language of that group.

## Issues

While second language learning happens through using that language, it does not happen naturally in a foreign language context like Japan. Japanese students who have frequent interactions with speakers of the target language are the exception rather than the norm. In many cases, students' only use of the language will be with other Japanese students in class or with their teacher, usually with the possibility of having recourse to their first language. Therefore, what determines if a student successfully learns a foreign language or not can unfortunately be their socio-economical background; for example, if their family can afford evening classes in private language schools, a private tutor, participate in study abroad programs, etc. Since foreign languages are within most people's reach through the Internet, then teachers need to help students to develop interests and autonomy. Without any chance to validate the accuracy of their language (or lack thereof), students will develop a kind of dialect that mixes English with *wasei-eigo* (English-inspired Japanese expressions) and Japanese-like grammar. In fact, this phenomenon was observed in ESL classes in Quebec (a French-speaking province in Canada), where "hearing more second language spoken by their first language-speaking classmates, students come to produce a distinct accent, a version of the second language that is almost a dialect or a creole", says Graham Fraser, former Commissioner of Official Languages in Canada

(Fraser, 2006, p.192). In this age of technology, where virtually every student owns a smartphone, there is no excuse not to tap into that authentic source of information and foreign languages that the Internet constitutes.

## Communities

There is a shift happening among researchers, thinks Phil Benson, who no longer perceive second language acquisition as purely cognitive, but more of a participation in a community (2011, p.5). Garold Murray thinks that we should develop 'social learning spaces' (2001, p.133) where learners of any age can meet and learn with and from each other while maintaining individual goals, instead of isolating themselves. Gee (2005, p.214) agrees with Murray that the need is not to create a learning community, with a membership, but rather a learning *space* where people will interact. Too often learning groups are created but do not necessary lead to better learning or motivated learners since a common goal cannot be personalised, and decisions taken by the teacher or leader might not meet everybody's expectations. Palfreyman rather thinks that communities of learners who share similar goals or interests need to be created, because this way, the foreign language will not only become a hobby, but will be *necessary* (2011, p.26). Adult learners often fall into the first category described by Murray and Gee, while the reality described by Palfreyman resembles university classes, where goals might be a little more homogenous, such as passing the course, improving their TOEIC scores, etc.

With this in mind, it must be understood that the concept of learning in interaction is still relatively new for many, and goes against what students are used to (especially in Japan) and what is expected from them, even at the university level. Admittedly, most high-stakes tests such as entrance exams, TOEIC, final exams, etc. are individual tests. Team activities might build skills like fluency, problem-solving, negotiation of meaning, etc., but as long as decisive tests will require memorizing items and will assess receptive skills (reading and listening), it will be difficult to convince students (and conservative teachers) of the value of learning in interaction, especially if it is not assessed. Even if the necessity to communicate in English is understood, not all teachers are equipped to tackle this task due to large groups of students, syllabi based on vocabulary and grammar, and often, their own language-learning experience. However, with the Internet, access to information from around the world has exploded. We do not learn a language for an hypothetical future use; the present context is much of a *learn as you use* and *use as you learn* (Marsh, 2002, p.10). That means that if traditionally teachers provided most of the input, now learners have the possibility to learn individually through Internet, at home, on top of school experiences. "Students who learn languages only in the classroom tend to be limited, especially in their ability to use the language for spoken or written communication" (Benson, 2011, p.2). Teachers should therefore provide learning and reflecting opportunities for students to learn both individually and while interacting in a group.

An inspiring example is the education system in Finland, where students continuously scores among the highest in the world year after year (Williams-Grut, 2016). Since Finnish learn English as a foreign language as well, Japan could learn from their experience. At the Helsinki University Language Centre, the focus is on exchange programs, accreditation of out-of-classroom learning, and independent learning outside of the classroom (Pitkänen *et al.*, 2011). This implies that each student has his

or her own flexible study path and individual goals. Professors of The Language Center at Helsinki University of Technology now go as far as recommending a focus on dialogue and working life tasks instead of the traditional focus on correct language usage (Lappalainen, 2010). In addition, in Finnish universities, foreign language learning now includes semester projects, where second language teachers join student teams and play the role of linguistic experts, along with a teacher of the subject matter. Classroom language tasks are built in relation to the semester project, and students are motivated since the language activity is relevant for them (Kiviaho-Kallio, 2012, p.52).

### **Autonomy**

This paper has for goal to identify what kind of homework could trigger students' motivation, interest, and ultimately autonomy. However, there can be no real autonomy if it does not originate from the learner; imposing autonomy on a learner goes against the meaning of the word itself. In order to be called autonomy, according to Phil Benson, it would in principle require students to decide by themselves, to learn independently, and to take full responsibilities of their learning (Benson, 2011, p12). This rigorous definition of autonomy is more likely to be found among adult learners, since while students are in school the idea to become autonomous usually originates from the teacher, and might even meet resistance from students who perceive the teacher's job as transmitting knowledge about a subject matter (Benson, 2011, p12). Some scholars such as Hunter and Cooke prefer the term *agency* to autonomy, as agency is not only independence, but also interdependence and social engagement (2007, p.74). The learners see social relations as dynamic learning opportunities and resources.

If teachers wish to see students more engaged and willing to learn autonomously, it is their role to help students finding new ways of learning (and using) foreign languages outside of the classroom (Kalaja *et al.*, 2011, p.58). It is not realistic to expect students to find new paths of learning without any guidance. If students need a gentle push towards autonomy, teachers should not put them through a *sink or swim* situation, claiming that this is how we learn. Autonomy is a hopeful goal that is not obvious to many, so teachers should provide students with multiple opportunities to develop individual interests and learning strategies. According to Murray, successful autonomous learners often develop their own strategies over their learning careers (2008).

While the goal of education might logically be to prepare students to be successful after graduation and for the rest of their life, connections between school and real life are unfortunately scarce. In some foreign language education contexts, the goal of education seems to be preparing the students to pass a test rather than providing them with basic skills and knowledge to be refined throughout their life. The information is mostly memorized to pass tests, and then forgotten. There seems to be an assumption that learning happens strictly at school, too. "There are a variety of contexts for second language learning outside the world of school, and a great deal depends on the learners' perception of and willingness to exercise their power to act, or agency" (Kalaja *et al.*, 2011, p.55). This proves to be a problem among many Japanese learners, who adopt a passive attitude towards learning, waiting to be taught. "Effective learning requires teacher support but also, more fundamentally, active

learner involvement” reminds us Takala (2002, p.41). The classroom atmosphere will also become more positive and motivating if learners are involved. In Finland, Kalaja argues that many students miss learning opportunities present in informal contexts because they fail to notice them (2011, p.57). An unfortunately common example in Japan is foreign language students who admit only having spoken Japanese when traveling to neighbouring countries (Taiwan, South Korea, etc.) or not interacting with local people at all because that would require them to use English. Shyness and fear of making a mistake seem sadly stronger than the very purpose of their studies.

In the end, the ultimate goal, the “Holy Grail” in autonomy would be *self-directed naturalistic learning*, an expression coined by Phil Benson, “where learners invariably have an intention to learn the target language, and they do so by creating naturalistic learning situations for themselves” (Benson, 2001, p.77) motivated by pleasure of learning and individual interests. This implies that learners have personal learning goals beyond university graduation, and enough free time outside of work.

### Data Collection & Results

In order to understand the students’ point of view regarding homework, qualitative data (their thoughts and experiences) were collected through interviews. Wishing to generate answers that reflected both the individuals and the groups, the interviews took the form of a think-pair-share activity; students reflected individually, then brainstormed more answers in small groups, shared their ideas with the entire class, and wrote them on the board. Students had to answer the following questions:

1. What are examples of good homework? How did it help you?
2. What are examples of bad homework? Why do you dislike it?
3. Should homework be banned in university?

The questions were kept simple to ensure that linguistic difficulties would not be in the way of their reflection. Students were all second year foreign language majors, fifty-eight students in total. In addition to answering the questions pertaining to this research, an additional goal was to bring students to reflect on their expectations and behaviour in their studies. Here are some of their answers:

1. Examples of good homework:

*Project alone*

*Free study: we choose the topic*

*Sometimes translation because good content input*

*Choose homework that we need*

2. Examples of bad homework (parenthesis added):

*Long translation*

*Even if you understand you have to do long homework*

*Homework you don't know you are making mistakes (answer keys not provided)*

*More homework sent after class (by email)*

Additional comments made by students:

*“The teacher gives us homework 1 hour every 2 weeks. Very long.”*

*“Good homework is about my life”*

*“I don’t have time to study for French because of English homework.”*

*“We get many homework before TOEIC and can’t study.”*

## Discussion

Answers were quite consistent across the four groups interviewed, meaning there were all similar. After three or four answers were written on the board, students did not seem to want to extend any further, agreeing with each other. Also, it was easier for them to come up with negative examples than positive ones, and they had difficulties justifying their examples (the second part of question 1 and 2). The word “boring” was often uttered, even after I pressed them to explain the reason why they think homework is boring. Regarding banning homework in university (question 3), students could not come to a mutual agreement. The consensus was that banning homework was going too far, yet students could not agree on an acceptable compromise for the length or amount of homework. I understood that the students and I have different expectations when some complained that one hour of homework a week for a class was too much. I am guessing that this might depend on how useful or interesting the students perceive a course to be, although there is no certain way to be sure at the moment. Perhaps their social life and part-time work have priority over their studies.

Students’ answers show a demand for more freedom and autonomy. Students complained about being assigned time-consuming homework right before high-stakes tests like TOEIC or TOEFL, and not having time to study for courses related to their major because of excessively long homework in other courses. While the results point in the direction of wanting more autonomy, students seem to be at an impasse between passivity in class and being responsible for their learning. This means that a gradual approach is needed to guide the students.

## Solutions

In light of the motivation, the sense of community, and the autonomy necessary to achieve a durable momentum in learning, successful homework seems to require a connection between what is learned in class and the world outside of school. In *Language Curriculum Design*, Paul Nation mentions two practical suggestions to encourage students to become responsible in their studies: by asking them to discuss their learning goals with classmates (the conditions for successful learning, their own ways to reach their goals, etc.), and by asking the students to complete tasks that do not require teacher guidance (or just a little) so that they can see what they could accomplish autonomously (Cotterall, 1995, in Nation, 2010, p.207).

Additionally, there are many ways to use a foreign language at home, but Sundqvist (2011) argues that they are not all equal. For example, playing video games, surfing the Internet, and reading require learners to be active, productive, and rely on their language skills, whereas listening to music or watching television and movies enable the student to be passive or receptive. This is significant considering that listening to

music and watching television are the two most popular activities in Sundqvist's study (p.114). In the end, Sundqvist established that the amount of time that students spend using English outside of English lessons "correlated positively and significantly with both [the students'] level of oral proficiency and the size of their vocabulary" (2011, p.117). This seems to add weight to the comparative analysis of Japanese and South Korean high school students' TOEIC scores mentioned earlier.

### **Successful Experience**

The goal is to make homework appear meaningful for students and valuable language learning activities at the same time. A successful example, developed with a few colleagues, are short research projects that connect the classroom with students' life and can be used in any foreign language course. The initial goal was to provide students with a reason to use English. The research projects cover these objectives on top of fostering autonomy. Projects are less teacher-dictated because students are brought to take decisions such as choosing a topic, being responsible for researching the content, etc. The teacher becomes a member of the audience and assess the presentations discretely. In class, students give presentations to their classmates in small groups, multiple times (similar to a 4-3-2 activity in order to increase fluency and retention). In addition, students can create a visual support such as a poster, a postcard, a PowerPoint, a Prezi, etc. The audience must be given a task to complete since they can learn from listening to their classmates: taking notes, looking for specific information in the presentation, or summarising it. Lastly, a post-presentation linking activity can be added such as writing, ranking, discussion, etc. These projects are built following Dörnyei's concept of Directed Motivation Currents (2015): (1) a clearly defined target, (2) using content that is relevant to the students and offer an authentic learning experience. (3) The teacher offers regular checks and feedback, and finally, (4) students work in a positive atmosphere, support each other in small groups, and reports to classmates.

An example of research project that has been successful takes place during the unit on people with disabilities and the challenges that they face. I would like to give credits to my good friend Andy Tweed for the original idea and for developing the project together. Students' task was to choose and evaluate a building on campus or anywhere in town on its ease of access for people with different physical disabilities. Students used their smartphones or cameras to take pictures or videos, and took field notes on what they noticed. Next, students prepared a short presentation about their findings. Back in class, groups were rearranged so that each group consisted of a member who investigated a different building. Finally, the groups evaluated the buildings by ranking them in order of ease of access. Students then wrote a justification consisting of at least two sentences per building.

### **Extra-curricular activities**

Another opportunity for students to use foreign language outside of the classroom is during extra-curricular activities. International students should be encouraged to join club activities such as sport teams and art clubs together with local students. This would provide members with authentic opportunities to use foreign languages. Students would focus on communication rather than accuracy, and both local and

international students would enjoy and learn from the cultural and linguistic exchanges.

Additionally, there are several international centers in cities around Japan where different cultural activities or linguistic exchanges are organised. Garold Murray (2008) points out the beneficial role that self-access centers play in universities, where students can have support from an educator and access to different resources in order to pursue individual goals. Finally, Murray advocates online discussion groups such as *Moodle*, where students have a real purpose to use the language to communicate, on top of the work done in class (p.139).

## **Conclusion**

The goal of this paper was to find out what constitutes meaningful and motivating homework for both students and educators. In the eyes of students, motivating work is related to them. They want to see a connection between school and real life. Ideally, teachers of different disciplines and language teachers would cooperate to make a coordinated curriculum so students can make connections between what they learn in their first and second languages. Moreover, the language teacher should have a basic knowledge of the topics covered, and the subject teacher a basic command of the foreign language. From the perspective of the teacher, homework should be assessed; this would create an extrinsic motivating factor, which, while being artificial, would push unmotivated students (or students who might not care for a good grade) to complete their assignment, hopefully helping them learn.

However, it remains challenging to find real-life situations where students can use English in foreign language contexts like Japan. The lack of English speakers is a real problem for an entire nation who tries to learn a language purely for testing purposes. Spending years learning a language without using it makes it extremely difficult to motivate learners. On campus, universities should make efforts to integrate international students with local students and facilitate exchanges. Finally, teachers need to let students take their own decisions in order to increase autonomy. Controlling every detail of their education is the best way to keep students in a passive and immature state and limit their development towards becoming responsible adults. Educators should encourage students to be active learners, with the goal of becoming more independent, and ultimately autonomous. Autonomy and a mature sense of responsibility will not happen overnight, but need to be developed before students start their career.

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***Limited English Proficiency of Chiang Mai University Students as Evidence of English Language Education in Thailand***

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**Abstract**

This paper presents a review of recent research that investigates the problem and the practice of English language teaching and learning in Thailand. A review of these studies identifies four major causes that contribute to the failure of English language education in Thailand: national identity, teacher development, education system, and exposure opportunities. The focus of the study is the development of English language proficiency among students at Chiang Mai University. Our finding indicates that students show no significant development during English acquisition while at Chiang Mai University. In order to facilitate marked English language improvement, adaptation of new instructional models for practical application in students' lives is recommended.

Keywords: ESL, English Language Education, Thailand, Learning Environment

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## Introduction

Thailand is a country of linguistic diversity with 86 languages. There are four major regional languages—Northern Thai, Northeastern Thai, Southern Thai, and Central Thai—and numerous marginal regional languages (Smalley, 1994). Standard Thai, a version of Central Thai, is the national and official language spoken by educated speakers in every part of Thailand; it is used in news broadcasts on radio and television, taught in schools, and described in grammar books and dictionaries (Tingsabadh & Abramson, 1993).

English was introduced to Thailand by missionaries during the reign of King Rama III:1824- 1851 (Darasawang, 2007) exclusively for the court (Baker, 2012; Bennui & Hashim, 2014) with further impetus during the reign of King Rama IV:1651-1861 (Sukamolson, 1998). The importance of teaching English to the public was not commonly recognized until the reign of King Rama V:1868-1910 (Bennui & Hashim, 2014), whose vision of the modernization and progress of the country was through greater English competence of his subjects (Darasawang, 2007).

For over a century, Thailand has gone through several education reforms in order to meet its changing social, political, and economic context. The education reforms have brought about changes in the teaching and learning of English in Thailand accordingly. Throughout this process of English education development, various principles and theories of teaching discovered in Western countries have been adopted to improve the learning process. In 1921, the first National Compulsory Education Act made the English language a compulsory subject for students beyond grade 4. In 1960, there were attempts to replace the traditional methods used in Thai education, rote-memorization and grammar-translation, with the Audio-lingual Method (Wongsothorn, Hiranburana, & Chinnawongs, 2002). A major change was seen in the 2002 National Education Curriculum, which prioritized English education based on four orientations: Communication, Culture, Connection, and Community (Methitham & Chamcharatsri, 2011). The orientations of this curriculum signified a shift from teaching English as an academic subject of study to English as a medium of communication (Wongsothorn, Hiranburana, & Chinnawongs, 2002), as well as a shift from traditional teacher-centered to more learner-centered methods (Baker, 2008). This latest trend of communicative instruction presents a strong challenge in that it marks a transition period between the old concept of teaching language for language's sake and teaching language for language use (Dhanasobhon, 2006).

The establishment of the ASEAN community in 2012 and the launch of the ASEAN Economic Community (AEC) in 2015 raised concerns about the level of English proficiency in Thailand as English is the working language of ASEAN. In order to prepare the country for the ASEAN community, the Ministry of Education launched a program called “English Speaking Year 2012” in order to encourage the use of English in piloted schools (Deerajviset, 2014; Marukatat, 2012). In the year 2014, the Education Ministry adopted the Common European Framework Reference for Languages (CEFR) to set the English language proficiency teaching and learning targets for teachers and students nationally (Prasongporn, 2016).

The increasing role of English in Thai society has set it apart from other foreign languages. At present, English is a mandatory part of the 12-year basic education in

Thailand and is one of the five key subjects tested in the National University Entrance Examination (Bupphanhasamai, 2012). The functions of English in Thailand, however, are mainly for educational and economic purposes. Domains in which English is widely used in Thailand include international business transactions, tourism, the Internet, global advertising, and scientific and technology transfer (Baker, 2012; Foley, 2005).

### **Assessment of Current Status of English Education in Thailand**

Despite 10 years of English instruction, Thai students still have problems studying and using English effectively. In the year 2010, the Test of English as a Foreign Language (TOEFL) ranked Thailand 116th out of 163 countries while the average test score in the 2010 – 2011 O-NET (Ordinary National Educational Test) for English subjects ranged between 20% and 30% (Kaewmala, 2012). According to the 2013 English First (EF), English Proficiency Index (EPI)—an international education company specializing in language training, educational travel, academic-degree programs and cultural exchanges—Thailand ranked 55th out of 60 countries rated, falling into the “Very Low Proficiency” category. In 2015, Thailand fell to 62nd out of 70 nations in English proficiency and was ranked the third-worst country in Asia on Education First’s annual English Proficiency Index. The EF report remarked that Thailand’s English proficiency remains low despite a greater percentage of its budget (31.3%) on education than any of the 70 countries it surveyed (Fredrickson, 2012).

### **Research Evidence**

Four major causes have been proposed as contributing factors to the failure of English education in Thailand

#### **1. National Identity and Language Policy**

Hice (2015) investigated the English language education of two members of the ASEAN nations, Singapore and Thailand, on the ground of varying proficiency rates of their populations and the national realities of the two nations. Singapore, with the second highest English proficiency rating of the ASEAN Nations, was under the classification of “High Proficiency” whereas Thailand was in the “Very Low Proficiency” category. In terms of identity, Hice maintained that in Thailand English is considered a useful foreign language with Thai being designated as the national language for the sole reason of national security and racial integration. In Singapore, though, English serves as a unifying language for cultural harmony and understanding. A study by Kaur, Young and Kirkpatrick (2013) supported Hice’s findings (2015) that the nationality concept of “Thainess” interferes with the progress of English language in the country’s modernized education system and that English skills could be improved with English being promoted as a second official language rather than a foreign language.

Hayes’s findings (2016), however, have softened the stance by revealing that Thai students have a positive attitude towards learning English as a tool for personal economic advancement, with little indication of negative impact on the status or use of Thai. In fact, Standard Thai is not the native language for most people in Thailand; it is a “learned” language in school. It has a unique status serving as a strong symbol

of identification for the Thai nation “next to the King and along with the Buddhist religion” (Smalley, 1994, p. 14). In this regard, the desire and effort to master English, a foreign language important for the country’s economic and technological development, bears little relevance to the threat of not maintaining Standard Thai for English learners in Thailand.

## **2. Teacher Development**

According to Geringer (2003), the most important factor in student learning progress is qualified teachers who can create the best environment for learning. While it is not necessary for English teachers who are not native speakers of English to have a native-like command of a language in order to teach it well (Canagarajah, 1999), there is a threshold language proficiency level required of a language teacher to carry out different aspects of a lesson in terms of providing good language models, maintaining use of the target language in the classroom, giving correct feedback on learner language, and providing input at an appropriate level of difficulty (Richards J. , 2011). Most Thai English teachers do not speak English well enough or have sufficient English knowledge and instruction skills to guide students effectively in their learning (Biyaem, 1997; Thonginkam, 2003; Kaewmala , 2012). In fact, 65% of primary school teachers who were teaching English had not taken English as their major of their studies, and only around 70% of secondary school English teachers graduated with a bachelor’s degree in English (Noom-Ura, 2013). A survey conducted in 2006 by the University of Cambridge also revealed that 60% of Thai teachers did not have sufficient knowledge for teaching English and only 3% had reasonable fluency (Kaewmala , 2012).

## **3. Method of Instruction and Educational System**

Motivation has long been identified as one of the main factors affecting English language learning (Gardner, 1985). The teaching and learning practices in English-language classes in Thai schools have been criticized as failing to sustain motivation, enthusiasm and commitment to succeed in a learning environment. As a whole, the Thai education system is packed with subjects to memorize and does not allow time for Thai students to think for themselves (Fuller, 2013) or to question anything in class (Mitchell, 2013). For language learning, the teaching styles in Thai classrooms emphasize memorization of rules rather than communication (Thonginkam, 2003). Furthermore, Thai classrooms often use teacher-centered classroom activities, spoon-feeding, and teaching grammar and translation with Thai as the medium of instruction (Noom-Ura, 2013). While *Yes*, *No*, and *OK* are the three most important words for communication, the most typical sentence Thai school pupils learn by heart is: *Good morning, teacher! How are you? I’m fine, thank you, and you?* (Kaewmala , 2012).

## **4. English Language Exposure**

After 8 to 9 years of English lessons, most Thai students are still unable to use English “to do things” (Thonginkam, 2003) due to lack of opportunities to “speak in daily life” (Fredrickson, 2012). Only a small proportion of Thai high school graduates and even university graduates can competently conduct a conversation with a foreigner in English (Kaewmala , 2012) when, in fact, in today’s globalized world, learners have more opportunities to maintain and extend their proficiency in English

through technological innovations than are generally available in the classroom (Richards J. C., 2005). While exposure to out-of-class experiences can provide a pleasurable and positive language use experience, Thai students learning English are deprived of such opportunities. When the method of teaching is predominantly teacher-centered and exam oriented with Thai being the means of explanation, Thai students are given limited exposure to real life learning and also fewer opportunities to involve themselves in hands-on experiences (Pennington, 1999).

Indeed, different approaches to promote extended exposure to English have been introduced. For instance, the Ministry of Education implemented a policy requiring all schools nationwide to stimulate their students and teachers to speak English at least one day a week (Fredrickson, 2012). Also, schools have hired teachers who are native speakers of English and set up international schools and programs (Thonginkam, 2003), as well as introduced innovations such as task-based learning and learner-centeredness in English classrooms (Darasawang & Reinders, 2016). As proposed by Kaur, Young and Kirkpatrick (2013), one of the reasons why the English skills of Thai students are not improving at a sufficient rate despite a wide range of national policies and education reforms is policy implementation. One weakness lies in the centralized education system in which there is a gap between academia and the general public in regards to education reform; that is, there is little cohesion between those who make plans and those who implement the plans. Notably, local teachers have no direct involvement at all. Moreover, linguistic empowerment of local teachers in teaching English would be beneficial for Thai students because it would be easier for students to identify and emulate the skills of teachers of their own nationality and cultural disposition (Nagi, 2012).

### **Chiang Mai University**

Chiang Mai University, the first institution of higher education in Northern Thailand, comprises 21 faculties offering undergraduate and graduate degree programs. To gain admission to the university, high school student applicants need to submit scores of the National Entrance examination, widely known the GAT (General Aptitude Test) and PAT (Professional Aptitude Test). For students in the Northern region, though, they may submit the Northern Quota Entrance Examination. The GAT assesses English skills, and the PAT assesses skills in the subject areas that students intend to study. Once admitted, all students are required to take a minimum of 12 credit hours of fundamental English.

According to Chiang Mai University's Registrar Office, the average score in English of the 5455 students admitted to Chiang Mai University in the academic year 2012 was less than half the 100-point total. Out of a mark of 100, the students' average English score was 30%<sup>1</sup>. In addition, the average score in English of the 4927 fourth-year students in the academic year 2015 was less than half the 100-point total. Out of a mark of 100, the students' average English score was still only 30%<sup>2</sup>. Accordingly, the English proficiency of students graduating from Chiang Mai University in 2016 shows no improvement after having fulfilled their requirement of 12 credit hours of English.

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<sup>1</sup> Chiang Mai University Registrar's Office (2012): [www.reg.cmu.ac.th](http://www.reg.cmu.ac.th)

<sup>2</sup> Chiang Mai University Information Technology Service Center (2015): <http://itsc.cmu.ac.th/>

## **Conclusion**

Given the supporting evidence that motivating Thai students to learn English should pose no threat to the notion of “Thainess” and the continuing issuance of varying policies by the Education Ministry for teacher development, it would be warranted to address the problem of limited English proficiency among Chiang Mai University students on issues relevant to learners, such as method of instruction and language exposure, to determine whether the adaptation of new instructional models is needed.

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## *Placement Test Analysis in a Japanese University*

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### **Abstract**

It was around 2009 that the so-called era of free college admissions began due to a shortage of college applicants. Along with this situation, the introduction of different types of admissions, such as Admission Office Examination (AO) and recommendation-based examinations, which may not require ordinary forms of written examination, raised the issue of widening ability gaps among new students. To cope with the situation, many universities implemented placement tests to place students according to their proficiency levels. Such strategies are believed to help students gain the needed support. At the same time, the placement tests can help instructors adjust the levels and contents of the classes accordingly. Like many other universities, the target university has implemented English and mathematics placement tests over the past ten years in response to lower academic proficiency and wider gaps among students. Recently a placement test for Japanese has been introduced since some students' were found to have limited general academic skills. The current study analyzes these three kinds of placement test results. The analysis involves numerical presentation, distributions, frequency, and correlations. The study found correlations between the three test results. Moreover, unique characteristics in placement test scores for different majors were revealed. It is believed that the results of the study can help review and improve current planning for support programs responding to continuously declining academic levels and widening gaps among students.

Keywords: placement test, students' proficiency level, admission styles

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## **Introduction**

A declining birthrate generally and a decrease in college age members of the population have created difficulties in gaining applicants for universities in Japan. To reach capacity levels, many universities have lowered their acceptance criteria and/or are now admitting applicants through varying admission methods. As a result, the selective functions of university entrance examinations have been claimed to be less effective. Given this situation, students' proficiency levels have become an object of scrutiny. Concerns have been raised regarding declining academic levels and a widening gap in student abilities.

## **Problem Statement**

The number of 18-year-olds in the Japanese population has been declining since 1992, reaching 1.18 million in 2014. Although the figure has steadied over recent years, the National Institute of Population and Social Security Research has claimed that the number of 18-year-olds will begin to decline again from 2018, falling below the 1 million in 2031. This situation may lead to more academically unprepared students. Various measures have been implemented to cope with declining academic abilities among students. Some universities provide remedial education and others provide placement tests to grade students according to their proficiency levels. These strategies are believed to help students gain a necessary degree of support as well as helping instructors adjust course levels and content accordingly.

The current study focused on a small private university. This university began implementing English and mathematics placement tests in 2007, and Japanese placement tests in 2014. The purpose of these tests was to identify students with low proficiency levels so that necessary support could be provided. However, each placement test is planned, implemented, and evaluated by the responsible faculties in their own subject area. How the results are used depends on decisions made in each faculty, and information regarding placement tests is not shared with other faculties.

## **Significance of the study**

Placement tests for various subject areas have been implemented at many universities. Given this, a better understanding of the overall situation regarding placement tests has become more important, with an analysis not only of individual subjects but of their general use required to assess them effectively. Moreover, a unified understanding of students' proficiency levels, their background, and their difficulties is necessary to gain accurate information. Based on shared information, collaboration among faculties, which is a key to success through providing a supportive environment for all students, can be fostered. However, there are few opportunities for information-sharing among university faculties. The current study aimed to challenge this limited information-sharing environment.

## **Purposes of the Study**

This study had three purposes, namely:

1. to examine the characteristics of different majors based on the results of three placement tests, comprising the subject areas of English, Japanese and mathematics;

2. to analyze relationships between the three placement test results;
3. to analyze the admission methods used for students with lower proficiencies.

The ultimate goal of this study was to provide practical results to assist with reviewing and modifying the current support system.

### **Research Design**

To achieve these three purposes, the following data collection and analysis methods were used.

To address the first purpose, data from three placement tests involving English, mathematics and Japanese were analyzed for their numerical values, distribution and frequencies.

To address the second purpose, data from the three placement tests were analyzed using a correlation approach.

To address the third purpose, detailed analyses for individual students categorized with lower proficiency levels in each test were extracted. Their scores and the admission methods involved were analyzed, using numerical values, distribution and frequencies.

### **Target Population**

A total of 165 new students at the small private university were involved in the study. This private 4-year-university has approximately 1,000 students, with two departments, the health science department and the nursing department. The study sample was drawn from the Health Science Department, which has majors in physical therapy (PT), occupational therapy (OT), and welfare and psychology (WP).

### **The Placement Tests Used at the University**

The university conducts placement tests for English, mathematics and Japanese. These placement tests are developed, implemented and evaluated by the faculties responsible for each subject. For English, all new students take the English placement test. Based on the test scores, English course coordinators decide the “cut-off line” to form a special class consisting of the 25–30 students with the lowest scores. These students stay in this class throughout the year. A placement test for mathematics is required for only the PT and OT students. Students with low scores are recommended but not required to take a basic mathematics class. For Japanese, a placement test is administrated to all students. Students with low scores are placed into non-credit basic Japanese courses, consisting of a small number of students during the first semester. Based on their first semester grades, some students are recommended to continue their courses for the second semester.

### **Literature Review**

The literature review section focused on the following:

1. an overview of issues faced by universities in Japan;
2. the use of placement tests at Japanese universities;
3. studies of the placement test in relation to school grades;
4. studies of the placement test in relation to different admission tracks

### 1. An overview of issues faced by universities in Japan

According to the Ministry of Education, Culture, Sports, Science and Technology (MEXT), the number of college-bound 18-year-olds is about to reach its lowest recorded point and continue to decline, in what has been called the ‘2018 problem,’ creating in turn an issue for maintaining university admission quotas. In 2017, the number of private universities with unused enrolment capacity was 229, a reduction of 5.1% from the previous year. However, many universities, especially those serving local regions, are struggling with a shortage in the number of applicants and have developed alternative admission tracks to secure a higher enrollment rate. Such a situation is considered to raise serious issues concerning low student academic levels as well as contributing to an academic achievement gap among students.

### 2. Use of English placement tests at Japanese universities

With growing concern arising from their experience of first-year students, the numbers of universities in Japan using placement tests have been increasing. In 2002, Shimizu explored the use of English placement tests at universities offering four-year degrees, and found that 64 out of 200 universities were using placement tests and 8 were planning to use them. Although 104 universities responded that they did not have large-scale tests, 31 indicated that they were considering introducing placement tests. Sugimori (2008) surveyed 208 universities and found that 55.7% used placement tests to place students in classes based on their proficiency levels. Recently, Otani et al. (2014) conducted a survey involving responses from 16 universities, and reported that 12 used placement tests to place students into different classes. The kinds of tests used as placement tests vary, from commercial tests such as TOEFL, TOEIC or STEP to in-house tests. In principle, these placement tests are used for classifying students into different proficiency levels so that appropriate support can be provided and teaching efficiency increased. Although questions had been raised concerning the validity and reliability of the tests as well as the effectiveness of grouping students into different classes based on proficiency levels, these studies suggested facilitating working groups to plan, construct, implement, and evaluate the placement tests to identify a more appropriate and effective use of them.

### 3. Studies of the placement test in relation to school grades

The relationship between placement tests and school grades has been examined in several studies. Otani et al. (2014) studied an English placement test for placing students into three English class levels. The validity of the test was analyzed using standard deviations. The study examined the number of students who failed an English course for two semesters, before and after implementing the placement test. The study found the number of failed students decreased after implementing the placement test for the first semester. However, there was no decrease shown for the second semester. The researchers involved considered that the English proficiency gap among students after the first semester widened within the class and that the subsequent efficacy of the placement test was weakened.

Sato et al. (2016) found a weak to moderate correlation between the results of a mathematics placement test and the grades of first-year calculus students. However, the study also revealed that the correlation became weaker throughout the year.

Moreover, a comparison between the class formed according to the placement test results and randomly formed classes revealed that the former group showed a high correlation between first and second semester grades while the latter showed no correlation.

Ikegami (2013) focused on the results of a physics placement test and the course grades of 129 first semester physics students. The study found a moderate correlation between the placement test and the grades. Moreover, students who were placed in a basic course due to their lower proficiency levels showed an improvement in the main course.

A study by Obata (2014) involved 166 students, and examined the relationship between placement tests and student grades after three years. The sum of three placement scores, comprising English, mathematics and science, were used for the study. The study found a weak correlation between placement tests and the second and third year of study, whereas the grades from the first year had a strong correlation with the placement test scores. The study also found a strong correlation between the first-year grades and grades in later years. The study concluded that placement tests may help to predict later grades in subsequent college years, but not with precision.

These four studies showed a weak to moderate correlation between placement tests and grades, suggesting there is some benefit in placing students into different class levels based on placement test results. However, the studies by Otani et al. (2014), as well as by Sato et al. (2016), and Obata (2014), also revealed that such correlations became weaker over time.

Two studies have found other measurements to be useful, in association with placement tests, to determine students' later achievement. Belfield and Crosta (2012) used data drawn from a statewide community college system, involving two placement tests. The study found a weak correlation between placement tests and students' GPA. The study found that high school GPAs were useful for predicting many aspects of students' college performance, and have a strong association with college GPA.

Ookouchi and Yamanaka (2016) examined students' GPA and its relationship with a mathematics placement test, the educational background in high school, and entrance exam results. Based on the scores of the placement test, students were classified into 5 levels. Among those at the lowest level, 58.3% had the lowest GPA of the semester, below 1.5, and were at risk of not passing. Moreover, of 11 students who did not continue their courses, 9 were classified in the lowest level at the placement test. On the other hand, the students' high school education or their entrance examination results did not correlate with their placement results. These two studies found that students' high school GPA could be linked to their college performance.

Some studies have shown that placement tests can be effective, but not in the long-term. Other studies have shown that alternative measurements, such as high school GPA, are more accurate and reliable in predicting later student performance at university.

#### 4. Studies of the placement test in relation to different admission tracks

According to MEXT (2017), 56.1% of new students were admitted to universities in Japan in 2017 through the use of general examinations, while 43.7% entered using the recommendation-based method (34.8%) or AO tests (8.9%). Concerning private universities, 49.0 % of new students took general examinations, while 50.7% were admitted through the recommendation-based method (40.1%) or AO tests (10.6%). These percentage figures indicate a notable change from figures in 2010, where 65.8% were admitted through general examinations, while 33.1% were admitted through the recommendation-based method (31.7%) or AO tests (1.4%). Universities have increased their use of the recommendation-based method or AO tests as a means to secure more students. However, this change is considered to be causing a variation in academic abilities among university students, with claims that the students admitted through the recommendation-based method or AO tests were falling behind academically. The issue with students entering university through the recommendation-based method or AO tests is that these students' academic abilities are not clearly identified. Therefore, an early evaluation of these students' basic academic abilities is urgently required to know whether they are likely to complete college courses successfully.

Several studies have focused on the different admission methods used for determining student academic abilities. Ikeda (2009) examined the GPA average of two groups of students, that is, one group who entered university through AO tests and another group who were admitted through general entrance examinations. Based on the course grades for the first two years, the study concluded that there was no evidence that these two groups differed in their course grades.

Contrary to Ikeda's study, four other studies have found differences in academic ability among students depending on their admission method. Hirose (2016) compared students' placement tests and the grades of final examination among students who had enrolled in three different mathematics courses. In terms of their admission method, those who had taken general examination had higher grades compared to those who had not taken general examinations.

A study by Yamauchi et al. (2015) found that those who took the general examination, which has a required mathematics component, had higher scores in placement tests and performed better in mathematics courses.

Koyama et al. (2013) focused on three placement tests, involving the subject areas of chemistry, biology and physics. Their study revealed that those who were admitted through high school recommendation scored 10 points lower in chemistry, 2 to 3 points lower in biology and 8 points lower in physics, compared to students who had been admitted through the other recommendation base. Those who took general examinations scored more highly again than these two groups.

In summary, there has been no conclusive evidence found of a relationship between placement test scores and school grades, or of academic differences among students admitted through different admission methods. Students' educational backgrounds, the methods used for university admission, students' GPAs, and their course grades seem to be of varying value in understanding students, their difficulties and their

needs. Likewise, the placement test appears to be one further measure to assist with early identification of students' academic proficiency levels. Although reported studies have focused on the placement test, there has been little research done to provide an overview of all placement tests or a close examination of individuals who were classified as having low proficiency levels. Moreover, the universities in which these placement test studies were conducted are considered as relatively large, or well-known, or elite universities. Little work has been done on smaller, non-elite universities in this regard.

## Conclusions

The results of the study

This section presents the study results in terms of the four study purposes.

### 1. The characteristics of different majors based on the results of the placement tests

The followed table (Table 1) shows the results of three placement tests (mathematics, Japanese, and English). Scores have been converted into 100 points as full marks.

Table 1: Average score among the three subject majors of English, Japanese and mathematics

	English	Japanese	mathematics
PT	59.6 SD 6.55	82.8	62.1 SD 7.29
OT	53.3 SD 5.31	80.2	51.7 SD 6.69
WP	50.5 SD 6.86	81.9	N/A

As shown in Table 1, PT majors had the highest score in all three tests. There was a wide gap between OT and PT majors in terms of the average mathematics result, and between WP and PT majors in terms of the average English result.

### 2. The relationships between three placement test results

To examine whether relationships exist between the three tests, a correlational analysis was performed. The following tables (Table 2 to Table 5) indicate the results of the analysis.

First, the analysis focused on the relationships between the three tests. For this analysis, WP students were excluded as they do not take a mathematics test.

Table 2: English, Japanese and mathematics test correlations for PT and OT students

		English	Japanese	mathematics
English	Pearson correlation	1	.285**	.448**
	Sig. (2tails)		.001	.000
	N	138	138	138
Japanese	Pearson correlation	.285**	1	.067
	Sig. (2tails)	.001		.438
	N	138	138	138

\*\* p < .001

As evidenced in Table 2, a weak correlation (.285, p < .001) was found between the Japanese and English scores. A moderate correlation (.488, p < .001) was also found between the English and mathematics scores.

The next two tables (Table 3 and 4) show results for examined PT and OT students separately.

Table 3: English, Japanese and mathematics correlations for PT students

		PT English	PT Japanese	PT math
PT English	Pearson correlation	1	.296**	.485**
	Sig. (2tails)		.004	.000
	N	92	92	92
PT Japanese	Pearson correlation	.296**	1	.131
	Sig. (2tails)	.004		.212
	N	92	92	92

\*\* p < .001

Table 3 shows the results for PT students. A weak correlation (.296, p < .001) was found between the Japanese and English scores. A moderate correlation (.485, p < .001) was also found between the English and mathematics scores.

Table 4: English, Japanese and mathematics correlations for OT students

		OT English	OT Japanese	OT math
OT English	Pearson correlation	1	.250	.259
	Sig. (2tails)		.094	.082
	N	46	46	46
OT Japanese	Pearson correlation	.250	1	-.124
	Sig. (2tails)	.094		.410
	N	46	46	46

\*\* p < .001

On the other hand, Table 4 shows that there were no significant correlations between the three tests for OT students.

The followed table (Table 5) shows the result of the correlation analysis for WP students.

Table 5 Correlation of English and mathematics for WP students

		WP English	WP Japanese
WP English	Pearson correlation	1	.585**
	Sig. (2tails)		.001
	N	27	27

\*\*  $p < .001$

Table 5 indicates a strong correlation (.585,  $p < .001$ ) between the Japanese and English scores among WP students.

### 3. The admission methods used for students with lower proficiencies

Students classified as having lower proficiency levels based on the scores of the three placement tests have been identified. The number of these students for each different major and for each subject is described in Table 6.

Table 6: Students classified as having lower proficiency levels

Majors	mathematics	Japanese	English	Cumulative total	Total	%
PT	26	19	8	53	42	45.7
OT	20	14	11	45	34	73.9
WS	n/a	8	6	14	8	29.6
	46	41	25	112	84	

As shown in Table 6, students with low proficiency levels comprised 46 students in mathematics, 41 in Japanese and 25 in English, making a cumulative total of 112. However, some student names overlapped because they were enrolled in more than one subject. Therefore, the total numbers from each department are shown in the Total column, while the leftmost column indicates the proportions in each major. Eighty-four out of 165 students (50.9%) were found to have low proficiencies in one or more subject areas. Table 7 shows the number of students in multiple subject areas.

Table 7: Students taking multiple classes due to low proficiency levels

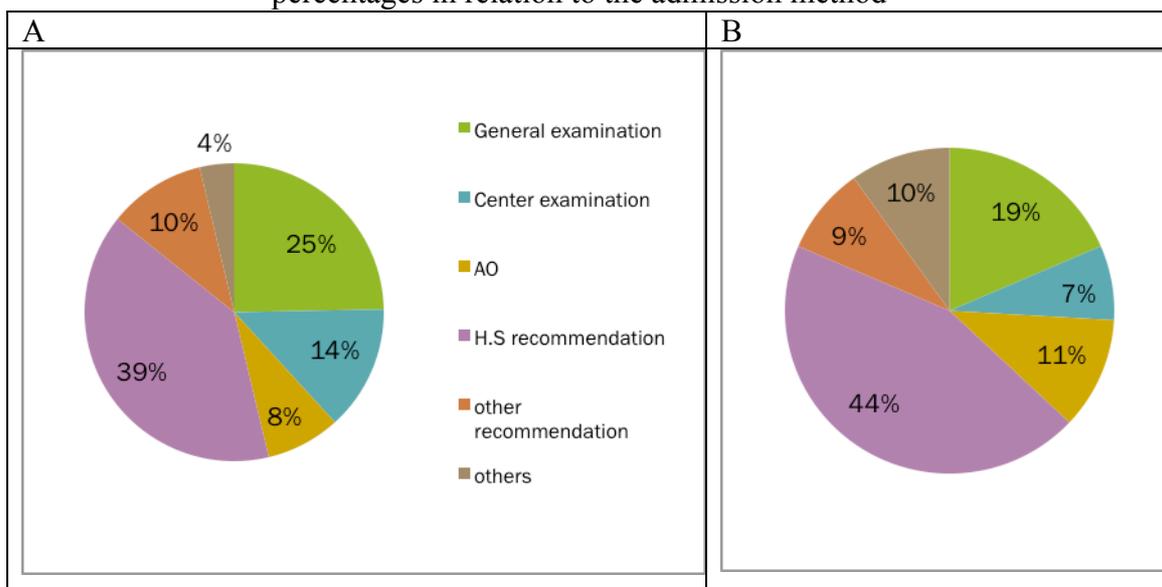
Majors	M x J x E	M x J	M X E	J x E	Total
PT	2	2	6	1	11
OT	3	6	1	1	11
WP	n/a	n/a	n/a	6	6
	5	8	7	8	28

M: mathematics, J: Japanese, E: English

Table 7 indicates that 2 PT students and 3 OT students were classified as having low proficiency levels in all subjects, namely in mathematics, Japanese and English. Six WP students were considered as having low proficiency in Japanese and English (J x E). Regarding PT students, 11 students comprising 12 % of the total number of PT students were classified as having low proficiency levels in more than one area. Concerning OT students, 11 students comprising 24 % of the total number of OT students were classified as having low proficiency levels in more than one area, and 6 students comprising 22% of the total number of WP students were classified as having low proficiency levels in more than one area. Overall, as noted, 84 out of 165 students (50.9%) were considered as having low proficiency levels in one or more subject areas.

The following table (Table 8) compares the percentages of different admission methods, including general examination, center examination, AO, high school recommendation, other types of recommendation, and others for all new students in 2017 (A) with the percentages of students with low proficiency levels in one or more subject areas (B), in relation to the admission method.

Table 8: Different admission method percentages compared to low proficiency level percentages in relation to the admission method



As shown in Table 8 (A), new students taking subject examinations comprised 25% through general entrance examination and 14% through center examination (14%), while the rest, comprising 61 % in total, were admitted without subject testing. Table 8 (B) shows the percentage breakdown of students with low proficiency levels in relation to admission method. A total of 44% entered the university through high school recommendation and 26% took subject examinations, comprising 19% for general entrance examinations and 7% for center examinations, for university admission. In other words, 74% had not taken subject examinations.

## Discussion

The results reveal that there are differences among the three majors. PT students showed the highest average scores in all three tests and significant correlation was found between their tests. The Japanese and English scores for WP students also correlated. However, OT students' scores did not show any significant correlations. These results imply that PT and WP students who have low proficiency levels in a particular subject tend to have low scores in other subject areas. In other words, PT and WP students with low proficiency levels are likely to have low academic abilities overall. This situation does not apply to OT students. The reason may be that OT students with low proficiency levels tend to have a specific weak subject. Another difference found among different majors was the percentage of students classified as having low proficiency levels in one or more subject areas. In total, 84 out of 165 sample students, that is 50.9%, were considered as having a low proficiency level in one or more subject areas. When individual departments were focused on, it was found that 45.7% of PT students, 73.9% of OT students and 29.6% of WP students were classified in this category. These distinctive results for each major should be taken into account in implementing support systems. A careful consideration of course content, the focused levels, and supportive strategies for those students with low proficiency levels as well as for those with better proficiency levels is necessary, based on the differing results for each major. For example, the focus and aims of the curriculum could perhaps be different in the OT department, where three-fourths of students were considered as having some kind of difficulty, compared to PT or WP departments.

Regarding admission methods, this study revealed that approximately 60% of new students did not take subjects tests for their entrance examination. It also confirmed that over half of new students had difficulties in one or more subject areas on entering university. In respect of students with low proficiency levels, 75% had not taken subject tests for their admissions and nearly one-fifth had low scores in multiple subject areas. Effective support systems need to be urgently implemented to ensure that these students possess the skills and knowledge necessary to continue college study, pass the National Examinations which are needed for working in the field, and to graduate from school. There are several possible approaches that could be taken to improve the current situation. One option might be to reduce the allocation for the recommendation-based method and AO admissions. However, it would not be easy to implement such a strategy since securing a sufficient number of applicants is a major priority for universities. Another option might be to review and strengthen pre-entry to university education. Since certain admission methods do not require subject tests, students using those methods may not study as much as those who take general entrance exams. Their academic abilities are unassessed through examinations until they take placement tests and start college courses. Well planned pre-education is considered to encourage students' motivation to study and to work on acquiring the necessary skills for university, even though significant progress within a short time period is unlikely.

### **Limitation of the study**

Since this study focused on a small university, the sample size was small. Additionally, the number of students within the three different majors varied. These limitations make generalization of the study results difficult. However, as stated in the study, this study was also intended to help encourage the sharing of information among the various faculties so that a better understanding of the students and collaboration for building supportive education could be promoted. This study should be on-going, and should involve obtaining student data every year and doing follow-up study on students to gain accurate information on student difficulties and progress.

In addition, a review of the current pre-education system is urgently required. The university provides pre-entry education for those admitted early through the recommendation-based method. However, this pre-entry education is planned and implemented by individual departments. Information sharing among faculties and investigation of current pre-entry education should be undertaken.

Finally, it should be noted that, despite having many new students academically underprepared, the university has a good record for students passing the National Examinations. Concerning the National Examinations, the university has the highest passing rate for PT and the second highest rate for OT among tertiary universities in Japan. Therefore, the challenge facing the university is to bring students with low proficiency levels up to a standard sufficiently high to pass the National Examinations, to enable them to work in their designated field.

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***Bridges between SLA Research and Classroom Teaching: Implications from Foreign Language Teaching in New Zealand Primary and Secondary Schools***

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**Abstract**

It has been argued that there is a gap between the theoretical recommendations of second language acquisition (SLA) research and actual language teaching practices. Responding to this concern, this paper examines how ten well-known SLA research-based teaching principles (Ellis, 2005) have been implemented in classrooms in New Zealand primary and secondary schools. These ten principles include, for example, the need for learners to develop a repertoire of formulaic expressions as well as the necessity to focus on meaning and form. They are used as the basis for ten different foreign language programs taught in New Zealand schools (Erlam, 2008). These include Maori, New Zealand Sign Language, Pasifika languages and Japanese. This paper introduces a study exploring how the ten principles have been interpreted by Japanese language teachers. Data from government curriculum documents, lesson observations, and interviews with teacher trainers at a national level and language teachers in local schools are used to describe how the ten principles are effective in improving pedagogy and what aspects of these principles are difficult to implement. Although the data is confined to primary and secondary education in New Zealand these results are relevant to other teaching and learning contexts in that they shed light on how SLA research and actual classroom practices can inform each other to increase the effectiveness of foreign language teaching and teacher training.

Keywords: SLA research, teaching principles, New Zealand, Japan, primary, secondary

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## Introduction

English as a Foreign Language will be a compulsory subject in third and fourth grade classes in Japanese elementary schools from 2020 (MEXT, 2015). In order to support elementary school teachers who may have little experience of teaching English the lead author and her colleagues have undertaken comparative research at primary schools in China, South Korea and the UK, which has resulted in the production of case studies of useful examples and various model practices in those countries (Sakui, 2016; 2017a; 2017b; and, Sakui, Yamauchi & Shiobara, 2106).

One missing topic of examination in those countries, however, was to identify the underlying principles that teaching practices are based on. Since 2005, New Zealand has organised language teacher training around ten principles derived from second language acquisition (SLA) research (Ellis, 2005). It is useful, therefore, to examine to what extent these underlying principles have been adopted by New Zealand language teachers and whether there are any ones that would be particularly appropriate for Japanese elementary school teachers to learn from. This paper reports on a preliminary investigation of language teaching in New Zealand which seeks to highlight useful pedagogical practices at primary and secondary level with a special focus on the SLA principles underlying those practices.

The paper is organised into four parts: a brief summary of New Zealand's national policy for learning languages; a snapshot of language teaching gleaned from observations of lessons in a small number of New Zealand primary and secondary schools; a focus on the SLA principles that New Zealand interview participants believed were most relevant to their contexts; and, a list of implications and suggestions that these findings might have for the forthcoming changes to Japan's elementary English education system. Before examining the first of these four parts a brief summary of the study methods and approach is given.

## Methodology

In March and September 2017, the two authors visited New Zealand in order to observe and interview various participants from the primary, secondary and university level who are involved in teaching Japanese language or supporting such teachers. Japanese was chosen in order to provide a tight focus for the research rather than collecting data on different languages. Participants were recruited based on one initial contact and a subsequent 'snowball sampling' method (see Dörnyei & Csizér 2012, p. 81) in which further participants were found. Five teachers; two at the primary school level and three at secondary were observed teaching and interviewed. Three teacher trainers and education advisors based at two universities were also interviewed.

The first visit in March offered the chance for the researchers to gain an understanding of the New Zealand language education system as a whole whereas in September there was a more specific focus on the impact of the ten language learning principles identified by Ellis in 2005. This change in focus is reflected in the interview protocols: the one in March was open ended and asked for explanations of teaching activities whereas the one in September asked teachers to explain their pedagogy in terms of SLA research (the ten principles). The lessons in March were at the beginning of the school year whereas those in September fell during an

assessment phase so it was possible to gain understanding of different teaching processes and emphasis. This was serendipitous for, as will be explained below, the assessment procedures in New Zealand are somewhat unique and very thought provoking.

### **New Zealand policy and language learning framework**

Ten languages are offered in New Zealand schools; these include Maori, New Zealand Sign Language, Pasifika languages and Japanese. The New Zealand Ministry of Education provides guidelines, materials and support for all these languages but it is the responsibility of each school as to whether they actually teach any of these languages to their students. Since 1989 New Zealand has implemented a very devolved school system with a great deal of independence for individual schools and teachers as regards the choice of subjects to be taught, materials and approach to be used, and what forms of assessment are adopted (Nusche, Laveault, MacBeath & Santiago, 2012).

The New Zealand Ministry of Education (2016) uses a three-part framework to guide language teaching; this consists of teaching language communicatively, teaching about culture associated with language, and teaching language learning strategies. Within this framework teachers are encouraged to adopt ten principles of language learning that are based on SLA research (Ellis, 2005). These are taught to student language teachers during their pre-service training at university and are the basis of an in-service development program called TPLT (Transforming Practice in Language Teaching, 2017). The course is a challenging one as teachers have to enrol on a language course, be observed teaching four times, and attend an eight-day pedagogy course. It is during this eight day course that the ten SLA principles are introduced and applied. The ten principles are listed as follows:

1. Instruction needs to ensure that learners develop both a rich repertoire of formulaic expressions and a rule-based competence.
2. Instruction needs to ensure that learners focus predominantly on meaning.
3. Instruction needs to ensure that learners also focus on form.
4. Instruction needs to be predominantly directed at developing implicit knowledge of the L2 while not neglecting explicit knowledge.
5. Instruction needs to take into account the learner's 'built-in syllabus'.
6. Successful instructed language learning requires extensive L2 input.
7. Successful instructed language learning also requires opportunities for output.
8. The opportunity to interact in the L2 is central to developing L2 proficiency.
9. Instruction needs to take account of individual differences in learners.
10. In assessing learners' L2 proficiency, it is important to examine free as well as controlled production.

The participant teacher and advisor responses to these ten principles are reported below after a description of the school contexts in which languages in New Zealand are taught.

### **Primary school snapshot**

The number of students in the primary school lessons varied from 20 to 30 students. In some lessons different year groups were mixed together. The teachers were 'native' Japanese teachers who went from one class to another. The main teachers remained during the lessons but varied in their involvement. Some did their own work at the back of the class, others helped particular students and others were fully involved in the lesson and joined in with all the tasks and activities.

Lessons at the primary school level last for 30 minutes and are held once a week. During this time the teachers we observed tried to teach a number of points: ways for students to express personal information (introduce basic information about yourself such as name and age), and common Japanese expressions such as greetings, numbers, and days of the week. In addition, the teachers drew attention to aspects of Japanese 'culture' such as the use of chopsticks, taking shoes off, bowing, foods, clothing, and well-known animation characters. Culture was loosely defined as aspects of a typical Japanese lifestyle that might be somewhat different from a New Zealand one.

With such a short time to expose students to Japanese language and culture the lessons were teacher-centered and tightly focused on choral drills, substitution drills, chaining, repetition and review. The lessons depend very much on the personality of the teacher to generate a positive, fun and relaxed atmosphere in which students can gain some exposure to the target language and feel positive towards that language and language learning in general. This approach does seem to have worked: although this is somewhat anecdotal evidence, when the researchers walked around the schools with the Japanese teachers children shouted out greetings and short phrases of welcome in Japanese and were completely at ease in doing so.

New Zealand schools are organised into 'cluster groups' so that teachers can help support each other in face-to-face development programs and through online discussion. One university teacher educator who is an advisor to a Japanese cluster group outlined the principles that her group tries to follow (these are in addition to the SLA-based principles which will be discussed below): there is no formal assessment at the primary school level; instead the lessons should provide enjoyment and fun rather than fear and apprehension; language learning should be a 'normal' part of school life; and, students should be taught good language learning strategies.

### **Secondary school snapshot**

The classrooms in which lessons were observed were devoted to language learning which meant that they could be decorated with materials connected to the language (the Japanese ones had photos, pictures and maps showing scenes from Japan; Japanese flags; and, student drawings of manga and animation characters). There were also posters and various visual aids that could help students remember vocabulary and grammatical structures. In addition, each classroom had a permanent computer and projector that was online so additional materials and realia could be swiftly shown to the students. In one school the researchers joined in a lunchtime anime club where about ten students watched an animation (in Japanese with English

subtitles). In sum, these classrooms were places where students could really be exposed to an atmosphere and reality strongly connected to the target language.

The lessons that were observed at secondary school level took place from years eight to 11. The number of students ranged from ten to 24. The classrooms were set up for communication with students sitting in groups of three or four at desks that could be moved around if necessary (in one school they had 'bean bags' on the floor so children could really relax when talking to each other). The types of tasks and activities tended to be 'PPP based'; that is, presentation and controlled practice followed by free practice. During the presentation and controlled practice stages there was a lot of brisk choral and substitution drills followed by pair, group and whole class practice. Students also completed written workbook tasks to support or consolidate particular language points. The teachers used online materials and activities to introduce language items, to exemplify them, or to review. One example was the use of Kahoot software as a review game; students used their smartphones to answer questions in a group competition. It was a very lively way to finish off the lesson.

The New Zealand Ministry of Education actively encourages schools to use technology but, similar to the responsibility for choosing to teach languages or not, the decision as to what level of technology to use rests with individual schools. One school where lessons were observed issues iPads to all students. During the lessons, the students used the iPads to carry out various tasks including searching for information, taking pictures and recording each other practising model conversations which they later uploaded to the school LMS (Google Classroom). Other examples of technology were the use of a language application (Language Perfect) for homework practice. The students in the participating schools clearly were used to digital technology and it was a 'normalised' (Bax, 2011) part of school pedagogical practice.

One issue that New Zealand language teachers face is that of 'student retention' which means that students are free to choose which kinds of lessons they wish to continue with. As languages are not core to the New Zealand curriculum students can drop them or change language. This means that language teachers have to be concerned about whether or not their students will continue to study that language. As a result, teachers try very hard to make their lesson as attractive and motivating as possible and talk a lot to their students about why it is important to study a language (for work, a career, travel and so on). Even so, the numbers of students that continue to study languages in the last three years of secondary school has continued to decline (Tan, 2015). According to the participants, when students start to be assessed for university entrance they choose to study subjects other than languages, such as STEM ones, that they, their parents or other teachers believe will benefit them more. They may also choose to take a new language (Spanish is very popular) rather than continue with one they have already studied (such as Japanese). Students perceive that studying a new language will be at a basic level and will be an easier option than improving their existing skills.

Another characteristic of New Zealand teachers is that they need to take account of learners' individual differences or diversity as the students get older. The participants reported that the students' needs are diverse and their proficiency levels and aptitude vary considerably. This makes teaching challenging especially as they have often

have mixed grade level students in one class. One teacher reported that she has to attend to four different types of student in one class (different year groups and exchange students), for whom she has to set different learning goals and prepare different teaching materials as she monitors their progress.

The NCEA (National Certificate of Educational Achievement) exams that students take in their last three years of secondary school strongly influence what is taught. Since being phased in between 2011 and 2013 (East, 2015) this scheme assesses all four skills in a very interesting way. Receptive skills (listening and reading) are assessed by an external exam but active skills (writing and speaking) are internally assessed at each school. The speaking test or 'interact' test (Erlam, 2015), provides an opportunity for students to speak with each other in a range of authentic and spontaneous interactions. This means that students have to practice such interactions and these were observed by the researchers during the September visit. Students in Year 11 were practising paired discussions (about their 'best holidays') with each other, with their teacher and with a teaching assistant. Informal talks with some of the students revealed that they thought very positively about the interact test although it was hard work and challenging. It is equally challenging for teachers as it greatly increases their workload. As well as preparing students to take the exam teachers must mark it and then norm the grades with colleagues. If they do not have colleagues they must meet with teachers from other schools to norm the grades. The implications of devolving exams to the teacher level (as well as syllabus and materials creation) is that teachers have a great deal of freedom but also carry a heavy responsibility on their shoulders.

### **SLA principles**

During the interviews, the teacher and advisor participants were asked about the ten SLA principles (Ellis, 2005) that New Zealand uses to underpin language teaching. The participants were asked whether they had heard of the principles, whether they agreed with them or adopted them, and which ones they thought were most appropriate in their context. The results are as follows:

Two of the eight participants did not know about the ten principles. These were both Japanese teachers who had not undergone formal training in New Zealand. The other six participants (three from New Zealand, two from South Korea, and one from Japan) all knew about and had studied (or even taught) the principles. As a general rule they thought that they were a very useful guide for teachers; however, they did feel that the list could be shortened and that some were more important than others.

The ones that they thought were most appropriate in their context were as follows: Principle 1. Learners need to develop a rich repertoire of formulaic expressions. This was felt to be particularly important for beginners so that they can communicate immediately with sound bites of language even if they may not have a linguistic understanding of these expressions. In tandem with this was the belief that Principle 2, learners should focus on meaning, was very important in guiding pedagogy. The third area that informants thought was most important was a combination of Principles 6, 7 and 8. That is, input and output are necessary and that opportunities for interaction are vital.

The participants expressed the opinion that there should be less focus on form or knowledge about language (Principles 3 and 4) and included within this idea is that there should not be an overemphasis on accuracy. Teachers should be able to develop a tolerance for student errors as they can learn language from their mistakes. As long as students focus on communication and as long as they can maintain an interest in studying Japanese then there should be very little focus on their mistakes. Only once students have really committed themselves to improving their language skills should teachers raise awareness of mistakes and spend time on developing both implicit and explicit knowledge of a language.

### **Potential implications for English language teaching in Japanese elementary schools**

This paper reports on a very preliminary study with data from a small number of lesson observations and interviews. However, it is clear that even though data is limited there are still a number of potential implications that are worth examining in order to support elementary school teachers in Japan as they transition to the 2020 start of English classes.

Firstly, regarding the responses of informants to the ten SLA principles underlying New Zealand language teaching, it would appear that it is a functioning and useful heuristic to guide teachers. In particular three areas are emphasised: to base teaching on meaning; to teach useful formulaic expressions; and, to have plentiful opportunities for input, output and interaction. The practical ways in which these are expressed is that meaningful input can be achieved through teacher instructions in the target language; through the provision of a great deal of visual support; and, through project learning where students can research topics and issues of personal relevance. Concerning output, there may need to be little focus on accuracy and a tolerance for mistakes and an emphasis on fluency. Interaction in terms of students talking or writing to each other may be difficult at lower levels unless students have learned a minimum level of vocabulary. However, assistant language teachers (ALTs) can be very helpful in giving students individual attention and sheltered opportunities for genuine interaction. As students gain competence then the possibility of washback from speaking and interaction tests has great potential to influence the style and content of lessons.

Secondly, this study points to broader ways in which Japan's English teaching systems could develop. For example, it would be useful to identify Japan's own SLA-based principles. It seems that ten is too a large number for teachers to be aware of so perhaps three to five key principles could be identified and promoted. This, together with the above-mentioned effect of washback from tests, could be very influential in changing attitudes towards meaning and accuracy and help create linkages across school year changes (from elementary to junior and senior high school). In order to carry these changes out there needs to be systematic teacher training and development. New Zealand has found a way for teachers to have time and funds to further pursue professional development.

New Zealand teachers tend to link learner student motivation with student retention. They work hard to create enjoyable, useful and relevant lessons where the importance of language as a means of cultural insight and a tool for work and career development

is emphasised. In part, one connection to this is the bridge between language learning and the use of technology. This can be practical and motivating to students as it integrates language learning and other skills.

## **Conclusions**

This paper has described a preliminary study of Japanese language learning and teaching in New Zealand. The study is limited in that only eight participants were observed and interviewed and the language taught is Japanese which does not have the same level of importance as English does in Japan. However, these participants were found to be particularly informative, enthusiastic and knowledgeable about language teaching and so can be seen as representing good practice.

The main findings are that there are a number of interesting principles and practices adopted by New Zealand teachers that could be used as the basis for a discussion of language teaching in Japan; in particular regarding the introduction of English language teaching at the third and fourth year levels in elementary school from 2020.

These principles and practices include the idea that initial instruction should be based on meaningful language with many opportunities for interaction. There should be less focus on accuracy and language knowledge and tests that include interaction will impact on lessons so that interaction will be encouraged. The use of digital technology as a source of stimulating materials and language practice was also seen as an important feature of language lessons.

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## *Exploring Singaporean Children's Chinese Word Learning Experience*

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### **Abstract**

Learners' word learning experience and learning needs are valuable indicators for learning resource developers. This article introduces a study on exploring Singaporean children's Chinese word learning experience and learning needs after school. Through the analyses of learners' needs in Chinese word learning, we seek solutions for developing a digital Chinese word resource that better suit children's learning needs in terms of both the contents and the presenting forms. Thirty students attending grade 3 and grade 4 in five primary schools will be invited to small group discussions on their word learning experiences after school. They were asked about their experience and difficulties in using the currently available Chinese word learning resources, their satisfaction in those resources and suggestions in improving their word learning experience. Characteristics of the desired word learning contents and its presenting forms were then concluded from the group discussions. Such information will advise our later Chinese word learning resource development.

Keywords: Word learning, Chinese Language, learning experience, Singapore

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## Introduction

Learning experience refers to any interaction, course, program, or other experience in which learning takes place, whether it occurs in traditional academic settings (e.g., schools, classrooms) or non-traditional settings (e.g., outside-of-school locations, outdoor environments), or whether it includes traditional educational interactions (e.g., students learning from teachers and professors) or non-traditional interactions (e.g., students learning through games and interactive software applications)(Abbott, 2014). The current pedagogical and technological shifts in the education system in Singapore is reforming in the design and delivery of knowledge and skills to students. Meanwhile, more information is needed in how, when, and where learning does and can take place.

Chinese dictionaries are useful word learning resources for Singapore students learning Chinese language (CL) as a second language. They are normally introduced to students from primary 3 onwards. They are one of the common means for a Singaporean student who seeks help in the meaning and the usage of a Chinese word. When using a conventional Chinese dictionary, a challenge for many Singaporean students is either the pronunciation or the decoding of the character (e.g. radical) should be produced. Undergone such difficulties in using dictionaries, students may display reluctance in using dictionaries to learn words in future. The motivation to seek further understanding to expand vocabulary is thus affected. Hence, a dictionary which eases the checking procedure for young learners is a critical consideration based on both learners' motivation and lifelong learning perspectives.

Besides the difficulties in the checking process, the next difficulty may arise when students attempt to learn and understand the meaning of the words they searched. A survey of the existing CL dictionaries used by primary and secondary students is quick to reveal that these dictionaries were compiled from a native learner perspective. In other words, most of Chinese dictionaries in Singapore market are originally written for native CL speakers (e.g. learners in mainland China). Dictionaries that claimed to be compiled for children appear to be adaptation of the adult dictionaries with little change in illustrating meanings. As a result, the explanations provided by the dictionary entries may be pitched at a level that is beyond Singaporean students' comprehension, especially our young CL learners. In addition, most of these entries provide direct definitions without contextual information. The examples are usually language segments, without further context of how the word is actually used in a sentence. These may affect the interpretation of the meanings and students' learning in using the words. Therefore, existing Chinese dictionaries that Singaporean students are using may not be of much help in their understanding of the words. A severe consequence is that their vocabulary acquisition may be impaired.

In sum, CL learners' in Singapore may encounter two kinds of problems during their word learning process with the help of Chinese dictionaries. One lies in the restraint of the dictionary form which causes the difficulties in checking the target Chinese word efficiently for young L2 learners; another is that the contents of the currently used Chinese dictionaries are not customised for age-appropriateness to suit L2 learners in the local CL context, which causes difficulties in making use of the dictionaries for understanding and learning Chinese words effectively.

To understand the extent of how students suffer from the aforementioned difficulties and how they view their current experience using Chinese dictionaries in learning CL words afterschool, we conduct interviews to target groups of Singaporean students to explore their CL word learning experience with CL dictionaries and to explore the possible solutions to the difficulties they encounter. Findings from the interviews are expected to advise the development of a word learning resources suitable for Singaporean CL second language young learners in terms of both content and presenting forms.

Profiling students' existing Chinese word learning experience in different occasions is important to better understand how they can make more use of the word resource. After a better understanding of students' possible interaction with the content, requirement analyses can be done and a detailed plan of the features of the presenting form can be decided based on the advanced technology in various fields such as mobile learning and online learning. Functions of the learning resource device will then be designed to solve the difficulties students met when learning a Chinese word and, at the same time, enhancing their learning experience. Some learner-centric features that can only be afforded by interactive information and communication technology will also be discussed. Students' feedback can be collected during the development process and the trial of the prototype. The learner experience exploring and profiling will also be used as valuable information for further learner-centric curriculum and learning experience designs.

## Method

The targeted population are P3 and P4 students because they were officially introduced to use CL dictionary in schools in Primary 3. Thus they have at least one year of experience using word resources in learning new word. Students will encounter more new words as their CL learning tasks are shifting from oral language in P1 and P2 to written language, i.e. reading in P3 and writing in P4. We may expect different experience from primary 4 students from their P3 counterparts, because P4 students' major CL learning tasks in school are transferring from reading to writing at this grade.

Exploratory qualitative data collections will be conducted with small group discussions. A list of questions on three aspects of students' word learning experience was asked. These aspects are:

- **When and where:** The usual circumstances that students encounter unknown Chinese words;
- **Who:** The key knowledge sources (e.g., textbooks, all forms of dictionaries, parents, and teachers) that students consult when encountering unknown Chinese words;
- **Why:** The key features of the knowledge sources that students choose when learning Chinese words.

We managed to invite 30 P3 and P4 students (16 girls and 14 boys, aged 9 and 10) from five government schools to the small group discussions. Personal, parental and

school consents were acquired prior to the interviews. Every three students from the same grade were interviewed by a trained researcher in a quiet room. They were invited to express their thoughts and share their experience freely. The researcher in each group will facilitate the discussion with questions in the aforementioned three aspects. All the ten group discussions were conducted and audio-recorded within one month in the last term of school year. Each discussion lasts about one hour. Transcriptions were then created in the next month by one trained researcher who did not participate in the interviews to avoid bias.

## Result

Although diverse, we have some prior knowledge in students' CL word learning experience at school. Thus the questions in our discussions were mainly focused on afterschool CL word learning. Three main themes were formed based on students' responses and feedbacks. They are students' comments on the content and the presenting forms of the current CL word learning resources, their CL word learning activities after school and device availability.

On the content and presenting forms of the currently available CL word resources, we conclude the following:

### 1. Paperback Chinese dictionaries.

Students were introduced to two types of paperback CL dictionaries mainly. They are the "*Modern Mandarin Dictionary (Chinese Edition)*" (《现代汉语词典》) and "*Xinhua Chinese Dictionary*" (《新华字典》). Although they were taught to use the dictionaries, students expressed that they seldom use paperback CL dictionary or its revised versions for students. The dictionaries are heavy and inconvenient to look up the target word rapidly.

### 2. E-dictionary and its varieties

Students' most commonly used CL word resources are Electronic dictionary. In Singapore market, there are customized devices from two major brands. The database in these E-dictionaries are usually revised or simplified versions from paperback dictionaries such as "Xinhua Chinese Dictionary".

The second most used word resources reported is online dictionary (and smartphone apps). As most of the online Chinese dictionary in the market are multi-lingual versions developed from English dictionaries, some students think it is convenient to understand the target Chinese word through its English translation, some disagreed because sometimes the translation is often not accurate in conveying the full meanings of a word.

It is also interesting to find that it is popular among students to use smart input methods in hand-phones or computers for checking the Chinese characters when completing writing tasks. Some input method will offer the most commonly used word to choose, which saves checking time.

### 3. Expected improvements on the content of the dictionaries.

Commenting on the experiences of using these word resources, students' most wanted changes on the content of the words resources are:

- Making some explanations simpler (i.e. easier to understand).  
Most of the interviewed students think that the explanations in the currently used dictionaries are incomplete in picturing the full meaning of the word. Although the explanations are short to read, students sometimes have trouble interpreting the unfamiliar situations the explanation depicts.
- Providing more real life examples.  
As L2 learners, Singapore students rely more on the examples to help them picture the situation of the target word was used, its function, and the reasons why the particular target word was used in that situation. Thus, students find the examples (if there were) in the currently used word resources often detach to their familiar daily life. Also the examples didn't showcase when and how the target word is most commonly used in a real life sentence.
- Using pictures or even videos to explain words.  
Students find that it is easier to understand many words if pictures and videos were used instead of trying to understand the abstract explanations. That is another reason they found online dictionary (or app) useful.
- Adding more words to the current e-dictionary.  
This was especially requested by almost all the P4 students as they have trouble locate some words during casual reading in CL.

### 4. Expected improvements or changes on the presenting forms (or functions) for a e-dictionary (or in other format).

Commenting on the e-dictionary, most of the students wanted to make the e-dictionary "smarter" (i.e., add more functions), for instance, add voice search, Optical Character Recognition, and Text-to-speech functions, etc. They also suggested to make e-dictionary easier to operate (i.e. with better user interface). For example, at least two groups of students specifically mentioned that the keyboard of the customized device are too small to operate which increased the trouble when searching words in a hurry.

On students' learning experiences in CL after school, we found that:

- Students usually have about one hour per day for CL learning or reading after school.
- They will be encountering unknown CL words in reading books, newspapers, watching TV, and completing tasks on CL workbooks.
- If got unknown words, students will firstly ask their parents, grandparents and siblings, although the family members may not speak CL at all. They will only look up the target word in dictionaries or check online when family members

can't provide satisfying answers.

- We also found that about half of the interviewed students attend CL tuition classes or enrichment classes after school. They will ask teachers in the enrichment classes or their CL tutors about the unknown words.

We also asked about students' access to mobile devices, networks, and data plans etc. Students reported that they may have access to mobile phones under parents' supervise. About 40% students reported that they have their own smart phones (or other mobile devices). Most of them are older models from parents. Sometimes they need to share the mobile devices with siblings. Parents will allow students using certain apps in smart phones, especially if they are recommended by CL teachers, if they were proved helpful in CL learning, and if they are free of charge. An estimation of the smart phone/ computer time for each students is at least 0.5 hour per day.

## Conclusion

We reported the preliminary findings in students' current learning experience with CL word resources after school from ten small group interviews. Our findings reflected that students are encountering difficulty in using the current versions of paperback dictionary and e-dictionary. Their word learning experience is influenced by the content of the word resource, the presenting forms and their accessibility to the devices. Students are, in fact, used to engaging the internet, mobile apps and other new technology formats into their learning process. From a side angle, parents have realized the influence of the new technologies and are willing to provide their children supervised opportunities to be familiar with the new techs.

Based on our findings from the interviews, we will propose to change the presenting forms of the word learning resource, should we design a device. We will propose contents in different digital formats, such as mobile app, which supports on-the-go usage of users. Laufer and Hill (2000) pointed out that the high speed and the ease of access of electronic dictionaries encouraged language learners to make frequent use of them in the process of vocabulary learning. Mobile apps, supported by the high population penetration rate of 148.2% for mobile devices and 192.8% for wireless broadband in Singapore (Info-communications Media Development Authority, 2016), have great potential to be tapped to advance language learning. More importantly, an app-based word resource can afford more learner-centred features (Weimer, 2013) that motivate learning through designs aimed at enhancing user experience and promote active learning (Uden, 2006). Examples of features may include the creation of lists of personal favourite words, and history of words checked that can be shared with peers, teachers and parents.

In summary, a CL word resource that is age-appropriate and provides comprehensible inputs to students learning CL in Singapore seems currently unavailable. We proposes the development of Chinese Language young learners' word learning companion in the form of a mobile app. The creation of an app that should be learner-centric — in terms of both contents and its form. The proposed word learning app should be compiled for Singaporean students based on the authentic CL use in the local context, which will be made possible using CL corpus collected from Singaporean CL context (Goh, Lin & Zhao, 2013). Harnessing the affordances of technologies, the

corpus-based word learning app is expected to be handy and with advanced functions that ease the checking process, assist situational comprehension, and enhance the learning experience.

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## *A Three-level Problem Corpus for Introductory Computer Programming Courses*

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### **Abstract**

Solving problems is an important exercising activity for students in an introductory computer programming course. The paper introduces the construction of a three-level problem corpus for training the students' programming skills. The first level consists of the programming language syntax problems, including data types, control flow, functions, pointers and arrays, structures, input and output, etc. For each syntax point, there are several problems of different difficulties and each problem is in the form of single-choice question. The second level consists of the programming problems. For each problem, a text description is given and the students are required to write the corresponding source code. The purpose of this part is to train the skills of problem analysis, algorithm design and coding. Besides, each problem is provided with a couple of reference source codes which were written by experienced programmers, the students can learn how to program by studying these good examples. The third level consists of many programming projects that are collected from the Internet and our previous courses. These projects are relatively bigger programming problems such as the Tetris game. For each project, the full source codes and detailed documents are given. The students can learn how to implement a practical software by reviewing these projects, they can also modify the projects and add some new features. The above corpus is already used in our programming course at Tsinghua University. Initial observations show that students improved their programming skills after they have completed those problems in the corpus.

Keywords: programming, problem corpus, syntax, algorithm

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## 1. Introduction

Introduction to Computer Programming is an introductory programming course for non-computer science undergraduate students at Tsinghua University, China. It is an optional course for anyone that is interested in studying computer programming. The course focuses on common computational problem solving techniques and no prior programming experience is assumed. The course is given in one semester of sixteen weeks, and in each week, there is one two-hour lecture and one three-hour lab session. Generally there are about 150 students in the class and the author of this paper is one of the lectures of the course.

After teaching the course for several years, we find that many students are not able to study the course well. They may be good at studying the textbook or learning the syntax of the C language. But they are not good at solving programming problems and writing solid codes. A common situation is that a student is quite familiar with the details of the syntax such as the different usage methods of ++ operator and the order of evaluation of operators. However, when he is given a practical programming problem, he will have no idea how to solve it. In fact, many students find programming to be difficult and disheartening.

Previous research has shown that the skills required for computer programming are problem solving and analytical skills (Riley, 1981; Henderson, 1986; Maheshwari, 1997; Linn & Clancy, 1992). To make the students to obtain those skills, the course should provide them with an effective mechanism to practice programming beside the traditional classroom lectures.

Currently, the students will have an assignment of four or five programming problems for each week. They will complete the assignment in the three-hour lab session and several teacher assistants will be there to help them. The students' source codes are submitted to a online judge website whose core facility is automatic assessment of programming assignments, which means that students can receive the feedbacks immediately after they have submitted their assignments. Therefore, the students can interact with the system for a couple of rounds if he fails to submit a correct solution at the first time. By this way, the students can finish their assignments efficiently, they don't have to wait a couple of days or a week for the result.

However, there are still several drawbacks exist:

Firstly, although the online judge system is a powerful tool, it may be still inconvenient for some students, especially those who have few (if not zero) prior programming experience before taking this course. They will face a lot of difficulties when they use the system in the beginning. For example, since many students are not familiar with the syntax of the programming language, when they submit their solutions, the compiler even fails to compile these source files. And sometimes, these files can get compiled successfully, however, there are still exist some bugs which make the program run incorrectly. In that case, the system will provide no help and the teacher assistants are required to help the students to spot and correct the errors in the source code.

Secondly, if one want to learn computer programming, he should spend enough time on doing exercises after the classes. Currently, there are only four or five programming assignment problems for each week, and it generally takes the students two or three hours to finish the assignment. This can make the students review the content of the classroom lectures and understand the basic principle of programming. However, it is far from enough if one want to become a professional programmer. Therefore, the course should provide the students with more resources if they are willing to learn more about programming.

Thirdly, the online judge system employed currently is just an evaluation software, it can compile and run the source code submitted by students automatically and suggest a score according to the result. However, it is just a kind of software tool instead of course resources. The students are not able to learn how to program by using the software only.

Finally, the online system can only judge whether a program is correct or wrong, however it can not judge whether the program is good or bad. When the students are doing their homework, they are usually doing by themselves. However, since they have few prior programming experience, the corresponding result is that many source code they submit may be correct in functionality but are written poorly. These programs will occupy too much memory and computational time, which are useless in practical software projects. As mentioned earlier, the current online system is not able to solve this problem but it lacks enough information and intelligence to judge whether a program is good or bad and provides suggestions and help the students to improve their source code. If the students ask for help from TAs, they will get very good suggestions and solve the problem. However the TAs are not available 24 hours a day, you can't find a TA whenever you encounter a programming problem.

For the reasons mentioned above, the author of this paper think it is necessary to reform the homework assignments of programming courses and construct a three-level problem corpus for training the students' programming skills.

## **2. Basic Idea**

The basic idea is to construct a problem corpus for programming courses, it consists of necessary software tools as well as a large amount of course resources. The construction of the system is based on the characteristics and learning patterns of programming courses and it is designed for new students. They can begin to study programming from zero background knowledge with the help of the system and gradually improve their skills of problem solving and coding.

After teaching relative courses for several years, we summarize the characteristics and learning patterns of programming courses as follows:

Firstly, for computer programming courses, their homework should be completed in an online training system. Therefore, the students can study programming 24 hours a day, 7 days a week. They can study at any time and any place, they can also receive the feedbacks from the system soon after they submit their source code.

Secondly, there should be enough number of problems in the corpus. There is an ancient Chinese saying: if you read aloud more than three hundreds of poems of Tang Dynasty again and again, you will learn to write your own poems. This ancient saying tells us that we need to solve enough number of problems if we want to learn how to program. In fact, the skills of computer programming are developed from experienced practices.

Thirdly, the students can improve their programming skills by doing homework by themselves, however, that is not enough. We should provide the students with a positive feedback learning mechanism which means that they can study good examples of source code written by experienced programmers. As we know, the poems of Tang Dynasty are the best ancient poems in Chinese history, if we study and read aloud these good examples again and again, we will get familiar with poetry and literature very soon.

Finally, there are several different stages for a beginner to become a trained programmer. At the first stage, they will study the programming language syntax and learn how to write solid source codes. At the second stage, they will learn the skills of algorithm design and problem solving. At the third stage, they will learn how to accomplish a practical software project. These stages need different type of knowledge and skills, start from easy and end to hard. Therefore, we need to design a different type of training scheme for each stage.

### **3. Design and Implementation**

In this paper, we proposed a complete and systematic afterclass training schema for improving the students' programming skills. It consists of a three-level problem corpus and corresponding software tools.

#### **3.1 Syntax Level**

The syntax level indicates the syntax knowledge of a programming language such as C or Java. Most of the students that take this course have very few prior programming experience, they will meet many different kinds of difficulties when entering this completely new area. For example, some students are even lack of the necessary skills to use common software applications because they used to have few time to use computers under the pressure of the university entrance exams. Therefore, the purpose of the syntax level is to help the students review and consolidate the syntax knowledge they have learned. We need to build a corresponding syntax problem corpus that should cover different aspects of a programming language. For each syntax point of the language, several different types of problems are required. They are chosen from different angles and from easy to hard. The corpus is not just a problem corpus, it is also a knowledge base. Most of the problems are in the form of selection questions or fill-in-the-blank questions.

The problems in the corpus are organized according to the structures of the course which are summarized as follows:

- Data types and expressions: integers, float type, double type, char type, type conversion, variables, constants, expressions and operators.
- Simple control structures: sequencing, input and output, the relation operators, the logical operators, the if statement, the switch statement.
- Iteration: the for loop, the while loop, the break and continue statements.
- Arrays: one-dimensional arrays, two-dimensional arrays, character strings
- Functional abstraction: definition and declaration of a function, parameter passing, return values, scope of variables, stack frames
- Pointers: pointer variables, & and \* operators, pointers as parameters, pointer and array, dynamic arrays, pointer arrays, pointer to pointer.
- Basic data structures: structs, struct arrays, -> operator, structs as parameters, linear list.

For each syntax point, there will be several different problems. These problems had been collected one by one for several years. They are mainly from the exercises and exams of our course or other similar courses. For each problem, there will be problem specification, reference answer, several keywords (used for further search) and the related syntax points. Each problem is also labeled with a degree of difficulty (1-5) where 1 means the simplest and 5 means the hardest.

For example, in the Chapter 1 “Data types and expressions”, there is a syntax point “data overflow”. The follow question will be arranged when reviewing that syntax point.

```
#include <stdio.h>
void main( )
{
    short  x = 32767;

    x = x + 1;
    printf("%d", x);
}
The output is: _____
```

Some students may think that it is very easy and the answer should be 32768. However this is not the truth because the variable x will overflow.

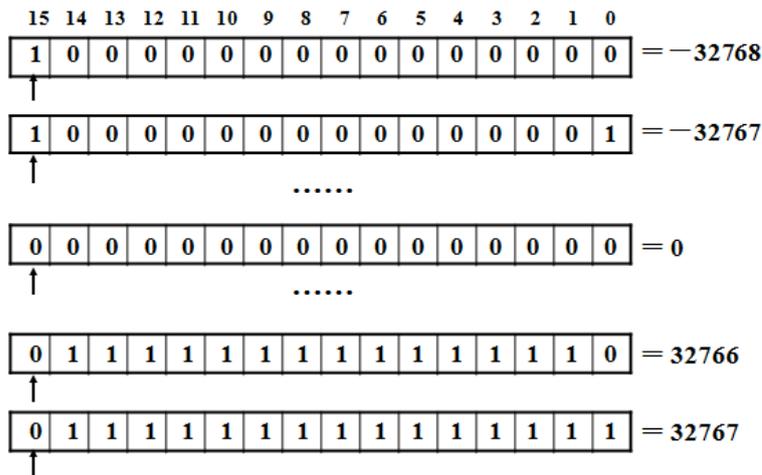


Figure 1: Data overflow

In the corpus we will incorporate Figure 1 to tell the students that why the answer is not 32768. As we know, all numbers are encoded in binaries in a computer and the length of a binary is fixed such as 16 bits. Therefore, 32767 is the maximum number that a 16-bit binary can hold. If you add 1 to 32767, a data overflow will occur and you will get -32768 instead of 32768.

### 3.2 Programming Level

The programming level indicates problem analysis and solving that are the core skills required for computer programming. When a student is given a programming problem, he should be able to fulfill the problem analysis, design the corresponding algorithm and write the correct source code. These are abstract mental skills that are harder to learn than the language syntax.

At this level, we constructed another problem corpus. All the problems are required to write out the correct source code to accomplish the tasks. The purpose here is not for reviewing the language syntax, but for training and improving the students’ programming skills. Each problem is chosen carefully because we want to cover as many of programming patterns as possible.

The problems in the corpus are not organized according to the structure of the course because there are always several different types of syntax points occur in one problem. It is an integrated application of different knowledge sources. For each problem, a number degree of difficulty is labeled, 1 means the simplest and 5 means the hardest. When the students are doing exercises in the corpus, they should do them step by step. We recommend that they begin with problems of degree 1. After they have done all the problems of degree 1, they can move to problems of degree 2, etc.

For each programming problem, there are problem specification, knowledge points involved and the programming patterns that may be used. Since the source codes submitted by the students are judged automatically by the computer system itself, we need to design and prepare a set of test cases for each problem. Generally there will be 10 test cases and each test case is worthy of ten points (the total score of each problem is 100).

As mentioned before, a corpus should contain enough number of problems to be more effective in use. To solve this problem, we tried to collect as many programming problems as possible from different sources. Some are chosen from the homework assignments and exam problems of our own course, some are from the similar courses of other universities and some are from the problems of different kinds of competitions such as ACM ICPC (International Collegiate Programming Contest). Currently we have already collected about 150 problems.

As mentioned before, the students can gradually improve their programming skills by doing homework by themselves, however, that is not enough. We should provide the students with a positive feedback learning mechanism. One will not become an excellent programmer if he does not know what an excellent program is. To solve this problem, we prepared several good examples of source code written by experienced programmers for each problem. The students can study these good examples and learn how to write solid code quickly.

Now we will demonstrate the construction of the problem corpus with an example. It consists of five steps:

- Step 1: Find an appropriate programming problem and write out its problem specification. For example, we find a problem titled “Caesar Cypher”, the corresponding problem specification is “One of the earliest encrypting systems is attributed to Julius Caesar: if the letter to be encrypted is the  $N$ th letter in the alphabet, replace it with the  $(N+K)$ th where  $K$  is some fixed integer. We usually treat a space as zero and all arithmetic is then done modulo 27. Thus for  $K = 1$  the message 'ATTACK AT DAWN' becomes 'BUUBDLABUAEBXO'. Decrypting such a message is trivial since one only needs to try 26 different values of  $K$ . This process is aided by knowledge of the language, since then one can determine when the decrypted text forms recognizable words. If one does not know the language, then a dictionary would be necessary. Write a program that will read in a dictionary and some encrypted text, determine the value of  $K$  that was used, and then decrypt the cyphertext to produce the original message. The original message contained only letters and spaces and has been encrypted using the above method. The most suitable value of  $K$  will be the one which produces the most matches with the words in the dictionary”.
- Step 2: We will analysis the problem specification and label it with a degree of difficulty. For example, the problem “Caesar Cypher” will be labeled with 4 which means it is very difficult but it is still not the most difficult one.
- Step 3: Design 10 or 20 test cases for this problem. For the “Caesar Cypher” problem, we will use different types of sentences, for example, long sentences, short sentences, sentences with long words, sentences with short words, sentences whose word number is even, sentences whose word number is odd, etc. The value of  $K$  also varies each time. Each test case consists of two text files: an input file and an output file.
- Step 4: Write comments on the problem, including the knowledge points and programming patterns it involves. For the “Caesar Cypher” problem, the syntax points include “char type” and “string access”. The programming patterns include “array element searching”, “value addition” and “find maximum/minimum value”.

- Step 5: Prepare good examples of source code for the problem. Some of these examples are written by the TAs and some are chosen carefully from the assignments of previous semesters.

### 3.3 Software Development Level

Software development is the ability to create a practical software application. It needs strong programming skills, as well as some software engineering techniques such as requirement analysis, system design, coding, testing and management.

At this level, we constructed a programming project corpus. These projects are relatively bigger open-source programming problems such as the Tetris game. For each project, the full source codes and detailed documents are given. The students can learn how to implement a practical software by reviewing these projects, they can also modify the projects and add some new features.

The construction of project corpus is time-consuming because we need to collect them one by one and not every software is suitable for our educational purpose. Currently these projects are mainly collected from the Internet and our previous courses.

The Internet is the largest public resource repository in the world, everybody can find what he want on the Internet. As far as our corpus is concerned, the project resource we find should satisfy the following conditions:

- The project should be free and open to educational use.
- The project should be open-source and the complete source code is downloadable.
- The project should have detailed documents.
- The size of the project is modest, not too big and not too small.
- The programming language of the project is C.

After finding an appropriate project resource, we will examine and improve it. Firstly, we will compile the whole source code to generate the corresponding executable file. If the compilation fail, we will debug the source code and fix it. Secondly, we will organize and improve the project's documents including comments in the source code, design document, specification document, etc. The final purpose is to make it become a runnable, readable and learnable educational resource.

## 4. Conclusion

In this paper, we constructed a three-level problem corpus for training the students' programming skills in an introductory computer programming course. The corpus is already completed. At the syntax level, we built a syntax knowledge problem corpus that covers different aspects of the C programming language, each problem is in the form of selection or fill-in-the-blank question. Currently there are totally 150 problems in the corpus. At the programming level, we constructed another problem corpus for training and improving the students' programming skills. For each problem, there are problem specification, comments on knowledge points and programming patterns that may be used, 10-20 test cases for online judgment and at least one piece of reference source code. The students are required to write out the correct source code to accomplish the task. Currently there are already 150 carefully chosen

programming problems and in the future, we will add more problems and update the reference source code of each problem. At the software development level, we constructed a programming project corpus. Each project is a relatively bigger open-source programming problem and consists of the full source code and detailed documents. Currently there are totally 45 different types of projects in the corpus, including many famous games such as the Tetris, the Battle City, the Pac-Man, etc. We have already used the above resource in our programming course at Tsinghua University. Initial observations show that students improved their programming skills after they have completed those problems in the corpus.

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## ***Implementing Pair Work for Using Smartphones in University Liberal Arts Education***

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### **Abstract**

There has been a marked decline in students' motivation in liberal arts courses at Japanese universities. Consequently, as a countermeasure, research and practical classes focused on active learning are being conducted. However, a majority of the practical teaching techniques imitate active learning methods used in the U.S., a country with advanced active learning whose citizens have high communication skills; moreover, there are several problems in adapting these techniques directly to universities in Japan, which are insular and whose students are characterized by low communication skills. The authors introduced pair work to basic information education classes in universities and have determined that even for the passive Japanese, pair learning increases motivation and improve communication skills and the ability to think; further, it has a high learning effect. In view of these results and existing problems in liberal arts education, the authors considered that using pair work in classes would enhance educational effects in liberal arts courses. Further, as the rate of smartphone ownership in our university has reached approximately 100%, it was predicted that students would actively participate in classes by using smartphones. Therefore, the authors attempted to conduct practical classes with pair work using smartphones in liberal arts education classes. As a result of that, even though there were variations due to different combinations of pairs and the individual characteristics of the students, it was revealed that students participated more actively than in usual classes, and the motivation to learn and levels of satisfaction increased.

Keywords: pair work, smartphone, liberal arts education

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## Introduction

In the classes of liberal arts courses at Japanese universities, the decline in student motivation for liberal arts education is remarkable. The reasons for this decline are as follows: 1) student's basic academic ability and intellectual curiosity are declining, 2) education concerning qualifications and specializations is regarded as important, liberal arts subjects are considered insignificant, 3) most liberal arts classes are conducted with many students and one teacher; therefore, the teaching method must be the one-way lecture kind.

To improve student engagement, research and experimental classes focused on active learning, as recommended by the Ministry of Education, Culture, Sports, Science and Technology, are being conducted as a countermeasure. Example approaches include the works of Yamauchi (2017) as well as Brent and Roger (2017). However, a majority of the practical teaching techniques imitate active learning methods used in the U.S., a country with advanced active learning whose citizens have high communication skills; moreover, there are several problems in adapting these techniques directly to universities in Japan, which are insular and whose students are characterized by low communication skills.

Since 2003, we have introduced pair work to the basic information education of the university, and have studied the effects of pair work (Oya & Uchida, 2013; Uchida, Oya, & Okuda, 2013) and the factors that inhabit the use of pair work in class rooms (Uchida & Oya, 2011) and the effective pair formation method used in class rooms (Uchida, Oya, & Okuda, 2015). As a result, it was confirmed that pair learning arouses motivation for learning, that communication ability and thinking ability are improved, the learning effect is high, and that it is possible to perform more effective pair work by eliminating impeding factors of pair work.

In view of these research results and the problems of liberal arts education, classes using pair work can not only enhance educational effect in liberal arts courses but also help to foster communication skills, such as logical thinking ability, and improved decision making skills.

One of the biggest differences between basic information education and liberal arts education is the presence or absence of a personal computer (PC). Pair work research in basic information education has been done by pair sharing of intermediate monitors in a PC classroom. However, in most courses of liberal arts classes, we do not use PC classrooms, and the classes are conducted primarily in a classroom with a blackboard or simple AV equipment.

To address the lack of PCs in liberal arts classes, we considered substituting with smartphones. Fuxin (2012) indicated that, as the functions of mobile phones and smart phones improve, they are becoming a preferred technology for replacing PCs. Fuxin (2012) further introduces many reports on smartphones use in higher education. As a preliminary survey, a questionnaire was given to about 200 people who have taken the liberal arts classes at university and the ownership rate of smartphones was almost 100%, with 98% reporting ordinary use. Also, at our university, we have promoted the e-Learning platform called Moodle (interactive learning support software), and 87% of students reported having used Moodle and nearly half used it

routinely. Wireless internet is available in all classrooms at our university and therefore pair work using smartphones is possible without any problem under the current ICT environment. Here, we will introduce practical lessons for pair work through the use of smartphones in a liberal arts course, and examine the results, effectiveness, and problems, and further would like to look at smartphone usage for lesson.

## Method

We developed a practical lesson of pair work using smartphone for an academic education lesson (environmental science) for 41 students (refer to Figure 1).

In the first lesson, we conducted a questionnaire to assess students' initial understanding of fundamental environmental problems and degree of interest, for comparison with an evaluation after class.

We then conducted eight regular classes on environmental issues. These regular classes involved distributing handouts and lecturing to students in one direction while doing slides and board work. Before the class with pair work, we conducted a simple questionnaire survey on Moodle using smartphone. The purpose behind distributing this questionnaire was to test for the ease of smartphone interfacing during the practical lesson class.

The practical lesson was conducted tenth from the beginning of the class which seems to have acquired basic knowledge on the environment to some extent. In the regular classes, students are free to choose seats, but in the experiment classes, we created pairs in advance with random numbers and assigned seats accordingly. The lesson's content dealt with an energy problem. After distributing notepads to students, they viewed slides and conducted regular classes for 30 minutes while writing on boards as needed.

Because there are many students who arranged the IC recorder to record the contents of the conversation and then talk for the first time, we set a free conversation time of 5 minutes. After the free conversation, the students (in pairs) answered 20 multiple-choice questions on Moodle using smartphones. The time allotted to complete the questionnaire was 20 minutes. Then, the students answered a post questionnaire by using a mark sheet.

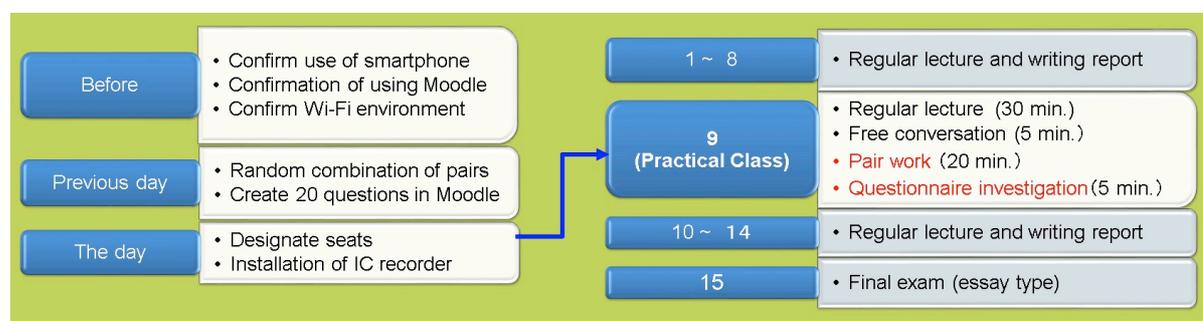


Figure 1: Flow chart of the study method.

## Results

### Outline of Results

The class with pair work consisted of 20 pairs with one group being a group of three to account for the odd number of students. There were no issues with the smartphones connecting to the network or with Moodle access and operation.

The results of the tests averaged 15.9 on a scale of 20, nearly 80% of the students answered the questions correctly (refer to Table 1). For questions concerning important keywords used in the lecture, they scored almost 100% correct. It appears that the lecture time, as short as 30 minutes, followed by a pair examination immediately afterwards concentrated on the lesson, resulted in high scores. However, the percentage of correct answers was less than 50% for questions with unknown terms in the question options or application-based questions that were asked based on the knowledge gained in the lesson.

Table 1: Outline of results.

	<b>n</b>	<b>Average</b>	<b>Min.</b>	<b>Max.</b>	<b>S.D.</b>
<b>Score</b>	<b>41</b>	<b>15.90</b>	<b>12</b>	<b>19</b>	<b>2.01</b>
<b>Time (sec.)</b>	<b>41</b>	<b>570.34</b>	<b>260</b>	<b>1083</b>	<b>208.93</b>
<b>Number of Utterance</b>	<b>41</b>	<b>53.54</b>	<b>24</b>	<b>93</b>	<b>18.52</b>
<b>Number of Utterance by time (min.)</b>	<b>41</b>	<b>5.81</b>	<b>3.58</b>	<b>9.70</b>	<b>1.47</b>

The time required for pair work was 20 minutes (1200 seconds), but the time it took to access the course problems on Moodle and send the final answer was about 9 minutes 30 seconds (570 seconds) on an average. The first students completed in about 4 minutes. It is necessary to add time for launching a web application from a smartphone by accessing Moodle, and logging in; however, it seems that about 15 minutes was appropriate for this portion. The student who answered in the shortest time used only 13 seconds per question, but there were more than 30 recorded utterances, suggesting that pair work was conducted. In future studies, it is necessary to analyze the content of each utterance, and it is important to make improvements such as adding essay questions and questions requiring internet research to the multiple-choice questions.

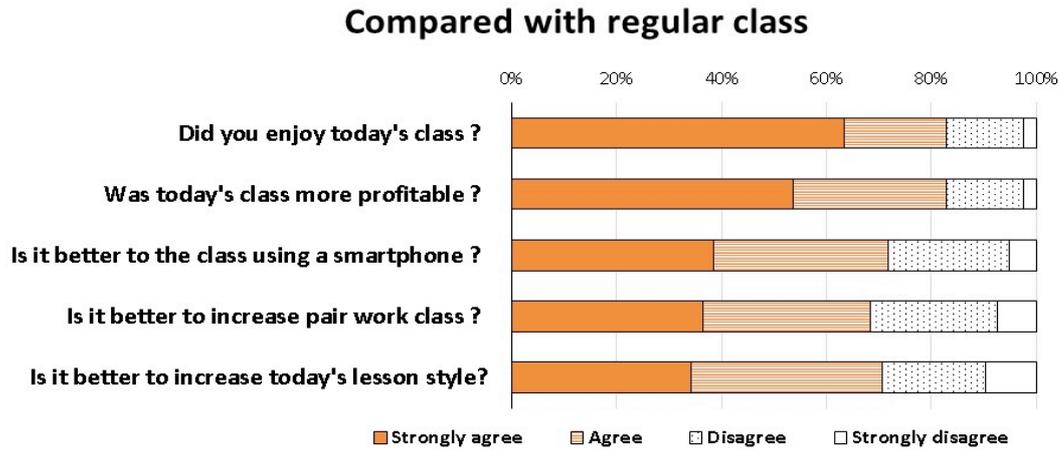


Figure 2: Questionnaire results on the practical class.

The total number of utterances was 53.5 on an average and 5.8 times per minute. This is within the expected range when compared to that of the number of utterances (pair Test 1—9.02 times/minute, pair Test 2—4.90 times/minute) during that pair work that was conducted by the authors (2014) with information literacy. However, the pair Test 1 is a problem given a problem and it changes the sentence of Word given based on it, and although it is close to the case where the problem sentence or choice is given in advance this time, the pair As for the reason why the number of utterances per unit is small compared to Test 1, we must wait for future conversation analysis.

### About the Method

According to the post-questionnaire about the class with pair work, 80% of students agreed or strongly agreed that the class was more enjoyable (refer to Figure 2). However, nearly 30% of students had negative responses to increasing pair work in class. This is considered to be an indication of anxiety that you cannot take it easy to reduce classes at a time because it is accustomed to an easy lesson of simultaneous lesson although it is admitted that this method is enjoyable and effect of learning is high. Especially in the case of liberal arts subjects, motivation towards class tends to be low, so it seems that such opinions were seen although it is a small number.

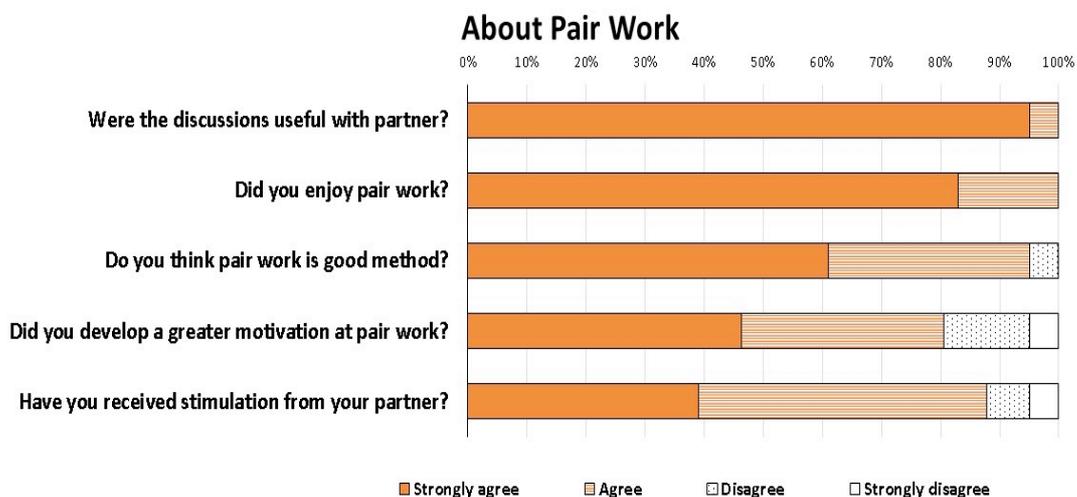


Figure 3: Questionnaire results on pair work.

### About Pair Work

The student’s evaluation of pair work is as shown in Figure 3. Everyone who completed the practical lesson enjoyed it and reported having useful discussions with their partner. In addition, the majority of opinions were positive regarding the ease of answering, the method of pair work, the deepening of understanding, and the growing motivation for learning. Furthermore, 95 percent of the students were inspired by their partner. From these facts, it is clear that pair work is extremely effective for students.

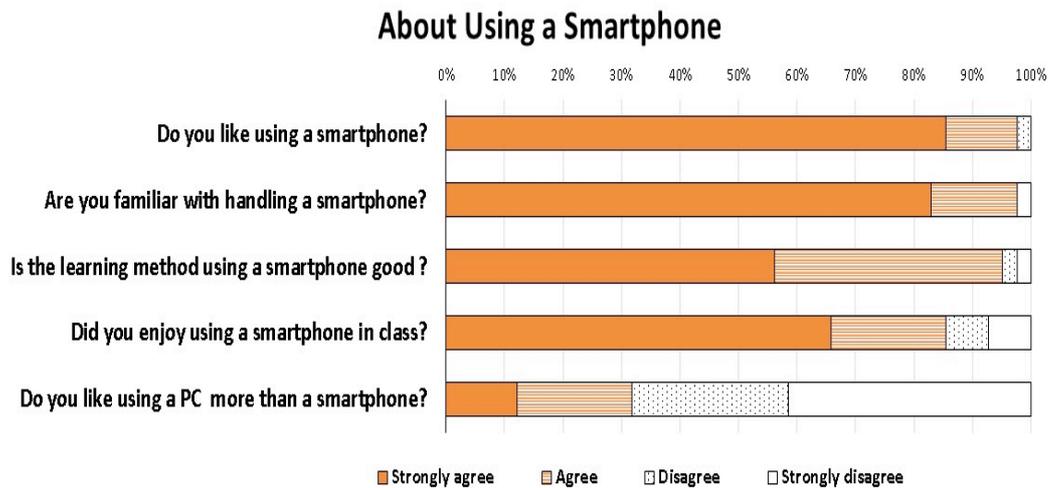


Figure 4: Questionnaire results on using smartphone.

### About Using Smartphone

In general, the students had a positive response to using their smartphones. According to the questionnaire results, most students enjoy using smartphones, and there appears to be no concern about classes utilizing smartphones. More than 95% of students answered that the pair work was a good way to use smartphones in classes. In comparison to PC, only about 10% of students want to use a PC, and about 70% of the students say that smartphones are more useful than a PC. It appears that the use of smartphones in classes will be supported by students.

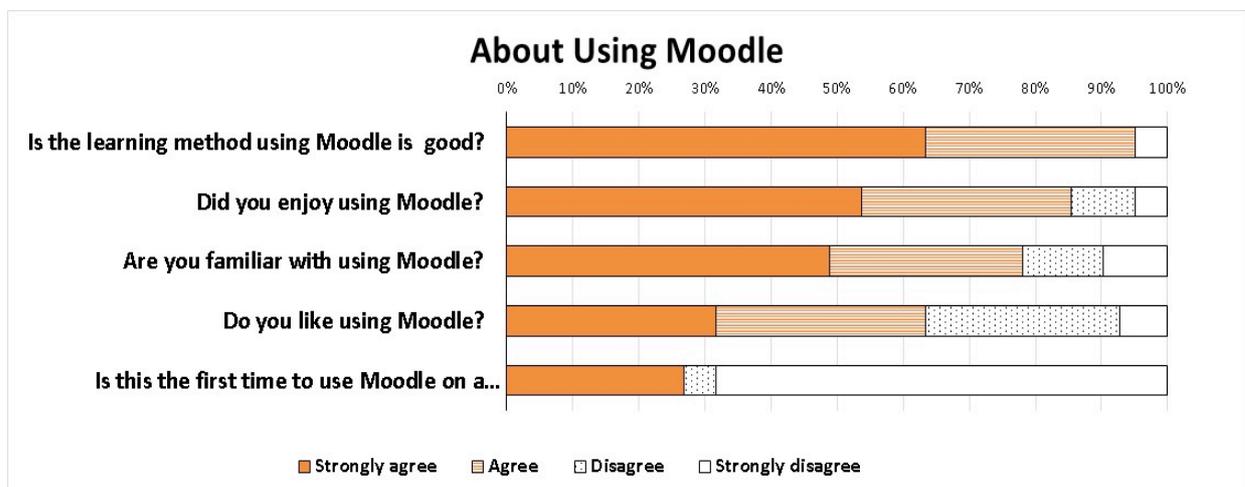


Figure 5: Questionnaire results for using Moodle.

## About Moodle

Moodle and smartphone use was popular among students, and 97% of the responses were positive. Over 80% of students responded positively to using Moodle. Also, over 70% of students have used Moodle on smartphones. However, unlike smartphones, about a third of students remember feeling resistance to using Moodle. Therefore, it appears there is a need to make Moodle appealing in the future.

## Discussion

Based on the above results, it appears that the practical lesson was able to be conducted almost as intended. Looking at the free response column of the post-questionnaire, similar to that of the results of the questionnaire of the selective questions, there were many positive descriptions for this lesson as that of the following examples: "I enjoyed having a new form of class that I have never had," "I think that it was good to talk with people who do not usually speak," "It was good that I was motivated to cooperate with nature and challenge the problem because it was a pair work."

However, some students say, "Though it is good for contents with definite content, thought that question with no answer of type that deepens ideas by deep discussion is good," many of the conversations are devoted to checking the answer and it is inevitable that the deep learning was not done. In the future, it is necessary to incorporate problem forms for which the answer can only be obtained after investigation and discussion in pairs.

Although there was no opposition to pair work, there were a few criticisms about smartphone usage such as "As moodle was a bit hard to read on a smartphone, it is better to use question paper if possible," or "I wanted to write on paper rather than using a smartphone." Therefore, we must further investigate whether to use smartphone or to use question papers.

## Conclusions and Future Study

As a result of practicing pair work using smart phones in liberal arts classes, the following conclusions can be made.

- 1) There were no issues with the use of smartphones, access to Moodle, operation, or operation of Moodle. The class was able to proceed smoothly almost as planned, with a generally favorable response from students.
- 2) The time required for pair work was about 9 minutes and 30 seconds on an average. The fastest students finished in about 4 minutes, and most of the pair discussion was confirmation of answers. In the future, we will add questions requiring more discussion to the multiple-choice questions.
- 3) Although there were no objections to pair work from the free response of post questionnaires, there were some critical responses about smartphone classroom usage, so it is necessary to further examine the use of smartphones. In the future, we will reexamine the problems of 2) and 3), proposing a more effective learning method, and plan to apply it to approximately 100 adult classes.

## **Acknowledgement**

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***Fostering Logical Thinking, Empathy, and Creativity by Reading Literary Texts:  
A Neuroscientific Approach***

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**Abstract**

This paper aims to show that reading literary texts is an effective means of fostering logical thinking, empathy, and creativity, all of which are essential for students to be good citizens in the world, persons who can appropriately address various and concrete issues, understand other cultural values, and solve unpredictable problems in a flexible manner in today's globalizing world. Drawing on the studies of neuroscience regarding these three abilities, the current paper elucidates the correlation between their enhancement and reading literary texts. Neuroscience demonstrates that the brain region concerned with the inherent human capability of empathizing with others' emotions, which is called the "theory of mind," becomes active when a reader of a literary text becomes immersed in characters' inner worlds. Scientists also show that the left brain is specialized for logical analysis of detail, whereas the right brain is specialized for holistic, freely associative thinking and hence facilitates the moment of creativity. Given these findings, reading literature in the classroom proves a productive educational method: by reading literary texts in three different ways—that is, by examining the details of a text with close reasoning, by becoming steeped in characters' mental states, and by dynamically grasping the whole fictional world, which often includes conflicting ideas, —students can activate the brain regions related to logical thinking (the left brain), empathy (the theory of mind), and creativity (the right brain), thereby improving their abilities to cope aptly with problems, to understand others' feelings, and arrive at creative solutions.

Keywords: teaching literature, citizens of the world, neurobiological effects of reading, analytical reading, immersive reading, holistic reading

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## Introduction

Today, both in Japan and abroad, literature, or more generally the humanities and the arts, tend to be disappearing in curricula. In 2015, the Ministry of Education, Culture, Sports, Science, and Technology, Japan, published a document titled “National Universities’ Reform Plans,” suggesting that national universities should decrease or even nullify the number of faculties and departments of the humanities and art, leading to fierce opposition from the scholars in these academic fields as well as other disciplines. This Japanese educational tendency is part of the worldwide trend of undervaluing the role of humanities in education. Nussbaum (2010), a philosopher in the United States, succinctly points out the adverse situation in which the humanities presently finds itself: “The humanities and the arts are being cut away, in both primary/secondary and college/university education, in virtually every nation of the world. Seen by policy-makers as useless frills, at a time when nations must cut away all useless things in order to stay competitive in the global market, they are rapidly losing their place in curricula, and also in the minds of parents and children”(p. 2). Standing against the educational torrent of disregard for the humanities, Nussbaum insists on the importance of the liberal arts at every level of education, forcefully arguing that they can create good citizens of the world who have the abilities to think critically and to sympathize with others.

In spite of Nussbaum’s grave concern about the humanities being on its way to extinction in education, so far there has not been any serious discussion regarding the relevance of the humanities for pedagogy among the scholars of these disciplines. Although forums to treat the issue of the humanities in education have sometimes been organized by major academic conferences, such a topic has never sufficiently engaged the attention of the majority of researchers. As Batker, Osucha, and Rohrbach (2017), the editors of the pedagogy issue of *American Literature*, forthrightly remark in its introduction, “Why we teach what we teach is just as important as why we study what we study but is seldom discussed as a field-defining issue” (p. 213).

Nevertheless, as the current toward “cut[ting] away” of the humanities in education is being promoted with increasing strength in society, the discussion about the importance of teaching the humanities in the classroom has gathered more urgency. Nussbaum skillfully counteracts the educational movement toward dismissing the humanities from classrooms by demonstrating the pedagogical value of the humanities with a particular accent on how these disciplines enable children to obtain the abilities needed for critical thinking and sympathizing with others. Partially overlapping with Nussbaum’s argument, the essays collected in the pedagogy issue of *American Literature* also tend to emphasize that teaching literature is a productive critical practice that fosters students’ abilities to discern and actively tackle the problematic aspects of their societies, such as class/gender/race inequalities.

While agreeing with Nussbaum and the writers discussing pedagogical issues in *American Literature* in that the educational value of the humanities lies in how it fosters critical thinking, this paper aims to elucidate the importance of teaching the humanities, or more particularly literature, from a different perspective, thereby arguing against the currently prevailing view of the humanities as useless, apparently rendering it unnecessary in education. That is, this paper will demonstrate that reading

literary texts can foster not only critical thinking but also logical thinking, empathy, and creativity, and these three abilities, like critical thinking, are essentially required for students to be good citizens of the world.

Logical thinking is first of all needed for students to deal with an issue, because logical analysis is the most fundamental method of understanding. In fact, students need the ability to think logically in order to examine closely and comprehend precisely, and thereby appropriately address various concrete problems emerging in today's globalizing world. To be certain, as the humanities scholars often emphasize, nurturing critical thinking is extremely important in education. However, critical thinking cannot function well without rigorous analysis, and it is only after this basic practice of comprehension that one can think critically.

Second, students also need to feel empathy for others in order to understand other cultural values and cope with the diversity of the world. Although my argument is here akin to Nussbaum's insistence on the importance of fostering sympathy in education, the word "empathy" is deliberately used, and is not exactly the same as Nussbaum's "sympathy." Nussbaum uses the word "sympathy" more frequently than "empathy" in her argument for the need for cultivating imagination, and these two words, for her, signify the same thing, that is, the ability to imagine others' inner worlds. However, "*empathy*," in its word origin, suggests the act of throwing oneself *into* others' mental worlds, pointing towards a stronger identification with others than "*sympathy*," which suggests the act of feeling *with* others. Hence, I intend to use "empathy" to argue that it is this extremely strong feeling of being one with others that literature can actually foster, thereby effectively highlighting the vigorous force of literature to create competent citizens capable of navigating through, or even merging *into* the multicultural world.

Third, students need to be creative in order to solve unpredictable problems born out of the multi-faceted, swiftly changing current of today's globalization in a flexible manner and with new combinations of ideas. Logical thinking and critical thinking are reality-based, concentrating on a particular, concrete issue, whether the goal is accurate comprehension or active assessment with the use of one's own perspective. By contrast, creative thinking appropriates imagination, fantasy, and free and broad association, sometimes ignoring logic, thereby arriving at unusual, even seemingly unrealistic, but surprisingly superb solutions. Fostering not mere fantasy but creativity is hard work, because a creative solution, hitting the target more appropriately than an exclusively logical solution, cannot be achieved without the exquisite mixture of logic and illogic, and hence it demands that the brain should work in a highly complex manner. However, as I will show later, creativity can be nurtured by a particular way of reading literary texts.

In the following section, I will elucidate *how* teaching literature can be an effective means to educate students to be good citizens of the world, people who are able to think logically, empathize with others, and be creative. I will argue that three types of readings of literary texts can enhance these three abilities: analytical reading can improve logical thinking; immersive reading can increase empathy; and holistic reading can augment creativity. In demonstrating the educational usefulness of literature in this manner, I will draw on the studies of neuroscience regarding logical thinking, empathy, and creativity, and elucidate the correlation between the

enhancements of these abilities and reading literary texts from the perspective of biological science.

### **Analytical Reading and Logical thinking**

First, I will show how analytical reading can nurture logical thinking. Analysis is usually central to reading in the classroom. For example, The Common Core State Standards (2010), a major educational reform plan in the United States that has been adopted by many states, emphasizes the importance of reading in the classroom, encouraging students to read works of literature along with works of different kinds, such as non-fiction and informative texts. According to this educational standard, to read is to analyze: “Read closely to determine what the text says explicitly and to make logical inferences from it. . . . Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.” Here, the Standards claim that students should analyze the details of a literary text to determine logically what the text conveys explicitly, but that students should also analyze closely and determine connotative, figurative meanings. Connotations and metaphors usually evoke indeterminably multiple meanings and many readers feel that such ambiguity is the very attraction of literature. Nevertheless, the Standards demand that students analyze and determine even such subtly suggestive meanings of a text. This educational policy has not been positively appreciated among the humanities scholars. As is seen in Ender and Lynch’s survey of the humanities’ researchers’ various responses to the Standards in *PMLA* (2015), they often question the kind of reading that the Standards encourage students to practice, regarding it as the activity of forensically hunting for the “true meaning” (p. 541) of a text, thus rendering it a set of mechanical skills. From this perspective, this reading never fosters “creative dreamers” (Ender & Lynch, 2015, p. 544). However, creativity never emerges from mere dreaming or fantasizing. As neuroscientists argue, when one is trying to be creative, one needs to “concentrate but at the same time let the mind wander” (Kandel, 2012, p. 483), that is, one needs both the rigorousness of analytical thinking as well as free imagination. This is perhaps because concentration on the details of a target problem leads to the generation of numerous strands of thought—numerous brain circuits for processing information, which enable the brain to play freely and broadly with multiplying ideas. Thus, close and rigorous analysis produces a fertile ground for triggering the moment of creativity. I have observed that thinking analytically is the basic form of understanding; moreover, it is an important “*preparatory phase*” (Kandel, 2012, p. 483) for reaching a creative solution.

This analytical reading is closely tied to the workings of the left brain, because many scholars agree that logical analysis of details is the specific work of the left brain. Neuroscientist Kandel (2012) observes that “the left hemisphere is specialized for analytic organization, . . . being oriented to detail” (pp. 474-475); physicist Kaku (2015) stresses that “the left brain is more analytical and logical” (p. 37); and The Nobel Assembly at the Karolinska Institute (1981) states that “the left hemisphere is concerned with logical analysis of details.” This view of the left brain stems from Roger Sperry’s Nobel-winning research, which showed that the left and right brains have different, specific functions through experiments on so-called “split brain” patients whose connections between both brain hemispheres, termed *corpus callosum*, had been severed due to the surgical treatment for a special kind of epilepsy. Isolated,

each brain hemisphere revealed its own characteristic nature: while the left brain was analytical and logical, the right brain dynamically grasped complex relationships (Kaku, 2015; Kaufman et al., 2010; The Nobel Assembly, 1981). Therefore, if the left brain is thus specialized for logical analysis of details, analytical reading is most likely to activate the left brain and thereby enhance logical thinking. This possible result is important for students, because this thinking is the fundamental form of understanding, and students need it in order to minutely examine and accurately comprehend in order to appropriately deal with various concrete situations of today's globalizing world. Moreover, as we have seen, logical thinking is required for being creative. Although creativity is also indispensable for students to survive the present world, they first need to be analytical in order to be creative.

However, there is no doubt that logical thinking alone is not sufficient for students to be good citizens of the world. They need other abilities such as empathy and creativity, and these two abilities can be nurtured by two other kinds of reading—immersive reading and holistic reading. Now we will proceed to look at these two readings.

### **Immersive reading and Empathy**

Immersive reading is the immersion of oneself in fictional characters' inner thoughts. Perhaps when we open a book for the first time as young children, all of us read it in this way. Even as adults, many of us find immersion into the mental states of fictional characters to be the most enjoyable sort of reading. In fact, most students in my "Art and Neuroscience" course agree that when reading fiction, they primarily enjoy becoming one with characters and experiencing the fictional world as if it were another reality. Some of them even confessed that they became so deeply steeped in their novels that they continued to read all night without having dinner and without thinking about anything else. These experiences of both children and adults in reading fiction suggest that the immersive fiction reading is quite a natural type of behavior for us. It is indeed natural, because this reading is closely linked to our inherent tendency to empathize with others (Zunshine, 2006).

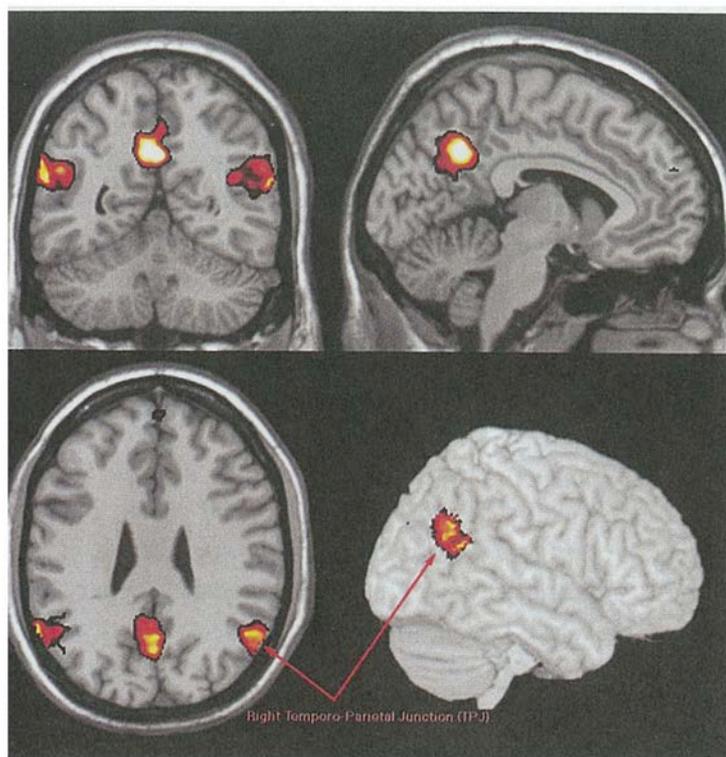


Figure 1: The Main brain region responsible for the theory of mind is the temporal-parietal junction. Source: Kandel, 2012

Immersion into others' inner thoughts is called "empathy." Neuroscientists argue that empathy is a unique, innate capability of human beings, demonstrating that human beings have indeed a neural mechanism for empathy, which they call "theory of mind" (e.g., Gallagher & Frith, 2003). As the figure 1 shows, the main part of the theory-of-mind network is located in the temporal-parietal junction (red) including the temples and the upper back part of the brain (Saxe & Kanwisher 2003/2005; Kandel, 2012). The brain region associated with the "theory of mind" becomes active when one empathizes with others' feelings, and it is also activated when one immerse oneself in fictional characters' feelings. Immersive fiction reading stems from the human instinct of empathy and it also arouses that impulse. Both are interactive.

There have been numerous studies of neuroscience and experimental psychology targeting the correlation between increase in empathy and reading literary fiction (e.g., Bal & Veltkamp, 2013; Kidd & Castano, 2013; Mar, Oatley & Peterson, 2009). For example, Tamir and his group (2015) offer a brain imaging sample that demonstrates that the brain area concerned with empathy becomes activated when one reads fiction and empathizes with characters. That is, the brain imaging in the figure 2 shows that when one reads the literary passages describing characters' mental states, the brain regions related to "theory of mind" become active. These regions (orange and green), technically called the dorsomedial prefrontal subnetwork, are the inner part of the front of the brain. Although the main brain region responsible for the "theory of mind" is the region around the temples and the upper back part of the brain, this inner part of the frontal area of the brain is also considered a part of the theory-of-mind mechanism. Moreover, the people undergoing the brain scanning and reading the passages containing characters' mental states also exhibit stronger morality and considerations for others in moral judgment tests than the people who do not read

such passages.

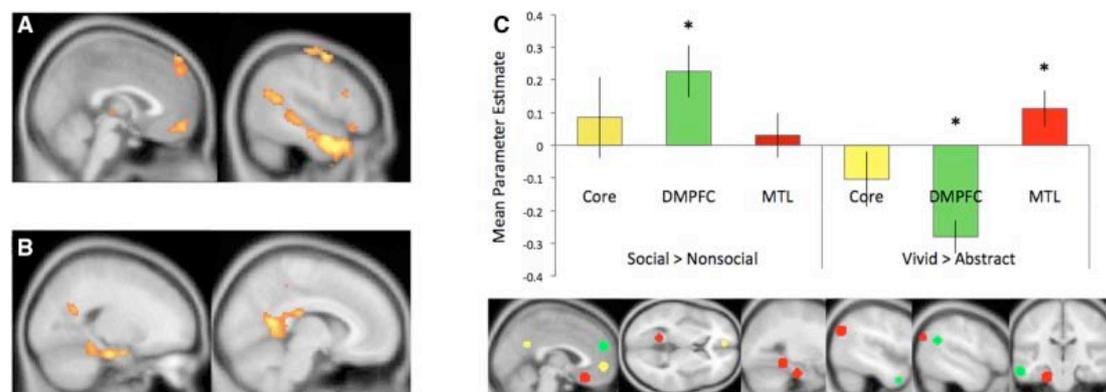


Figure 2: Immersive reading activates the brain regions involved in the theory of mind.  
Source: Tamir et al., 2015.

These two results of brain scanning and moral judgment tests suggest that immersive fiction reading can stimulate the brain region involved in the “theory of mind” and enhance empathy with others. Given these findings, we will see that immersive reading, like analytical reading, is important for students to successfully survive the globalizing world, because immersion into fiction can foster the ability to understand other cultures, thereby aiding in living harmoniously with them.

### Holistic reading and Creativity

Now we will look at the third, holistic reading. In contrast to analytical reading that focuses on details and the logic of a text, holistic reading embraces whole fictional worlds that might contain conflicting ideas and messages. Indeed, literature often shows contradiction and inconsistency, which many readers consider as its attraction. Connotations and metaphors produce such an intriguingly ambiguous aspect of literature or more concretely the coexistence of multiple, often conflicting meanings, but here I will focus on a whole literary text rather than on individual words and expressions. I will take up a major American novel, Mark Twain’s *Adventures of Huckleberry Finn*, to show that the whole world of a literary text often conveys opposing ideas and messages.

*Adventures of Huckleberry Finn* can be read both as a story of freedom and as a story of the impossibility of freedom. The novel’s hero Huck—Huck is a nickname of Huckleberry Finn—is an outcast child: he escapes from society to enjoy freedom on the raft going down the Mississippi River. Nevertheless, Huck is also always involved in the social world haunted by racism, class inequality, and the clash of opposing parties. Huck’s quest for freedom comes to a climax when he becomes willing to break social rules by deciding to “go to hell” (p.168) to save the fugitive slave Jim. However, after this climactic scene, the reader finds that Jim’s owner, not Huck, sets Jim free: Huck cannot actually rebel against society to save Jim. Thus, the whole novel describes both Huck’s quest for freedom and its impossibility. An analytical reading would focus on the details of the particular phase such as Huck’s freedom and ignore other parts contradicting the theme of freedom. However, a holistic reading

grasps the whole world of the novel and entertains the coexistence of logically incompatible stories in it.

This holistic reading can activate the right brain, because, since Sperry's demonstration of the isolated right brain's peculiar world wherein, as we have seen, the complex aspects of things are dynamically grasped, it has been widely recognized among neuroscientists that the right brain is also holistic, and broadly associative, and capable of freely linking various, apparently unrelated ideas (e. g., Kandel, 2012; Kaufman et al., 2010). Mark Jung-Beeman (2005) forcefully articulates this view by focusing on the different cellular forms of two brain hemispheres (Figure 3). Jung-Beeman maintains that the left brain is highly sensitive to narrowly focused semantic areas, whereas the right brain concerns itself with large, diffusive, and overlapping spheres of information (a, b). This is because the neurons (brain cells) of the two hemispheres have different shapes: neurons in the right brain possess longer dendritic branches (receivers) and more synapses (pathways) of incoming information than those of the left brain (c, d). This enables the right brain to "receive a broader and more overlapping field of inputs" (Jung-Beeman, 2005, p. 514) than the left brain.

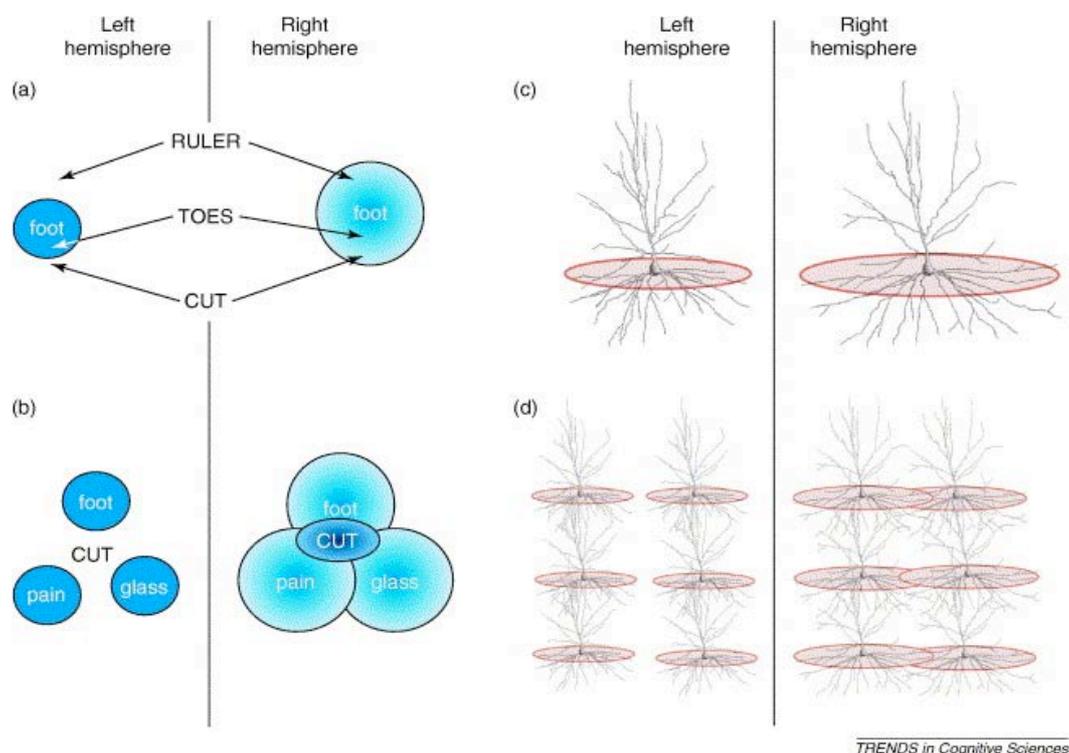


Figure 3: Neurons of two brain hemispheres have different shapes.  
Source: Jung-Beeman, 2005

It is this right brain with its broadly associative power that can facilitate the moment of creativity (Kandel, 2012; Kozbelt et al., 2010). In fact, the figures 4 and 5 show that the right brain becomes active when one gains insight. The graph in figure 4 indicates that the part of the right brain marked in red and yellow, which is termed the right anterior superior temporal gyrus, is more greatly activated at the moment of insight than at the moment of non-insight (Bowden et al., 2005; Kandel, 2012). The red line in the graph jumps at the moment of insight; yet the blue line, indicating the right brain's activity when it does not gain any insight, shows no significant change.

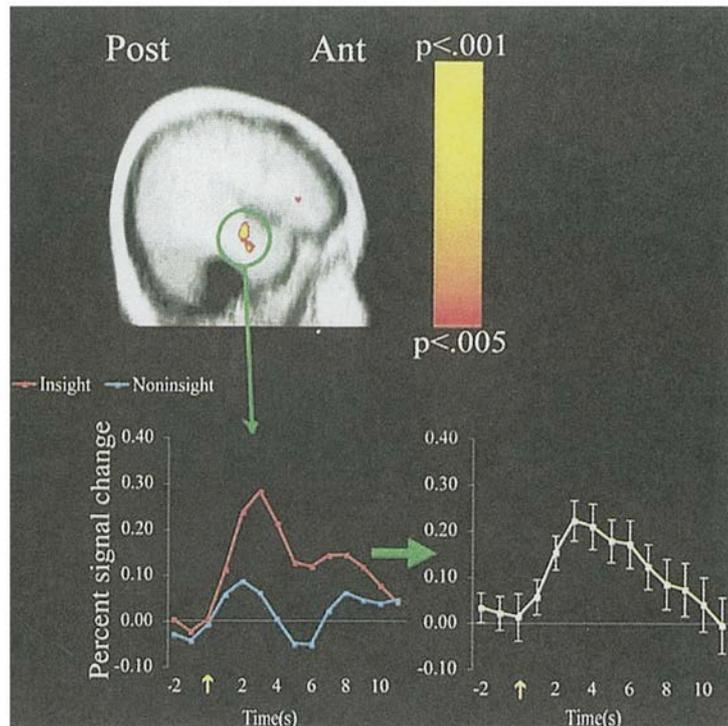


Figure 4: The right brain at the moment of creative insight (1)  
 Source: Kandel, 2012

The figure 5 also signifies that the same part of the right brain shows high-frequency activity—that is, a strong response—when one gains insight (Jung-Beeman et al., 2004; Kandel, 2012; Kounios & Beeman, 2009). Thus, the right brain’s power to make unusual combinations of widely distant, even incompatible ideas leads to the emergence of creativity, and if this is the case, holistic reading can activate the right brain and increase creativity, because it also entertains the combinations of incompatible meanings that permeates the whole fictional world, playing with “Janusian thinking” (Ward & Kolomyts, 2010, p. 101).

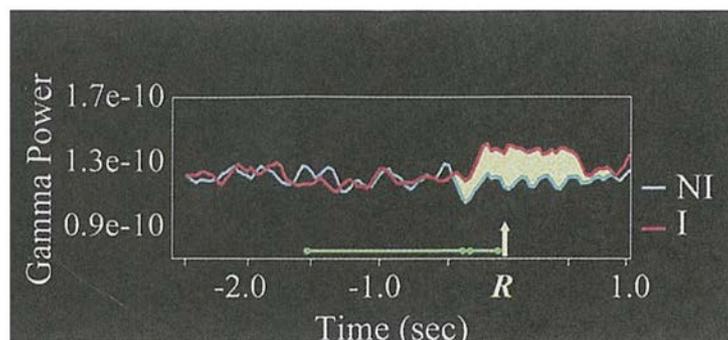


Figure 5: The right brain at the moment of creative insight (2)  
 Source: Kandel, 2012

Thus, by reading literary texts holistically, students can foster the ability to think creatively. No one denies that creativity is as important for students as logical thinking and empathy, or that it may be even more urgently needed than the other two

abilities. In the face of the increasing unpredictability of the present world, students need to be able to think flexibly and creatively and to solve diverse, unfamiliar problems with unconventional combinations of ideas.

However, there is no doubt that holistic reading as a source of creativity is more difficult to practice as compared to the other two readings. Immersive reading may be the easiest task among the three readings, because we are inherently inclined to empathize with others. Moreover, analytical reading is not hard to practice. Analysis is a basic skill at comprehension that can be systematically acquired in school. On the other hand, the ability to grasp a whole fictional universe including numerous inconsistencies cannot be obtained by merely following an instinct or through mechanical training. Holistic reading first conducts rigorous analysis of the details of a literary text, thereby engendering myriad possible interpretations, and then, far from disregarding the readings that contradict the apparent main theme of a text, enjoys navigating through the vast sea of multiplying and conflicting meanings covering the whole fictional field. This reading can be said to be an extremely skillful, expert reading. However, this reading can be achieved with the help of analytical and immersive readings. With the increase of empathy with characters, one desires and endeavors to understand the fictional world more deeply. Carrying out a thorough, logical analysis would lead to the generation of numerous possible explanations of a text and thus to the full enjoyment of the complexity of the whole literary work. Therefore, what is required in teaching the three readings that I have shown so far is to connect them together. Even if the most desirable result is for students to achieve the holistic, expert reading and thereby gain the ability to think creatively, the most effective way to enable them to attain that goal is to teach them to read the same literary text in three different ways, to become a simultaneously analytical, immersive, and holistic reader.

## **Conclusion**

I have proffered the possibility that three types of readings of literary texts, that is, analytical reading, immersive reading, and holistic reading, can activate the brain regions related to logic (the left brain), empathy (theory of mind), and creativity (the right brain), and thereby increase these three abilities. From this perspective, teaching literature in the classroom proves a useful and productive educational method: by reading literary texts, students can gain the abilities crucial for a good citizen of the world. As I have observed in the introduction, literature, or more generally, the humanities and the arts, are vanishing in curricula both in Japan and abroad. However, as I have explored with the help of the arguments and data from neuroscience, literature can have an important educational value. Far from being cut away, literature should be given more importance in the classroom.

Regarding future directions of this research, it will be necessary to obtain more evidence for the correlation between reading literary texts and the enhancement of logical thinking, empathy, and creativity. I have argued that reading literary texts can improve these three abilities. Although in order to strengthen my argument, I have employed evidence and data from the studies of neuroscience, it will also be necessary to gain evidence for myself by conducting psychological tests and interviewing participants, and, if possible, by performing fMRI (functional magnetic resonance instrument) experiments and examining the brain images of participants.

Moreover, it will be necessary to explore more fully the particular relation between reading fiction and creativity. There are numerous neuroscience investigations into the link between reading fiction and the increase of empathy, whereas studies on the causal relation between reading literary texts and the activation of the right brain as a source of creativity are very few. Given this trend, I will focus mainly on the possibility that reading fiction can stimulate the right brain to produce the moment of creativity in order to enrich this research field that has not yet been sufficiently explored.

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***A Study of Open Courseware's Learning Effectiveness on E-Book Production  
Professional Technique Competence for Design-related Department Students***

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**Abstract**

This study intended to use the development of a set of industrial technique oriented open courseware for E-Book production, as well as applied the open courseware as the Blended Learning to conduct a teaching experiment, in order to improve students of design-related departments for their E-Book Production competency, as well as satisfy with industries' demand for talents. This study applied methods, such as Meaningful Learning and Focus Group, Field Research and DACUM (Developing A Curriculum), to develop contents of open courseware for 「E-Book production」, and then conducted the teaching experiment of investigating the learning effectiveness of the open courseware on their E-Book Production professional technique competency for design-related department students. As a result, the researcher also analyzed the data of students' 「E-Book Production」 open courseware as the direction to revise the content of open courseware.

Keywords: open courseware, E-Book production, professional technique competency

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## Research Motive and Purpose

This study intended to apply the meaningful learning as a basis to develop the “eBook Production” open course, and transmit new knowledge upon students’ prior knowledge, in order to upgrade their competence of the eBook Production, as well as cultivate them to have a better self-learning attitude in the future, and further develop high-level competence for them, such as: the knowledge application, analysis, comprehension and evaluation competences of Bloom’s Taxonomy (Sams, A. & Bergmann, J., 2013); in addition, to shorten the difference between supply and demand for schools and industries as stated in this department’s prerequisite, as well as achieve the goal of cultivating talents and elites that match with industries’ demand.

The purpose of this study is to develop the “eBook Production” open course and conduct the teaching experiment to evaluate the learning outcomes, as well as further to improve students of design-related programs in technical and vocational schools for their professional practical competence and self-learning competence in “eBook Production”. Specific purposes are as follows:

- (1) Investigate the work procedure and content of the “eBook Production” for the digital content industry.
- (2) Investigate the standard operation procedure (SOP) and indicator of recording “eBook Production” open course.
- (3) Investigate the professional practical competence “eBook Production” students’ learning outcomes.

## Literature Review

### (1) eBook Production Work Procedure and Content

Technological advancement brought a rapid development in Cloud technique and digital device, as well as changed consumers’ methods of collecting news information and reading behavior. Therefore, the traditional publishing industry has to transform along with the change in industrial structure, thus there’re many new type digital publishing business models came out.

According to the survey of Taiwan Digital Publishing Forum (2013), Taiwan has at least 20 companies of developing platform, distributors and hardware for digital publishing. Although many software and hardware companies actively invested in the digital publishing market, and the acceptance and popularity of smart phone and pad computer also encouraged publishers to provide the digital publishing products; however, the data showed that related revenue of Taiwan’s digital publishing in 2013 was still lower than 1% of the publishers’ total revenue, thus there is a long way to go comparing to the maturing markets in Europe and America.

Rapid development in technology has activated the trend of digital reading globally, Taiwan possessed a powerful hardware strength and foundation in the eBook reader industrial chain, as well as the eBook content industry has the advantage of the same language and same race for the development in China market, thus it should not be neglected the business opportunity of future digital reading software and hardware related industries.

## (2) Open Course Content

Open course is a simple knowledge sharing behavior, and open to users for making revision and resource reuse by related licensing clauses (Baldi, Heier, Stanzick, 2002). At first, this concept has been advocated by organizations, such as William and Flora Hewlett Foundation, and Andrew W. Mellon Foundation and M.I.T, to carry out the teaching resource sharing (Chang, C. Y., & Hong, H. Y., 2014).

In 1999, U.S. Massachusetts Institute of Technology (MIT) proposed the knowledge sharing program in the conference on education and technology, and in 2001 MIT has practically applied it to the Internet platform which allowed users to obtain high-quality digital teaching materials and resources of related courses directly through the network platform; in addition, it is available freely in the network platform with using, learning and sharing for people from all over the world (MIT, 2010).

Open course is intended to open and share knowledge, but is usually misunderstood to be opened with a complete course. However, open course is not providing course, but providing with the self-learning resource and knowledge by schools directly. Self-learners can make self-learning target, and decide their own learning method and content. Open course is opened to all users freely with school courses and resources; therefore, the clarification of the intellectual property rights is very important, it has to obtain the licensing authorization from teachers, book publishers and related resources, then open all resources. Typical open course is not offered degrees, credits, certifications or the opportunities of contacting professors. With the open licensing to provide all materials to all students, self-learners and researchers from all over the world to use, reuse, revise, translate and transmit in non-commercial methods. As a result, it is different from remote course, correspondence course and online course (Yang, H. C., & Sun, Y. C., 2013; Chian-Hua Wang, Cheng-Ping Chen, Shi-Ze Hu, 2013).

## (3) Open Course Types

MIT is the pioneer of open course that has successfully promoted this open education idea to all over the world and got positive response. Its operating type has got many attentions, and there're other countries' education authorities began to imitate successively that made open course turn to a global open course movement, and many countries and international organizations started to share their educational resources (Taiwan Open Course Consortium, 2008; Liu-Xing Wu, Jerry Sun, Wei-Yi Lee, 2013). After organized current major domestic and foreign open course websites, this study is divided open course into 3 types, including the screen recording, practical teaching and animation post-production, and for the pre-developing course content with matching this program, as well as it will use the screen recording.

## (4) Learning Outcomes Assessment

Comparing to the traditional teaching, whether or not Internet-based remote teaching has better teaching outcomes, which is always a worth concerning question. In previous literature, there're many scholars who had researched the outcome evaluation of various teaching experiments, and most research results showed a positive support for online learning outcome, such as the investigation of the impact

of the online asynchronous-aided teaching on the learning outcomes, and the research results supported the online asynchronous-aided teaching that is helpful for learners' learning outcomes (Chih-Pin Hsu, 1998). However, it did have difference in the determination of choosing assessment indicator for learning outcome, and analytic methods of assessing outcomes (Yi-Nung Yang, Hui-Chih Tsai, 2002).

For researches of learning outcome by using network teaching, except comparing to traditional learning outcome, it can analyze through online learning behavior (Nian-Shing Chen, Kan-Min Lin, 2001; Hsiu-Ping Yueh, 2001; Scott et al., 2000). Thus before carrying out online learning, it needs to build an online assessment system at the same time to focus on whether or not students would have learning outcomes on their outcomes assessment, or is it suitable to be the content of online learning or not.

## **Research Method and Implementation**

### **(1) Research Method and Subject**

This study will investigate the working procedure and content of eBook Production for the digital content industry to develop the open course recording to be the basis of quality inspection indicator for the "eBook Production" open course recording, and specific methods are as follows:

#### **1. Focus Group**

With the organization of literature, this study will adopt the focus group method to summarize the technical connotation of eBook Production for the digital content industry, and further to verify and clarify the information of related subjects in this study, as well as doubts that need to be proved. In addition, this study chooses various experts and scholars of the digital publishing areas, and understands their viewpoints through discussion. In order to make clarification and understanding as follows:

- (1) Difference between the current industrial demand and the teaching content of "eBook Production" in technical and vocational schools.
- (2) Recording SOP of "eBook Production" open course.
- (3) Quality inspection indicator for "eBook Production" open course recording.

#### **2. Field Interview**

Through field interview, this study interviewed several experts, scholars and teachers from related areas to understand the SOP and indicator for "eBook Production" open course recording.

This study invited senior teachers with many teaching experiences to conduct the digital course recording in accordance with 15 frequent errors, teachers used pad computer and external plug-in microphone to use computer to lecture the course, as well as use the screen recording software to record their handwriting and voice lecture at the same time to be the video file.

### 3. Quasi-experimental Study

With choosing Grade 11 students who are taking the professional internship course of “Computer Editing Design” as the experiment subjects, and divided them into the experiment group and control group, as well as use the post-testing group design method to carry out the 4-week quasi-experimental teaching study.

#### (2) Research Tools

In order to achieve the research purpose, according to the data from literature, this study drafted the interview outline and use tools that to be used in interview, and the content of interview outline and using tool are as follows:

1. Working procedure and content interview outline of “eBook Production”
2. SOP interview outline of “eBook Production” open course recording
3. Assessment Scale

#### (3) Data Processing and Analysis

##### 1. Qualitative Analysis

About the data collected from the focus group, field interview and DACUM expert meetings and conferences, it will be firstly processed by organize the transcript to summarize the interview record. By using the Ground Theory, it has gradually adopted the meaningful learning to develop the “eBook Production” open course.

##### 2. Quantitative Analysis

This study used the analysis of variance (ANOVA) to compare the difference between students who accepted blended teaching and traditional classroom learning in eBook Production learning outcomes.

### **Data Analysis**

To understand whether or not students of experiment group and control group have difference in their professional and practical competence and skills of eBook Production, it used the total learning outcomes of these students’ aspects: eBook editing skills, image layout and text layout, to conduct ANOVA, in order to investigate any significant difference between experiment group and control group in eBook Production techniques.

#### (1) Aspect 1: Comparison of learning outcomes for eBook Editing Skills

Investigate Aspect 1 for these students of experiment group and control group in professional and practical competence and skills of eBook Production: is there any difference in eBook editing skills, thus conducted ANOVA for these students’ eBook editing skills in these 2 groups, the ANOVA result of learning outcomes indicated in Table 4-1 that showed a significant difference between these 2 groups, students of control group had better learning outcome of eBook editing skills than experiment group ( $F=10.456$ ,  $P=.002$ ).

Table 4-1 Experiment Group and Control Group eBook Production Aspect 1: eBook editing skills ANOVA result of learning outcome

Group	Member	Average Score	Standard Deviation (S.D.)	F	P
Experiment Group	43	2.440	2.006	10.456**	.002
Control Group	27	3.860	1.946		

\* $p < .05$  \*\* $p < .01$  \*\*\* $p < .001$

### (2) Aspect 2: Comparison of image layout's learning outcome

Investigate Aspect 2 for these students of experiment group and control group in professional and practical competence and skills of image layout: is there any difference in image layout, thus conducted ANOVA for these students' image layout in these 2 groups, the ANOVA result of learning outcomes indicated in Table 4-2 that showed a significant difference between these 2 groups, students of control group had better learning outcome of image layout than experiment group ( $F=8.583$ ,  $P=.004$ ).

Table 4-2 Experiment Group and Control Group eBook Production Aspect 2: eBook editing skills ANOVA result of learning outcome

Group	Member	Average Score	Standard Deviation (S.D.)	F	P
Experiment Group	43	2.070	1.587	8.583**	.004
Control Group	27	3.190	1.883		

\* $p < .05$  \*\* $p < .01$  \*\*\* $p < .001$

### (3) Aspect 3: Comparison of text layout's learning outcome

Investigate Aspect 3 for these students of experiment group and control group in professional and practical competence and skills of eBook Production: is there any difference in text layout, thus conducted ANOVA for these students' text layout in these 2 groups, the ANOVA result of learning outcomes indicated in Table 4-3 that showed a significant difference between these 2 groups, students of control group had better learning outcome of text layout than experiment group ( $F=7.763$ ,  $P=.007$ ).

Table 4-3 Experiment Group and Control Group eBook Production Aspect 3: text layout ANOVA result of learning outcome

Group	Member	Average Score	Standard Deviation (S.D.)	F	P
Experiment Group	43	1.690	1.564	7.763**	.007
Control Group	27	2.680	1.634		

\* $p < .05$  \*\* $p < .01$  \*\*\* $p < .001$

(4) Comparison of the total learning score for professional and practical competence and skills of eBook Production Investigate Aspect for these students of experiment group and control group in professional and practical competence and skills of eBook Production: is there any difference in eBook editing skills, image layout and text layout, thus conducted ANOVA for these students' total learning score of these 3 aspects, the ANOVA result of learning outcomes indicated in Table 4-4 that showed a significant difference between these 2 groups' total score of skill learning for professional and practical competence and skills of eBook Production, students of control group had better total learning score of professional and practical competence and skills of eBook Production than experiment group ( $F=10.855$ ,  $P=.001$ ).

Table 4-4 ANOVA results of the total learning outcome for eBook Production and skills between experiment group and control group

Group	Member	Average Score	Standard Deviation (S.D.)	F	P
Experiment Group	43	2.067	1.566	10.855**	.001
Control Group	27	3.243	1.660		

\* $p < .05$  \*\* $p < .01$  \*\*\* $p < .001$

To sum up, aspects of professional and practical competence and skills of eBook Production for students of the experiment group and control group are: eBook editing skills, image layout and text layout, the ANOVA results of the total learning outcome showed that experiment group and control group have aspects of eBook Production skill: eBook editing skills, image layout and text layout, which the total learning outcome has a significant difference, and the control group had better aspect than experiment group for the total learning outcome of eBook Production.

## Conclusion

### (1) Working Procedure and Content of eBook Production

By organizing the data of the focus group discuss and literature review, this study researched and summarized the working procedure and content for the “eBook Production” of the digital content industry as follows:

1. Image and text data organization: includes the organization of image and text files.
2. Build file: includes the building new file, setting file size, setting file format and setting the flip-over direction.
3. Arrange types and sequence: includes the arrangement of chapters sequence and management of the page number setting.
4. Build the main format: includes the design and arrangement of main format.
5. Build format: includes the building of character font, paragraph type, object type and form type.
6. Build the layout structure: includes the image and text layout, arrange the reference line, setting the column, color arrangement and setting the table position.
7. Insert image and text: includes the inserting image and text, filling content in table and design the related image.
8. Image and text combination: includes the applying format, setting the Text Wrap and adjust the text layout.
9. Setting interact effect: includes the setting of interaction function.
10. Output preview: includes the storage file and preview.

### (2) Recording SOP and Indicator of eBook Production” Open Course and Students' Learning Outcomes

By organizing the data of the focus group discuss and field interview, this study is further drafted the SOP and indicators for “eBook Production” open course recording as follows:

1. Shooting Errors: It contains 5 indicators, including File Storage Management, Text and Form Setting, Image Setting, Interaction Setting and Tool Panel Setting.
2. Explain why the shooting errors occurred: It contains 5 indicators, including File Storage Management, Text and Form Setting, Image Setting, Interaction Setting and Tool Panel Setting.
3. How to solve it: It contains 5 indicators, including File Storage Management, Text and Form Setting, Image Setting, Interaction Setting and Tool Panel Setting.
4. Solving method: It contains 5 indicators, including File Storage Management, Text and Form Setting, Image Setting, Interaction Setting and Tool Panel Setting.

### (3) Professional practical competence “eBook Production” students' learning outcomes.

Through the experimental teaching conducted after the evaluation results, Control group in e-book production professional practical ability to learn better than the experimental group, It shows that the "e-book production" open course has not been effective in learning the skills and skills of e-book production students. For the results of this study, in the future can be further targeted experimental subjects, the size of

the sample and the content of the course of the impact of such factors, To clarify the effectiveness of open course for learning in the field of skills.

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## *International English in Context: Which Pedagogies?*

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### **Abstract**

In its unmissable spread as the international language for communication by excellence, the English language is a classified detectable entity which is both product and agent of the global interconnected world. Deeply entwined in the globalisation process, International English is a multifaceted term that is nonetheless given meaning in the way it is being understood and used in context. The number of non-native speakers teaching the English language outnumbers native speakers of the language by 3 to 1. Ergo, many claims of ownership of the language by native English speakers - as well as any prescriptive doctrines about what needs to be taught and how when one studies English as a non-native language — have become as unreasonable as obsolete. The surge of the different types of ‘Englishes’ entails that cultural authenticity, real life situation and world issues need to be embedded into the communication and teaching of the language. This paper will discuss pedagogies employed by non-native English educators to facilitate the understanding and use of the English language in context. It will also highlight the pertinence of the sense of awareness of the self and one’s surroundings in second language learners. By developing a manifold and critical understanding of the issues related to the learning of English as a lingua franca, this paper also makes recommendations about the recognition and appreciation of diverse range of linguistic, cultural, ethnic student backgrounds of the learners in developing course content and methodologies.

Keywords: English as a Lingua Franca, Globalisation, Internationalisation

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## Introduction

### *English language in the global interconnected world*

Seventeenth to nineteenth century British colonisation and imperialism has managed to firmly institutionalise the English language in many countries through the laws written in English and by establishing it as the language of instruction in secondary and tertiary education. Then in the twentieth and twenty-first century, the United States' economic achievements built on the British legacy to reaffirm the critical importance of the English language. Indeed, today the United States account for 22 per cent of the gross world product at market exchange rates and over 19 per cent of the gross world product at purchasing power parity. Culturally also the United States is a superpower; its culture, arts or entertainment have worldwide appeal and significant international popularity on much of the world, especially through music and cinema. This culture is expressed through the medium of the English language. Globalisation, through modern communication, trade, the constantly increasing rate of international travels, travelling itself, is constantly reaffirming the importance of the English language. In the fields of business, academics, science, computing, education, transportation, politics and entertainment, English is already established as the global language. An estimated 85% of international organisations have English as at least one of their official languages. Hence, the English language is both agent and product of the process of globalisation.

While Robertson (1992) sees globalisation as “the compression of the world and the intensification of consciousness of the world as a whole” (p. 8), Waters (1995) defines it as “a social process in which the constraints of geography on social and cultural arrangements recede and in which people become increasingly aware that they are receding” (p. 3) This process as noted by Al-Rodhan and Stoudmann (2006), encompasses the causes, course, and consequences of transnational and transcultural integration of human activities. Giddens (1999) sees globalisation as “the intensification of worldwide social relations which link distant localities in such a way that local happenings are shaped by events occurring many miles away and vice versa” (p. 64). Importantly, as noted by Giddens (1999), globalisation has an interactionist dimension, a dual process: global flows beyond the local context affect the local, and the local can affect the global. Harvey (2003) views the process through the lens of the interdependence of societies on a world scale and the reaffirmation and intensification of existing cultural or economic links between individuals, communities, nations and organisations. But there are some dangers and negative effects associated with this process.

### **The dangers and possibilities of globalisation**

For instance, Smith (2003) argues that, *globalisation is fraught with various new kinds of identity crises, ranging from eroding senses of national identity to unprecedented losses of indigenous languages and cultures under the homogenising pressures of global capital* (p. 36).

As English has become the language of communication in the global world, globalisation can promote the perception and usage of the English language as an imperialist tool. Walker (2004) notes that a hyper-globalist perspective - globalisation

perceived and implemented in a forceful way - often means that “the nation states are subsumed by single, overarching world policies” (p. 78-79). For instance, the learning of English is becoming more and compulsory from primary school to university across many geographical spaces and cultures where it is not a first language. Understandably, many countries find it important to equip their citizens with the linguistic skills to become global citizens, but as Smith (2003), Faulconbridge & Beaverstock (2009) underline, globalisation can promote and be a strong advocate for generic values and uniform cultures across otherwise originally different and diverse cultural spaces. Held *et al.* (1999) claim that globalism involves an imposition of cultures, ideas and beliefs. According to them, it is translated mainly by a recessive dominant relationship of the Western ideals and values over non-Western ones. But Dewey (2007), argues that the potential of globalisation far outweighs its dangers, and notes that “English is important for the enormous cultural diversity of the speakers who use it” (p. 333). Canagarajah (2002) militating for a necessary resistance of linguistic imperialism in the teaching of English, affirms that through the globalisation of the English language, “information exchanges can become more democratised and made less hierarchical, or more levelled” (p. 12).

### **Globalisation and Internationalisation**

In the field of education, the global interconnected world has enabled students to travel in pursuit of higher studies. While this is the reality of globalisation, these students need to be equipped with linguistic and intercultural tools to adapt to what is for them a different yet ever changing environment. Acquiring the skills and tools to adapt to globalisation is the process of internationalisation. The Global Policy Forum (cited in Daley, 2006) makes the distinction between internationalisation and globalisation as follows:

*Internationalization refers to the increasing importance of international trade, international relations, treaties, alliances, etc. International, of course, means between or among nations. The basic unit remains the nation, even as relations among nations become increasingly necessary and important. Globalization refers to global economic integration of many formerly national economies into one global economy, mainly by free trade and free capital mobility, but also by easy or uncontrolled migration. It is the effective erasure of national boundaries for economic purposes (par. 4).*

At school and university levels, students need to develop the linguistic and intercultural tools to adapt to the changing world. And this can happen through internationalisation which according to Knight (2015) is “the process of integrating an international, intercultural, or global dimension into the purpose, functions or delivery of education” (p. 7). Through internationalisation, each culture is enriched through the contact with other cultures, and this exchange can happen through the medium of the English language. But the critical issue is how can one avoid the English language to be perceived and used as an imperialistic tool and yet still enjoy its benefits regarding the facilitation of communication and the promotion of intercultural understanding among people who speak many languages? First, there is a need to acknowledge the constantly changing socio-political order. The shift from conservative views on the language to more progressive views is to be considered.

## Conservative and progressive views about the English language

Conservative views can occur with a hyper-globalist implementation of globalisation. Conservative views also consider the English language as static and rigid and expressed through a static monolithic lens that remains subject to the cultural and ideological norms and standards of what Kachru (2000) defined nearly 30 years ago as “the inner circle” (p. 3) - a small number of countries where English is the first language of its population and also the official language of the country. In this inner circle, Britain and the United States are the most influential because of the reasons mentioned in the introduction section in this paper. Kachru (2000) also explains that English-speaking people can be divided into three groups. The inner circle has already been mentioned. The outer circle comprises countries that were predominantly colonised by Britain and where English is the institutionalised language used in the laws and in formal education, but not necessarily employed by the natives outside these spheres. The third group is the-yet-to-be linguistically colonised rest of the world. It can be argued that the inner circle nations are regarded as the self-perceived agents of language spread. Indeed it holds quite conservative views about the English language; it often advocates that English is taught in the same way across different geographical spaces - the course materials are the same and the knowledge content is the same and the pedagogy is the same. For instance, Cambridge English Proficiency (CPE), the International English Language Testing System (IELTS), The Test of English for International Communication (TOEIC) are implemented in the same way across different countries. It is true that people who take them, mostly school and university students, would like to gain access to universities in the inner circle. That is the reality of globalisation, but a process of internationalisation as defined by Knight (2015) would have included an intercultural dimension to these entry requirements, allowing learners to express their cultural identity through the medium of the English language.

Conservative views about the English language often focuses on grammatical accuracy. In that paradigm, in learning and teaching, what matters most is that learners are given the tools and skills to develop proficiencies that are close to native speakers. Even if foreign language pedagogies sometimes say to wish to empower the local EFL learners to develop proficiency in the language of the global world, Rizvi (2007) for instance argues that the 21st century dominant Western framings brought about by globalisation means that,

*understanding other cultures becomes deformed [...] only superficial aspects of cultural traditions are learnt, making learning appear patronising, especially to marginalized groups and nations [...] and lends itself to cultural essentialism and thus ignores and obscures the historical and political construction of cultural traditions (p. 295).*

Progressive views on the teaching of the English language stipulate that a holistic approach should be adopted that is context specific and that considers the nature of the learner and the cultural context in which knowledge is developed. Less patronising than conservative views, a more progressive view would be as Hughes (2009) recommends, that pedagogies should aim “for the promotion of greater understanding in those areas of belonging and identity that make up the complexity of any individual” (p. 139)

Progressivists on the other hand emphasise the importance of language socialisation in foreign language learning. They recommend that a whole language approach should be adopted in developing literacy skills in students. Kell, P. and Kell, M. (2013), for instance argue that “knowledge and facts are socially and culturally constructed” (p. 28). So an English as a Foreign Language pedagogy that is constructivist in essence allowing learners to make meaning of the local and global world is necessary. This is moving away from hyper-globalist views that often consider local cultures only anecdotally and encourage more constructivist perspectives that promote the acquisition of knowledge in glocal contexts and an inclusive form of internationalisation. The inner circle needs to become bigger and let more nations in. This is the premise of the internationalisation of the English language as it spreads across diverse geographical and cultural spaces.

### **Ownership of the English language and cultural plurality**

But one major obstacle to further democratise the English language is the teachers themselves. For instance, Dewey (2007) notes that “many teachers and learners undoubtedly regard language norms as essentially fixed, predetermined, tied to a restricted number of geographic centres” (p. 346). The reality is that parents in many cases would prefer a native speaker over a non-native one when teaching English to their children. So who owns the language? From a hyper-globalist perspective, the English language would be owned by the inner circle but from an internationalist perspective, we would rather speak of Englishes with multiple users and hence owners of the language. Even when we are having different cultures coexisting, Joseph (2006) warns against attempting to codify new Englishes prematurely. Dewey (2007) notes that “the linguist who rushes in to systematise a New English prematurely runs a serious risk of misrepresenting as fixed what is actually still quite fluid” (p 145). The fluidity here obviously refers how language can evolve depending on the socio-cultural contexts of its users and how they use it. Advocates of the English language hence need to be careful not to assume that the language exists as a system that needs to be understood and taught within a framework of the imperialist language, or the native speaker. The term ‘language socialisation’ as endorsed earlier need be emphasised upon where the students need to be able to communicate in a social context intelligibly.

Dewey (2007) urges to “untie the language from any geographical centre” (p.346). In the international context, when we untie a language, we allow plurality and diversity of the language, which automatically leads to many Englishes. In that respect, internationalisation can help to better comprehend the world Englishes and English as a lingua franca arguments in the global world.

### **English as Lingua Franca**

The emergence of English as a Lingua Franca (ELF) is of great pertinence. How English as a Lingua Franca is experienced in the glocal context, its meaning and its impact is pertinent nowadays. ELF is defined by Seidlhofer (2001) as, *the use of the English language among persons who share neither a common native tongue nor a common (national) culture, and for whom English is the chosen foreign language of communication* (p.240).

The extent to which the English educator understands, respects and celebrates the non-native English learners' cultural and linguistic backgrounds significantly influences the learners' sense of engagement with the learning of the English language. While endeavouring to successfully engage and motivate learners, it is important to design curricula that is contextualised and meaningful. They need to be challenging but flexible enough to accommodate the needs and aspirations of the learners and be aligned with their lived experiences and realities. In that respect, a constructivist approach is recommended; learners need to be given the opportunity to develop a sense of engagement with the language and cultures by respecting their own cultures and cultural identities. The ideal of learning English across socio-cultural and linguistic contexts supports the view that ELF is multicultural rather than culture-free. It is certainly not mono-cultural or monolithic. It is true that learning a new language is learning about a new culture or new cultures and cultural practices that are associated with the language, but at the same time, it is critical to infuse local knowledge in the curriculum, that is, design course material that takes into consideration the cultural location in which learning is happening. Therefore, as underlined by Dewey (2007), the hyper globalists contribute to the uniformity of English language education by equating globalisation with Westernisation. Dewey (2007) argues that "English is in any case a hybridized language in the extreme, with a varied, complex trajectory of development" (p. 349). The trajectory of the development of the language is ergo questioned when the number of English users in the world are dominated by people who do not have English as a first language. Countries which have English as first and/or official language is significantly low compared to non-native users of the language. Graddol's (1997) notes that by 2050, speakers of nativised Englishes will far outnumber speakers of native English, that English will be used primarily as a second language in multilingual contexts. So in this new world order, if the English language no longer has any legitimate owner, then non-native English speakers are in a position - perhaps even a better position - than native speakers to be English language teachers.

### **The status of the Non-native English teacher**

Lin *et al.* (2005) note that non-native speakers are still regarded as the other, marginalised and "in some senses dispossessed" (p152). Still, Ur (2010) affirms that these teachers "are often the only role-models their students have readily available (p. 86). This is because these teachers understand how the teaching of the English language is so closely linked to an understanding of local cultures, values and traditions. Medgyes (1994) notes that non-native English speaking teachers provide a good learner model for imitation and describes non-native English speaking teachers as follows:

- 1) They teach language learning strategies more effectively.
- 2) They supply learners with most information about the English language.
- 3) They anticipate and prevent language difficulties better.
- 4) They are more empathetic to the needs and problems of learners.
- 5) They make use of the learners' mother tongue. (p. 157)

But irrespective of who teaches, a native or non-native, what matters more is how they teach. It is a matter of finding the pedagogy that is relevant for the context. Referring to the discussion about globalisation and internationalisation, what is

needed is a pedagogy of English language that develops in students an awareness of the global connected world from home and that helps them become internationally minded. For instance, Poonoosamy (2015) notes that in the enacted curriculum, it is important that language teachers and students explore knowledge and cultures of the wider world that includes local context and contemporary issues and concerns globally. This could address some of the challenges faced by many students from non-Western backgrounds in engaging with an ESL curriculum that is often not sufficiently representative of their cultures. This curriculum is often prescriptive which can make learning patronising. The focus must be on the communicative competence through a global English that bridges cultural differences for users of multiple proficiency levels and native or non-native (like) features. For non-native students, it is important that the language programs do more than anecdotally explore knowledge that pertains to their countries of origin. Also, Dewey (2007) suggests that instead of viewing globalisation as the imposition of the global onto the local, emphasis must be made on pedagogical norms and practices more locally defined and regionally interchanged.

### **Effective Pedagogies in Context**

For these international and intercultural skills to be developed in learners, learning needs not to be patronising. Learning needs to focus on knowledge that is accessible, understandable and culturally relevant first, and then it can be stretched to what is international. There is a cultural flow which we need to acknowledge, native and non-native alike. As mentioned earlier, what is important is the ELF pedagogy and the philosophy. Both the non-natives and the natives can collaborate and learn from each other. Simply put, the non-natives can share their knowledge of the local culture, norms and traditions and the native can help in their linguistic expertise. They can thus learn from each other.

This collaboration is indeed important, as these differences in learners' perceptions about native and non-native English teachers, according to Rattanaphumma (2016) there are some various positive comments about having native teachers. Native teachers are good role model and use a variety of classroom activities. Yet there are some weaknesses in grammar teaching. On the other hand, Rattanaphumma (2016) notices a determination of teaching among non-native teachers and clear transference of knowledge. Nonetheless, the use of text-based and few activities in classes become a common scene in the non-native teacher's class. This makes classes more serious and inauthentic.

Finding ways to make classes more authentic would be part of the domain of teaching and learning English as a Lingua Franca. Adopting a lingua franca approach to the teaching of the English language can promote successful cross-cultural communication amongst students. Communication among native and non-native students needs to be valorised by sharing ideas without prescriptive accents and grammatical standards being the primary focus.

## Conclusion

As Rattanaphumma, (2016), Dewey (2007) note, the effective teaching of the English language does not entail having a native accent or a native command of the language. Even more so, Seidlhofer (2001) suggest that native English can sometimes experience difficulty in understanding the complex and intricate meaning and linguistic expression in English because their competence in the language sometimes is inherent and unconscious, while non-native speakers can understand the challenges that learners may experience because of their training in context. So, what is needed is to provide to non-native teachers and native teachers likewise appropriate training in context. The segregation between natives and non-natives must be bridged. Poonoosamy (2015) and Held *et al.* (1999) for instance recommend the recognition and appreciation of the diverse range of linguistic, cultural and ethnic learners' backgrounds in developing course content and methodologies in contexts. As noted by Dewey (2007) and Seidlhofer (2001), the transformationalist hypothesis of globalisation has the potential of developing a sense of awareness of the self and one's surroundings in second language learners that is if proper language pedagogies are employed. Ur (2010) clearly points out that,

*there is no doubt that practitioners can and should, learn from the insights provided by research; but in the process of this learning, these insights need to be examined and interpreted using experienced-based reflection and professional considerations such as classroom practicability, learner aspirations and motivation and pedagogical credibility (p. 90).*

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***Educational Policy Theory and Practice: Designing Comprehensive Frameworks  
for Evaluating and Managing Changing Educational Environments***

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The Asian Conference on Education 2017  
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**Abstract**

Educational institutions at all levels of the education system can make positive contributions to social change in global society by effectively bridging the gap between educational theory and practice to create optimum learning environments and outcomes for students. A clear understanding of educational policy theories and practices can allow educational policy makers to design effective frameworks for evaluating and addressing major factors affecting education systems, including social norms, political pressures, and other key variables (Plaut, 2003). School leaders may view educational policy through an ideological, organizational, political, or practical lens and analyze and interpret educational policies employing positivistic or interpretive theories. Positivist theories employ a scientific approach in examining the structural aspects of organizations, systems, and the relationships between specific interest groups, while interpretive theories may be more ideological in nature and view reality as a social construct rather than as an objective form of absolute truth (Cooper, Fusarelli, & Randall, 2004). Educational policy theory can form the basis of sound management decisions and classroom practices, leading to coherent and effective educational programs and systems. Multiple dimensions and theories can provide school leaders with new insights and perspectives on various aspects of educational policy. Policy evaluation helps to improve educational effectiveness by systematically examining the structure of the curriculum, instruction, assessment processes, and the benefits to stakeholders (Diamond, 1997). Evaluative frameworks based on educational policy theory can add clarity to the evaluation and management of complex and evolving social, political, and educational environments in the era of globalization.

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## **Introduction: Policy Theory and Practice**

Educational policy theories, assessment theories, teaching practices and methodologies can exert a positive impact on teaching and learning outcomes. To educate effectively for change in a rapidly evolving social, political, economic, and technological global environment, it is first necessary to identify clearly and to understand the key factors related to change and to respond with a coherent, comprehensive approach. Educational institutions at all levels of the education system can contribute to social change in contemporary global society by effectively bridging the gap between theory and practice to create optimum learning environments and outcomes for students. A clear understanding of educational policy theories and practices can allow educational policy makers to create an effective framework for policy review to conduct a periodic, systematic analysis of major factors affecting education systems, including social norms, political pressures, and other key variables (Plaut, 2003). Educational policy theory can form the basis of sound management decisions and classroom practices, leading to coherent and effective educational programs and systems. Evaluative frameworks based on educational policy theory can help to add clarity to complex and evolving social and political environments in an interconnected and rapidly evolving international society in the era of globalization.

Continuous philosophical enquiry and deep self-reflection serve to develop and enhance educational theory which influences policy-making decisions (Kazepides, 1994). Administrators and policy makers can draw on a wide range of disciplines and schools of thought to deepen awareness of different possibilities and to improve decision-making processes. School leaders may view educational policy through a normative (ideological), structural (organizational), constituentive (political), or technical (practical) lens and analyze and interpret educational policies employing positivistic or interpretive theories (Cooper, Fusarelli, & Randall, 2004). Positivist theories employ a scientific approach in examining the structural aspects of organizations, systems, and the relationships between specific interest groups. Interpretive theories may be more ideological in nature and treat reality as a social construct rather than as a purely objective form of absolute truth (Sandra, 2001). Multiple dimensions and theories can provide school leaders with new insights and perspectives on various aspects of educational policy. Policy evaluation helps to improve educational effectiveness by systematically examining the structure of the curriculum, instruction, assessment processes, and the benefits to stakeholders.

## **Applying the Four Dimensions of Policy Theory to Educational Policy Evaluation**

Educational policy makers may apply the four dimensions of policy theory to policy evaluation by using a wide range of different approaches. Ideological, organizational, political, and practical dimensions of policy theory can provide valuable new perspectives in the analysis of complex environments. In addition, positivist and interpretive approaches and theories can also enhance policy evaluation. Positivist approaches to the formulation of policies are scientific and primarily quantitative in nature, while interpretive approaches to policymaking include feminist theory, ideological theories, critical theory, and postmodernism and may question the status quo (Cooper, Fusarelli, & Randall, 2004). Interpretive forms of analysis address complex, interrelated social and psychological factors. An overreliance on positivism

and easily measurable factors in policy making may lead to an oversimplification of complex and diverse social contexts (Lees, 2007). Interpretive theories help to improve and change policy making by challenging conventional wisdom, values, beliefs, traditions, established facts, and systems in society. Critical thinking and the questioning of belief systems are key elements of interpretive approaches to teacher training and educational policy evaluation (Sandra, 2001). An increased awareness of personal belief systems and willingness to change can lead to improvements in educational policy. The application of multiple frameworks in the detailed analysis of challenging issues is essential in the formulation of coherent, relevant, and effective educational policy (Hills & Gibson, 1992). The careful, objective consideration of multiple perspectives and viewpoints in the educational policy decision-making process can lead to important changes and modifications.

Ideology can exert a strong influence on educational policy and on the design, content, and goals of curricula. The ideological dimension of policy theory addresses such fundamental factors as basic beliefs, fundamental values, and the influence of ideology on educational policy (Honig & Hatch, 2004). An ideological dimension in the formulation and review of policy theory assists policy makers in identifying underlying assumptions that shape educational policy. Self-reflection and critical thinking can allow policy makers to examine ideological influences in an objective manner and to make choices which benefit all stakeholders.

The organizational dimension of policy theory encompasses the structures and different levels within organizations and institutions (Cooper, Fusarelli, & Randall, 2004). The specific structure of an organization may significantly influence the decision-making process within an organization. Neoinstitutional theory examines the roles of specific institutions in shaping the decision-making process within a wider system (Cooper et al., 2004). Viewing a system as a collection of interrelated institutions with unique structures and organizational cultures enhances the analysis and understanding of inputs and outputs in a system. In addition to examining the relations between the individual components of an organization, the overall system needs to be considered as a complex, functioning unit with unique properties.

The political dimension relates to the political nature of organizations and the relations between specific groups in society. The political dimension of policy analysis includes elite groups such as educational leaders at the district, state, and federal level in addition to gender and ethnic groups and average citizens (Cooper, Fusarelli, & Randall, 2004). Demographic factors often play an important role in the decision-making processes of schools. Schools operate in an open system and need to be able to respond to changes in the surrounding environment to meet the needs of all stakeholders. The neopluralist advocacy coalition theory recognizes the importance of various interest groups, the political nature of human systems, and the effects of interaction between groups within a system (Cooper et al., 2004). An understanding of the structure and nature of groups within institutions may be as important as an understanding of the structure of institutions. Coherence in educational policy requires the active participation of a wide range of stakeholders. Various groups of constituents can make significant contributions to the formulation of successful policies by providing suggestions and regular quantitative and qualitative data to improve the curriculum and operation of schools (Honig & Hatch, 2004). Effective school leaders and policy makers address the needs of internal and external

constituents, including teachers, students, parents, community members, business leaders, and various levels of government (Honig & Hatch, 2004). Shared leadership within schools and regular input from community members, families, and the local business community may help to improve the effectiveness of the curriculum and increase support for schools. Ray, Candoli, and Hack (2005) note the importance of voluntary decision-making processes and the active involvement of multiple constituents in the management of schools.

The practical dimension of policy theory includes the various planning stages, implementation, and evaluation processes involved in educational policy (Cooper, Fusarelli, & Randall, 2004). Systems theory, related to the technical dimension of policy theory, attempts to quantify, measure, and predict the results of inputs and outputs in a system interacting with the surrounding environment (Cooper et al., 2004). Inaccurate or incomplete data and potential lurking variables may be present despite the appearance of control in systems theory, amplifying and perpetuating flawed formulas and resulting negative consequences. Systems theory and various network models developed in the business sector can be applied to school management, projects, and the development of educational policies (Ray, Candoli, & Hack, 2005). Although some elements of business design and management may create benefits in schools, educational theory should remain the cornerstone of educational policy decisions.

### **Improving the Curriculum by Using Policy Evaluation**

School leaders need to clearly define and state the goals and objectives of the curriculum, instruction, and methods of assessment to avoid uncertainty among teachers that may cause resistance to educational policies (Diamond, 1997). In the United States, some local, state, and federal rules, regulations and laws have created a complex educational, administrative, and legal environment for school leaders. Mandated change may sometimes result in disappointing or mixed results in such a complex system. Learning may not be linear and sequential, progressing in an orderly and predictable fashion (Cooper, Fusarelli, & Randall, 2004). Educational policy based on data collected from a variety of sources, stored electronically, and contrasted and compared in different ways can help to improve the curriculum. Some curricula and courses at colleges and universities do not specifically state learning outcomes and significant gaps may exist between stated goals and teaching practices (Diamond, 1997). Policy evaluation can serve to identify problems in the curriculum and to coordinate appropriate responses. Professional development for instructors can lead to significant curriculum improvements (Diamond, 1997). Emphasizing the importance of professional development and educational technology in educational policy making can serve to improve the curriculum.

### **Improving Instruction by Using Policy Evaluation**

Cooper, Fusarelli, and Randall (2004) maintain that some of the policies of teacher unions may be incompatible in some cases with the professional standards and goals of teaching. Some teachers seem to desire that teaching be elevated to the level of a profession but choose to belong to unions with goals and agendas that may prevent teaching from being viewed as a profession. Site-based management approaches may conflict with the desire of teacher unions to negotiate contracts that address a wide

range of concerns equally across an entire school district (Ray, Candoli, & Hack, 2005). The conflict between site-based management, a key element in ongoing educational reform, and the expectations and demands of teacher unions poses a significant challenge to school leaders and administrators. Highly educated professionals need and desire higher levels of autonomy (Bolman & Deal, 2003). Increased levels of autonomy for teachers may help to improve the quality of classroom instruction. Educational technology can significantly enhance curriculum design, classroom, instruction, and assessment (Huba & Freed, 2000). Policy evaluation can help to identify best practices to improve classroom instruction.

### **Improving Assessment by Using Policy Evaluation**

Policy makers can improve the educational evaluation process in a variety of ways. Building a consensus and involving all stakeholders can enhance the evaluation process (Cooper, Fusarelli, & Randall, 2004). A wide range of assessment methods can be employed with the support and cooperation of multiple stakeholders. The vision of a school leader and guiding coalition may facilitate the planning and implementation of changes to align the curriculum, instruction, and assessment within an educational institution (Diamond, 1997). Parents, students, and community members can contribute information and suggestions to improve the accuracy and fairness of educational evaluation. Proposed measures for improvement resulting from the evaluation process must be adequate and related to student learning outcomes (Cooper et al., 2004). School leaders and teachers can use different forms of evaluation such as learner journals, focus groups, student and teacher end-of-course surveys, and analyses of community projects managed by students.

School leaders can employ best practices in educational evaluation employed by different schools and districts (Ray, Candoli, & Hack, 2005). Regional and national guidelines can provide a flexible framework for effective educational evaluation practices that policy makers and school leaders can compare in a clear and meaningful way. Summative and formative evaluation processes for school leaders, instructors, and students may employ a variety of approaches, including student surveys, portfolios, interviews, peer observations and feedback, self-evaluations, formal examinations, and tests (Diamond, 1997). Quantitative and qualitative research can be used to identify areas in need of improvement, and the data from such research can be used to demonstrate the need for improvements and possible benefits. Shared leadership can enhance the evaluation process (Ray et al., 2005). Individual teachers and students can set personal goals and objectives in addition to goals for an educational institution.

School leaders can measure progress in a variety of ways using quantitative and qualitative data. The evaluation process can create new learning opportunities for teachers and students. Tracking by ability may have a negative impact on some students and limit some learning opportunities (Ansalone, 2004). An effective accountability system assesses schools, administrators, teachers, and students using a multilayered system of accountability. Policy evaluation can identify the strengths and weaknesses in the assessment process and help to create an effective and supportive community of learning in which assessment creates new learning opportunities for all participants.

## **Conclusion**

Policy makers can contrast and compare positivist and interpretive theories of education policy making, applying an ideological, organizational, political, or practical lens to evaluate educational policy and to improve educational effectiveness (Cooper, Fusarelli, & Randall, 2004). The four dimensions of policy theory can help school leaders to analyze and interpret different elements of educational policy from a wide range of perspectives. Policy evaluation enhances the effectiveness of education by systematically reviewing the curriculum, instruction, and assessment processes and the implications for internal and external constituents.

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***Development of Physical Blocks with Communication Device for Visual Programming Study***

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**Abstract**

The visual programming language Scratch is widely used to learn problem-solving skills and logical thinking; However, it is not easy for elementary school students to learn how to use Scratch language. Conventional Scratch learning has two different aspects on how to use the PCs to carry out various operations and programming. For students who are unfamiliar with how to use the PC such as how to use the keyboard and mouse. For these students, it will difficult for them to proceed with learning how to use the PCs and at the same time how to do programming. The purpose of this research is to introduce students on how to program without having to learn how to operate the PCs. In this research, the authors have developed their own program using real physical blocks instead of the blocks that must be used on the Scratch's screen. By connecting these real blocks together, the students can create the Scratch programs. This created program can then be used to execute on a PC. The authors have created seven different types of physical items which we call "blocks." These "blocks" are as follow: "start," "display," "move," "repeat," "conditional branch," "conditional expression" and "sensor." The "Start block" function is to connect the other blocks to the PC. These physical blocks are then connected in the same way as the Scratch program. Overall, the authors developed real blocks to confirm that the operations worked.

Keywords: Programming, Scratch, Real physical block, Education for elementary school

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## Introduction

The Ministry of Education, Culture, Sports, Science, and Technology-Japan decided that compulsory programming in elementary school education in 2020 (The Ministry of Education, Culture, Sports, Science, and Technology-Japan, 2017). The aim is to teach problem-solving skills and logical thinking to students.

The visual programming language is said to be easy to understand for beginners, and the programming language has been widely used in programming education especially the Scratch language. There is a practical report which actually carried out lessons using the Scratch language at elementary school (Hideki et al., 2010).

However, learning Scratch has two different aspects on how to use the PCs to carry out various operations and programming. Some students who are unfamiliar with how to use the PC such as how to use the keyboard and mouse. For these students, it will be difficult for them to proceed with learning how to use the PCs and at the same time how to do programming.

The purpose of this research is to introduce students on how to program without having to learn how to operate the PCs.

By connecting these physical blocks together, the students can create the Scratch programs.

## Scratch

Scratch is a visual programming language developed by MIT (Scratch, n.d.). It is mainly designed for 8 to 16 years old. Scratch programming is done by combining Scratch blocks representing commands on the PC's screen. The execution result is displayed through the character (sprite) on the PC's screen.



Figure 1: A sample of Scratch Program.

An example of the Scratch program is shown in Figure 1. This Scratch program repeats the operation of moving the sprite 10 steps 10 times when the green flag button is clicked.

Movement of the sprite is the basis of Scratch programming. In actual classes, the learner learns the meaning and operation method represented by the Scratch block and progresses learning by programming according to the theme given by the teacher.

## System

Teacher demonstrates on how to program Scratch by using physical blocks to students. Teacher executes the assembled program and shows students the result of programming and teaches the meaning of each physical block. Students program the Scratch program by using physical blocks based on the exemplified how to connect physical blocks by the teacher.

The system targets Scratch2.0. The system consists of a PC which executes Scratch, and physical blocks are referring to Scratch blocks on the screen. Connecting physical blocks together represents the Scratch programming, which looks like Scratch programming on the PC's screen. The PC perceives connected physical blocks then build a program to execute the program. Physical blocks include a microcontroller and communicate each other and PC. Seven types of physical block were made: "start," "display," "move," "repeat," "conditional branch," "conditional expression," and "sensor." The authors created the program which was able to communicate to the physical blocks and construct a Scratch program.



Figure 2: Overview of The System

## System constitution

Figure 2 is an overview of the system. The system consists of the PC which executes Scratch, and physical block imitating Scratch block. Represent Scratch program by joining physical blocks. The PC creates and executes the Scratch program by reading the alignment in a sequence of the physical block.

### Real physical blocks

Table 1 shows the role of the physical blocks were created. The string described on the physical block follows the "Hiragana" expression of the Scratch development environment. "Nihongo"("Hiragana" style) is selected from Scratch's language menu. The shape of the physical block also reduces the difference from the Scratch block.

Type of Physical Block	Name of Scratch Block	Meaning of Command
Start	when Green Flag clicked	Connect other physical block from this physical block
Display	say (var)	Display characters through blooming from a sprite
Move	move (var) steps	Move a sprite 1 pixel to facing way
Repeat	repeat (var)	Repeat the methods inside this block
Conditional Branch	if (var) then	Decide next executing method whether the specified condition is satisfied or not
Conditional Expression	<, >, =, not	Evaluate the value of the sensor and the value set in the "conditional expression" physical block using the comparison operator
Sensor	(var) sensor value	Use the value of specified sensor in the program

Table 1: Role of Each Physical Block



Figure 3: A Connector of the Physical Block

Figure 3 is a connector of the physical block to connect another physical block. Magnets are attached to the connectors, and misconnection can be prevented by using

the shape of the connectors and the polarity of the magnets. "Start" physical block is connected to the PC and serves as a starting point of other physical blocks. USB connection is used for connection to the PC. "repeat (var)" and "if (var) then" Scratch blocks have a beginning and end, and has a structure that puts other Scratch blocks between the beginning and the end. In the "Repeat" physical block and the "Conditional branch" physical block, an expansion and contraction mechanism was adopted in order to put other physical blocks between the beginning and the end. As a sensor, the system uses "nekoboard 2" which is a compatible machine of "Picoboard" which is a sensor board used in the Scratch environment (Picoboard, n.d.). To grasp the alignment in a sequence between the physical blocks, a microcontroller is included in the physical block. The PC grasps the alignment in a sequence between the physical blocks by using the serial communication of the microcontrollers. A unique ID is set for each microcontroller, and by sending this ID to the PC, the assembling of the physical blocks are recognized.

### Physical block combination

Connection Basis	Connection To
Start	Display, Move, Repeat, Conditional Branch
Display	Display, Move, Repeat, Conditional Branch
Move	Display, Move, Repeat, Conditional Branch
Repeat	Display, Move, Repeat, Conditional Branch
Conditional Branch	Display, Move, Repeat, Conditional Branch
Conditional Expression	Sensor
Sensor	Display, Move, Repeat, Conditional Branch

Table 2: Connection Combination of Physical Blocks

Table 2 shows connection combinations of physical blocks. In the "start" physical block, there is no physical block to be connected before, and the PC is connected. The "repeat" physical block connects physical blocks to be repeated between the beginning and the end. The next physical block is connected to the end of the "repeat" physical block. The condition part of the "conditional branch" physical block is connected so that the "conditional expression" physical block is superimposed on top. The process to be executed when the condition is true is connected to the starting end and the terminating end. The "conditional expression" physical block connects only with the "sensor" physical block. The "sensor" physical block is connected so as to overlap the "conditional expression" physical block.

### Hardware in physical blocks

Arduino is used as a microcontroller (Arduino, n.d.). Arduino is open source hardware with AVR microcontroller and input / output port.

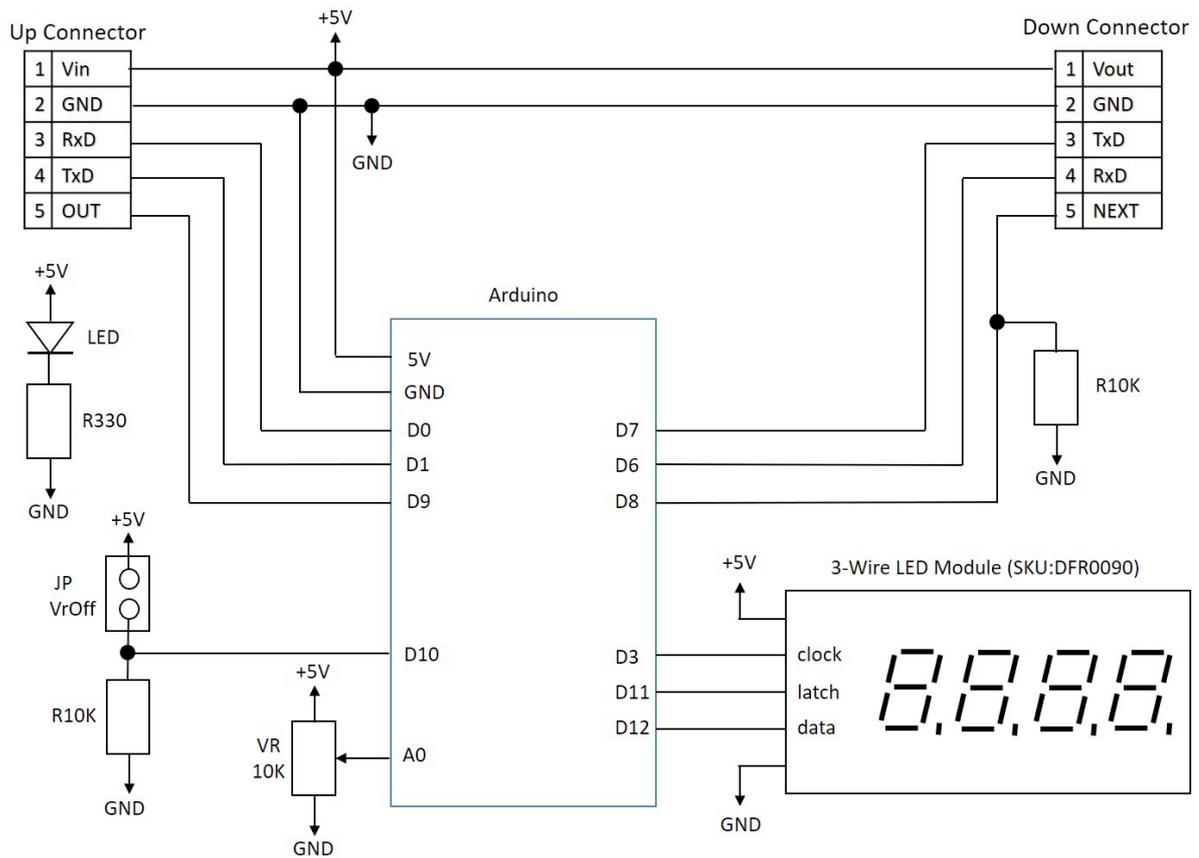


Figure 4: Circuit Diagram inside the physical block

Figure 4 shows the circuit diagram inside the physical block. UART is used for communication between microcontrollers. RxD and TxD represent the reception port and transmission port of the serial communication, respectively. Power is output from Vout and power is input at Vin. This supplies power between the physical blocks. OUT tells that the next connected microcontroller is connected to the previous microcontroller. NEXT grasps the presence or absence of a connection by receiving a signal from the next microcontroller. Use variable resistor and 7 segment LED depending on the role of the physical block. Variable resistance is used by the learner to input numerical values. The 7-segment LED is used to display the value of the input variable resistance.

### Software in physical blocks

The software was created by using "the Arduino IDE". The software controls serial communication, receives values from variable resistance, and displays the values to 7-segment LED.

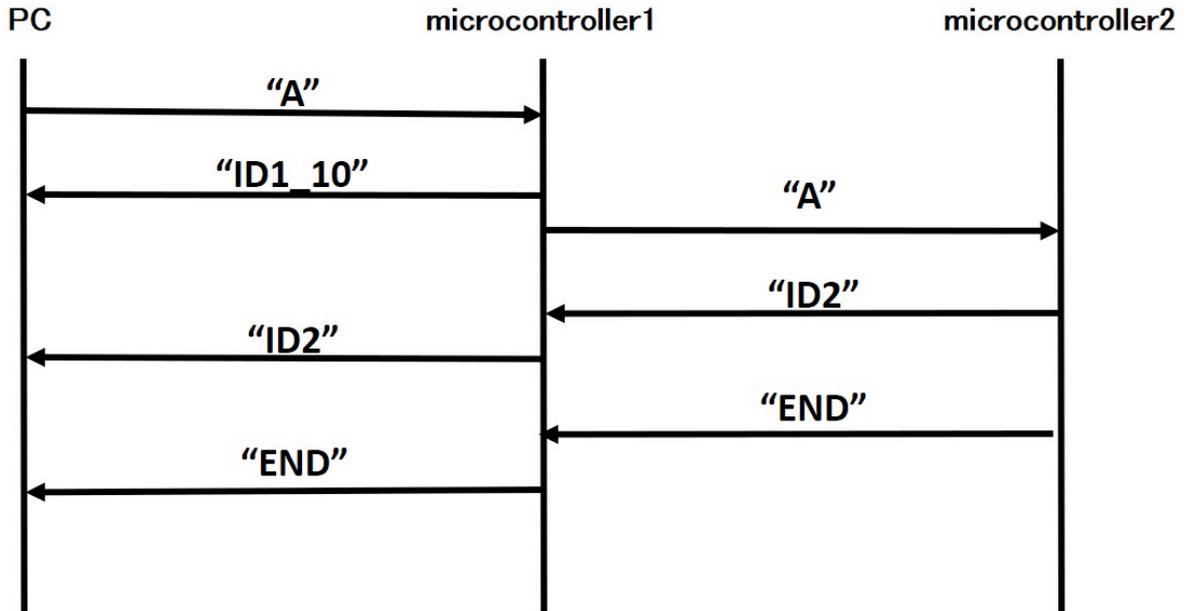


Figure 5: The Communication Procedure of The system

The communication procedure is shown in Figure 5. In order to grasp the role of each microcontroller on PC, ID is set. In order for the PC to recognize the termination of the microcontroller, the PC receives an "END" packet from the microcontroller. "A" sent from the PC represents a request packet. "ID 1 \_ 10" returned by the microcontroller 1 to the PC represents a response packet. "ID 1" of "ID 1 \_ 10" represents the ID of the microcontroller 1. "10" represents an input value. If there is no input value, omit the input value and send only the ID. "END" is a packet representing the termination. By this communication, it is possible to acquire the connection sequence of the microcontroller and to grasp the connection of the blocks.

**Software in PC and how to make a Scratch program from physical blocks**

The Software in the PC is created by Java programming language.

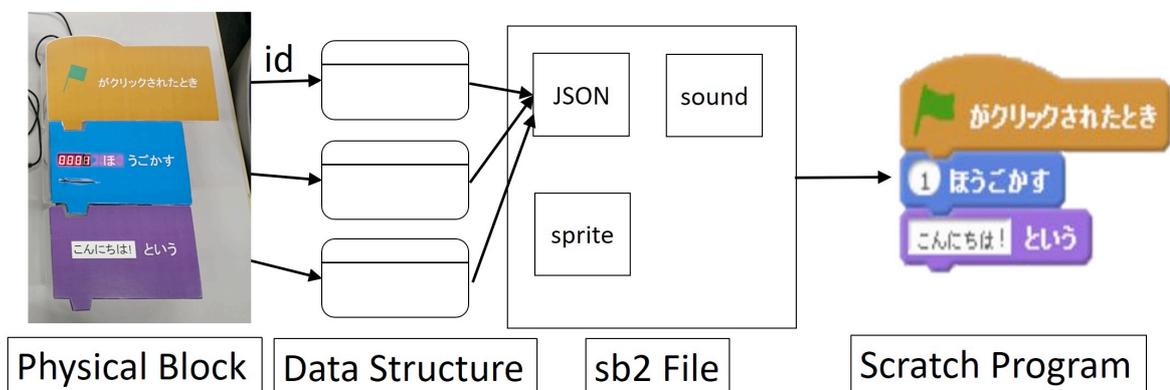


Figure 6: Construct a Scratch Program

Figure 6 shows how to construct a Scratch Program. Construct a Scratch program from the Arduino ID and the alignment in a sequence between physical blocks acquired by the PC. First, convert from the Arduino ID acquired by the PC to the corresponding data structure representing the Scratch block. Second, the structure of the Scratch program is determined based on the alignment in a sequence between the physical blocks. Create a text-based Scratch program from the converted data structure and determined program structure. Text-based Scratch program is output to the file of JSON (JavaScript Object Notation) format where Scratch setting and created program are saved. Along with Scratch's image files and audio files prepared in advance, they are combined into an "sb2" file that is Scratch's executable format. Execute the Scratch program by starting the created the sb2 file with Scratch.

### Text-based Scratch program

The source code of Scratch 2.0 is described in the JSON file of the created Scratch project. The source code is described in the script field of the JSON file, and editing is possible. In the source code, text corresponding to the Scratch block is described. For example, "say" in the JSON file corresponds to "say" of the Scratch block, "doRepeat" in the JSON file corresponds to "repeat" of the Scratch block. By editing these texts, it is possible to generate a Scratch program without operating the Scratch block on the PC. This JSON file can be obtained by decompressing an existing Scratch saved file.

### System operation check

The authors joined the created physical blocks and confirmed the operation by executing the program on the PC. We created several example programs and confirmed that they could be executed correctly on Scratch.



Figure 7: An Example of Checked Scratch Program

An example of a checked program is shown in Figure 7. For a check of the system, we used following physical blocks: "start," "repeat," "display," "move." The constructed program was executed using Scratch 2.0 Offline Editor. First, connect in order of "start," "display," "repeat," and "move." Second, connect the start to the PC with a USB cable. Third, get the physical block ID and the alignment in a sequence in which the physical block is connected to the PC. Last, construct a Scratch program and check it can be executable.

A program as represented by the physical block is displayed on the editor of Scratch. By pressing the execute button, the Scratch program was executed. Also, by changing the number of iterations, it was possible to check that the number of times on the editor of Scratch also changed, and it was confirmed that the iteration process was performed accordingly.

### Experiment

The authors conducted an experiment with physical blocks using by elementary school students at "Kid's seminar" organized by TDU Inzai Innovation Activation Center at Tokyo Denki University, Chiba New Town campus on August 3rd, 2017. The purpose of this experiment is to measure the interface of physical blocks. After explaining how to use the physical blocks, the elementary school students with using the physical blocks. And interviewed the students who used the physical blocks.

### Result



Figure 8: An Aspect of Elementary School Student in the Experiment

Figure 8 is an aspect of an elementary school student in the experiment. Students said "It was easy to program." and "The large size physical blocks were easy to use." Some of the students could deal with the other physical blocks which did not explain on how to use the blocks after the students listened to the explanation of how to use the physical blocks only once.

### **Conclusion**

Created real physical blocks for visual programming study. Physical blocks target Scratch2.0. Seven different types of physical blocks were made: "start," "display," "move," "repeat," "conditional branch," "conditional expression," and "sensor." Conducted the experiment and interview with the elementary school students who used the physical blocks.

### **Acknowledgements**

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***Emotional Intelligence in Adolescents with Javanese  
(Study in Yogyakarta Special Region)***

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**Abstract**

The Indonesian country is known to have a very pluralist society. Of the many ethnic groups in Indonesia is known Java Tribe originating from Java Island is the largest ethnic group in Indonesia with a population of about 40.2 percent of the entire people of Indonesia (BPS, 2010). One of the areas with the majority population of the tribe of Java is the Special Region of Yogyakarta. Special Region of Yogyakarta is also known as a student city. Adolescence is known to be a transition period from children to adults who are known to be a period of identity searching including in it is maturity to be able to regulate emotions. Associated with the ability of emotional regulation with certain ethnic groups, from several studies known Java tribe has a better emotional regulatory ability compared with other tribes. Previous research also mentions the ability of one's emotional regulation can not be separated from the emotional intelligence factor it has. This study aims to see a description of the emotional intelligence of adolescents with ethnic Javanese living in the Special Region of Yogyakarta. This study uses quantitative research methods involving 485 adolescent respondents who are students with ages 15-19 years. The results show adolescents with ethnic Java in Special Region of Yogyakarta has a high emotional intelligence.

Keywords: javanese ethnic, special region of yogyakarta, emotional intelligence, adolescent

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## Introduction

Every individual needs another individual to live his life. It creates social interaction between individuals and will continue in the process of life. In social interaction, one can have interactions between individuals and between groups (Soekanto, 1982). Every social interaction in society has a certain degree of dynamics that causes differences in behavior patterns that can not be separated from the role of culture, environment, and situations encountered (Soekanto, 1982).

As a part of the world community, Indonesia is a country that has very diverse ethnic groups. The diversity of the tribe becomes one of the aspects of the formation of cultural groups or groups of individuals who have cultural equations, languages, and ancestral traditions. Tribal diversity in Indonesia can also potentially lead to conflict. In the history of nation and state in Indonesia, there are some cases involving inter-ethnic conflicts, such as the Lampung conflict, the Sampit conflict in 2001, the Papua conflict of 2013 and the Flores conflict. The inter-ethnic conflicts have affected the damage and loss of property, caused quite a lot of casualties, and caused trauma to the victims ("Various Cases of Ethnic War in Indonesia and the Settlement", n.d.).

From some events that damage harmony between tribes and disrupt security in the environment known one of the trigger is the behavioral response of the emotions felt by the individual itself. Emotions can be divided into two types: premier emotions and secondary emotions. Premiere emotions include fear, anger, sadness, joy, surprise, disgust, and contempt. Secondary emotions are all mixed emotional variations between one culture and another that gradually evolves according to the level of individual cognitive maturity (Wade & Carol, 2008).

A study of the emotional and cultural relationships conducted by Matsomoto, Yoo, and Nakagawa (2008) found that the culture adopted and accepted by individuals from certain neighborhoods has differences in the ability to regulate emotions. Furthermore, it is known that culture is invested in a country that emphasizes the maintenance of social order will have societies with higher emotional regulatory scores than those in countries that lack the emphasis on social order, which is cultured individualism, and egalitarian. One of the main functions of culture is to maintain social tranquility, guidelines, and norms about emotional regulation. The conclusion of this study suggests that emotion is the main motivator of behavior, and has an important social function and can not be separated from the culture (Keltner, in Matsomoto et al., 2008).

The Indonesian nation is known to have diverse cultures because it has more than 1000 tribes. It makes many individuals show their cultural identity in their development as individuals, especially in the development of personality. The tribe is very well known by the people of Indonesia is the Javanese tribe with Javanese culture. In Javanese culture, there are peculiarities that are different from other ethnic groups that is in the way of speaking and displaying behavior. Individuals with the Javanese tribe are well-known to be polite in behaving and refined in speech (Mulyana, 1996). Most individuals with Javanese tribes live on the island of Java which is the most populous island in the world. Java Island has an area of only 7% of the total territory of the Republic of Indonesia and is inhabited by approximately 130 million people (60% of the population of Indonesia). Of the 583 dialects of language

in Indonesia, the commonly used national language in daily communication is Indonesian, while regional languages are more widely used in everyday social interaction is the Javanese Language ("Indonesian Overview: Herzlich Willkommen in Indonesien" 2017).

Furthermore, Javanese culture in Indonesia is a culture that is shared by most people in Java Island, including East Java, Central Java, and Yogyakarta Special Region. Broadly speaking, Java Culture is divided into three cultures namely Javanese Culture in Yogyakarta Special Region, Javanese Culture in Central Java, Javanese Culture in Banyumas, and Javanese Culture in East Java. In addition, individuals with Java tribe is known to always uphold the modesty in behavior, speech, and tend to uphold simplicity (Pusaka Budaya, 2017).

The development of adolescents in the Javanese is not different from the development of adolescents in general, which is in the period of identity search in an effort to become a mature individual adult and responsible for all behaviors and decisions made. The adolescent period is generally synonymous with periods of rebellion in which adolescents tend to engage in risky acts, including misbehavior by engaging in free sex behavior, skipping school, stealing, engaging in fighting, using illegal drugs or even engaging in conflict- conflict in the community (Papalia, Olds, & Fieldman, 2009). Associated with emotional conditions in the adolescent period, Hurlock (2002) mentions the emotional condition of adolescents tend to heightened emotionality is a state where emotional conditions appear higher or appear more intense than the normal situation. Emotions in teenagers are manifested in various forms of behavior such as confusion, emotion raging, arguing, not excited, until it is part of the form of self-defense mechanism. Teenage period is also a period to mature the ability of emotional regulation.

The ability of individuals to regulate emotion can not be separated from the role of emotional intelligence possessed by the individual itself. According Goleman (2006) emotional intelligence is the abilities that include self-control, spirit, persistence, and the ability to motivate yourself. Salovey and Mayer (in Stein & Book, 2002) define emotional intelligence as the ability to recognize feelings, reach out, arouse feelings to help the mind, understand feelings and meanings, and control feelings deeply to foster emotional and intellectual development. There are several factors that can affect the emotional intelligence of individuals such as family environment and the environment outside the family (Goleman, 2009). In relation to family environmental factors, Javanese tribal data ranks first as the largest tribe in Indonesia with a population of 95.2 million or about 40.2% of the total population in Indonesia (BPS, 2010). This data makes researchers want to know the emotional intelligence in adolescents who come from the tribe of Java. This is a preliminary study to obtain characteristics of emotional intelligence in adolescents, especially Indonesian adolescents.

### **Emotion and Emotional Intelligence**

Emotions refers to feelings and specifically indicate thoughts, conditions both psychologically and biologically, and the tendency to react. Emotions have a variety of types with mixes, variations, mutations, and nuances of each (Goleman, 2009). Emotions may arise because they relate to the context of the occurrence of something, for example angry emotions will arise when a goal is blocked by something, happy

emotions arise when loved or loving, while emotions are afraid of appearing in the face of a threat, When individual relationships with other individuals or other objects change, then the individual's emotions toward other individuals or objects will also change. Individuals who are considered threatening to be feared, a good thing will be liked. Whether something is in reality, memories, or just a shadow, but still accompanied by emotional signals called emotion (Mayer, Salovey, Caruso, & Sitarenios, 2001).

Emotional intelligence is one aspect that represents a set of competencies to identify, process, and manage emotions. Research on emotional intelligence is growing along with the increasing importance of emotional intelligence for modern society. In addition, there have been many assertions that emotional intelligence can predict clinical, educational, and occupational criteria more than predictions based on general intelligence (Zeidner, Roberts, & Matthews, 2008).

Emotional intelligence can be interpreted as the ability to judge, express feelings appropriately, the ability to understand emotions, and the ability to manage emotions that are useful to support emotional and intellectual development (Reynolds & Miller, 2003). According to Mayer and his colleagues (in Mayer et al., 2001) emotional intelligence also points to an ability to recognize the meaning of emotions and relationships, and to use them as a basis for reasoning and problem solving. Emotional intelligence is also an individual's ability to use his emotions to enhance his cognitive activity.

The conceptual model of emotional intelligence according to Salovey and Mayer (in Pellitteri, 2002) includes three core components: (a) emotional perception, the ability to recognize emotions appropriately both to oneself and to other individuals, and to demonstrate the ability to distinguish between the expression of emotion that is honest or not; (b) emotional regulation, is the ability to monitor and change the intensity or the emotional order in the individual and against the other individual, including the ability to reduce negative emotions to eliminate negative influences and maintain positive emotions; and (c) emotional knowledge, the ability to understand emotions and the usefulness of some information, including using emotions to pay attention to important aspects of social life to build a perspective of creativity and flexibility, and to maintain motivation toward achievement of goals.

Emotional intelligence is developed into five main dimensions by Salovey (in Goleman, 2009) which includes: (a) self-awareness, (b) managing emotions, (c) motivating oneself, (d) recognizing emotions in others, and (e) handling relationships. The first dimension is self-awareness, a self-awareness in recognizing the feelings that occur. This dimension is the primary key of emotional intelligence. Self-awareness is also the ability to monitor feelings from time to time that are essential to a person's psychological and self-understanding. The second dimension is managing emotions. Managing emotions is the ability to overcome feelings with precisely which is the ability to build self-awareness. Individuals who lack this ability need to struggle constantly against the feelings of depression, while the individual who handles it will be much faster to rise from adversity or disturbing things in his life. The third dimension is motivating oneself. It is the ability to regulate emotions as a means to an end and is vital to motivating and controlling oneself. Individuals with these skills tend to be more productive and effective in everything they do. The fourth dimension

is empathy skills. Empathy skills are other abilities that build self-awareness. This is a fundamental individual skill. The more empathic individual can adapt to social signals that indicate the needs or desires of other individuals. The last fifth dimension is handling relationships. Art in relationships is largely the management of the emotions of other individuals. This ability underlies the popularity, leadership, and effectiveness of interpersonal relationships. Individuals capable of this component will be able to do everything well on every thing that relies on subtle interactions with other individuals (Goleman, 2009).

### **Psychosocial Development and Emotional Intelligence in Adolescents**

Teen or adolescence comes from the word *adolescere* which means to grow or grow into adulthood. Adolescents are individuals who are transitioning from children to adulthood and experiencing physical and psychological development. Adolescents begin to abandon the attitudes and behaviors of children and prepare themselves into adulthood, beginning to interact with the wider environment such as school friends and play, as well as other social milieu (Hurlock, 1999).

Adolescence is a time in which a person is struggling with the problem of self-definition (Kroger, in Berman, 2011). They will explore the various options for identity formation and will gradually make commitments to specific roles, goals, and values. While Lerner and Lerner (2003) revealed that adolescence is a period in which individuals are undergoing restructuring of biological, cognitive, emotional, and social functions. In terms of biological function, adolescence is the period individuals are experiencing puberty that affect the changes in emotions and behavior due to the influence of hormones.

Adolescence is a period of development in which individuals can complete the process of identity formation effectively by using their cognitive abilities (Lloyd, 2002). According to Erikson (in Berman, 2011) suggests that the stage of adolescent psychosocial development is usually triggered by an existential crisis of adolescent struggle with the question of 'Who am I?' As youths will explore identity in various ways, they will gradually tend to make a commitment to certain roles, goals, and values that play a role in the formation of their identity

Emotional development is needed by individuals in interaction with their social environment. Since childhood emotional intelligence is needed to develop socio-emotional adjustment abilities (Brouzos, Misailidi, & Hadjimattheou, 2014). In adolescence, emotional intelligence has a role in psychological adaptability. The emotional intelligence of a teenager can be used to modify the choice and ability of the coping mechanism (Davis, Sarah & Humphrey, 2011).

### **Javanese ethnic**

The Javanese tribe is the largest tribe in Indonesia. Individuals with Javanese tribes are the native inhabitants of central and eastern Java Island who use Javanese in everyday life (Suseno, 1985). In social relationships, Javanese society is very closely related to the word "respect". Respect (*urmat*, *aji*) is an element in every social situation. Respect can be demonstrated in various ways such as posture, hand, tone of voice, greeting terms, and grammar used (Greertz, 1983). According to Hildreb

Greetz (in Suseno, 1985) Javanese society has two principles used in the pattern of association that is the principle of harmony and the principle of respect. The principle of harmony is a principle that aims to maintain harmonization in the community. The principle of harmony means being in a state of harmony, calm, peace, without dispute, without conflict, and unity to help each other. The word harmonious can also mean eliminating tension within society or interpersonally, so that social relations remain visible in harmony and well. To achieve harmony, the people of Java create norms of behavior that are expected to prevent the occurrence of emotions that can lead to conflict in community life.

There are some behaviors learned to avoid disputes that are cautious in expressing opposing or incompatible wishes or expectations with other individuals (eg rejecting one's wish indirectly) and the ability to communicate unpleasant things to others in a good way, so as not to hurt the individual (eg, reprimand the bad behavior of people in a subtle way but with well-conveyed messages). Furthermore, Javanese people tend to avoid disappointment by pretending or known by the term "ethok-ethok" namely the ability to not show actual feelings, especially negative feelings (for example: show a friendly smile on the people who are hated, trying to smile even in a state of sadness). All three forms are expected to create mutual harmony that put aside personal interests. Furthermore, the principle of respect is the principle that every individual should behave and speak respectfully to other individuals according to their degree and position. The degrees or positions referred to as young individuals should respect to the elderly and the older must have a sense of responsibility to the younger.

Three things that the Javanese adopt in situations that demand respect are "wedi", "isin", and "sungkan". "Wedi" means fear in terms of physical threat or uncomfortable for an action. "Isin" means shyness that is shy, feeling guilty for not being proper to a respected person. "Sungkan" has a meaning similar to "isin" but has a more positive sense of polite respect towards a boss or an unknown fellow. The Javanese people developed three attitudes that are signs of moral maturity that is patient, accept, and sincere. Patience means being able to wait for something until the time comes quietly. Accept is a strong individual's attitude of receiving bad luck without showing excessive emotion and still being able to live his life in that state. Sincere means willing to give up what is valuable and realize that the desire to defend it is an immature thought. The above three attitudes help one in carrying out principles that emphasize the interests of many people and not focus on self-interest (Suseno, 1985).

### **Research methods**

This research is a non-experimental quantitative research. Sampling technique in this research is non-probability sampling. This study aims to see the emotional intelligence of Javanese teenagers. This research uses one research variable that is emotional intelligence. Data processing technique is using descriptive statistical techniques. Respondents in the study amounted to 485 Javanese teenagers aged between 15-19 years who attend school in Yogyakarta Special Region. Of the total 485 respondents known 429 people (88.5%) were teenage boys and 56 people (11.5%) were teenage girls.

This research was conducted in March 2017 in the Special Region of Yogyakarta. The instrument used is the emotional intelligence questionnaire from Goleman (2006).

Based on Goleman's theory, there are 5 dimensions of emotional intelligence variables: (a) self-awareness, (b) managing emotions, (c) motivating oneself, (d) empathy skills, and (e) handling relationships. The emotional intelligence questionnaire has 60 items of statements consisting of 30 points of positive statements and 30 items of negative statements. The scale used in questionnaires that measure emotional intelligence is Likert scale that has five choices of answers are STS (Strongly Disagree), TS (Disagree), RR (Ragu-Ragu), S (Agree), SS (Strongly Agree).

From the filling questionnaire is known the greater score obtained by individuals on the dimensions of emotional intelligence means the higher emotional intelligence that the individual has. Conversely, the smaller score that individuals get on the dimensions of emotional intelligence means the lower level of emotional intelligence that individuals has. The results of the data show emotional intelligence consisting of five dimensions has alpha cronbach on self-awareness ( $\alpha = 0.572$ ), managing emotions ( $\alpha = 0.763$ ), motivating oneself ( $\alpha = 0.805$ ), empathy skills ( $\alpha = 0.734$ ), and handling relationship ( $\alpha = 0.813$ ).

## **Conclusion**

The description of data about emotional intelligence using a scale of 1 - 5 which has a hypothetic mean measuring instrument is 3. The empirical mean of emotional intelligence is 3.6383 or greater than the mean hypothetical value. The results of the data based on the dimensions of emotional intelligence known each dimension has a high average value.

The dimension of self-awareness has an empirical mean value of 3.4297 indicating that the subject has awareness to recognize feelings that occur well, and has the ability to monitor feelings from time to time to understand the psychological and other aspects of the self-understanding. The dimension of managing emotions has an empirical mean value of 3.6589 indicating that the subject has the ability to overcome feelings with the right that is useful to build self-awareness, so that subjects can more quickly rise from adversity or things that interfere in his life. The motivating oneself dimension has an empirical mean value of 4.0933. It shows that subjects have a tendency to be more productive and effective in doing things. The empathy skills dimension has an empirical mean value of 3.3347 indicating that the subject has the ability to empathize to adapt to social signals that indicate the needs or desires of other individuals. Dimension handling relationship has an empirical mean value of 3.6747 indicating that the subject has the ability to establish relationships and management of other individual emotions well. Subjects can also do everything well on every thing that relies on subtle interactions with other individuals.

Tabel 1  
*Emotional Intelligence Variables*

Dimensi	Minimum	Maximum	Mean	Std. Deviation
<i>Self-Awareness</i>	2,50	4,75	3,4297	0,31778
<i>Managing Emotions</i>	2,17	4,92	3,6589	0,43957
<i>Motivating Oneself</i>	2,33	5,00	4,0933	0,40371
<i>Empathy Skills</i>	2,33	4,33	3,3347	0,33186
<i>Handling Relationship</i>	2,25	4,92	3,6747	0,47944
Kecerdasan Emosi	2,77	4,62	3,6383	0,26948

Based on the data classification of emotional intelligence level subjects, it appears that most subjects have a high level of emotional intelligence. Based on frequency and percentage, subjects with low emotional intelligence amounted to 10 people with a percentage of 2.1% while the number of subjects with high emotional intelligence amounted to 475 people with a percentage of 97.9%.

From all result of research about picture of emotional intelligence in juvenile of Javanese tribe can be concluded that juvenile of Javanese tribe in Daerah Istimewa Yogyakarta have high emotional intelligence. These results indicate that the Javanese culture of teenagers in this study contributes to the high emotional intelligence that teens have with the Javanese.

This research is expected to encourage other researchers to conduct research on emotional intelligence from other ethnic groups in Indonesia.

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## *The Effects of Mental Imagery with Ocean Virtual Reality on Creative Thinking*

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### **Abstract**

Mental imagery in creativity has been regarded as facilitating insight in creative thinking, but several issues remain to be addressed to clarify the extent to which forms, abilities and strategies of imagery affect creative idea generation (Palmiero, Piccardi, Nori, Palermo, Salvi, & Guariglia, 2016). In this study, the issue of whether if Mental Imagery with Ocean Virtual Reality (MIOVR) can be an effective external support for creative thinking was explored. Participants ( $n = 30$ ) were graduate students in the course of Teaching for Creativity in National Taiwan Ocean University. Creative thinking skills were assessed via the administration of the Abbreviated Torrance Test for Adults (ATTA; Goff & Torrance, 2002). 20 participants finished two tests, separated by a week. Before the second test, they saw an 8-minute virtual reality film of the underwater world, and at the same time they were free to create Mental Imagery. After seeing the film, they had three minutes to paint any images in their mind. Findings indicated that a significant difference ( $p < .05$ ) between two tests existed, with post-test scoring higher than the pre-test on Creativity Index (CI), pre-test scoring as covariates. Narrative interviews and document analysis revealed that Mental Imagery with Ocean Virtual Reality could be used effectively to relax and involve in the mindfulness status. Finally, the differences of student creative performances on the ATTA test and their creative interests in daily life were discussed.

Keywords: Mental Imagery, Virtual Reality, Creative Thinking

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## **Introduction**

Creative ideas and individuals are often described as “imaginative”. Mental imagery has been regarded as facilitating insight in creative thinking, but several issues remain to be addressed to clarify the extent to which forms, abilities and strategies of imagery affect creative idea generation (Palmiero, Piccardi, Nori, Palermo, Salvi, & Guariglia, 2016). Mental imageries vary in style and content, in this study, we explore the relationship between mental imagery and creative thinking, and formulate hypotheses about the mechanisms through which types of mental imagery facilitate insight in creative thinking.

## **Psychological “Distance”**

Recent research approach about insight has been the use of neuroimaging methods. Kounios & Beeman (2009) indicated direct stimulation of right frontal-temporal cortex coupled with inhibition of left frontal temporal cortex enhanced solving of insight problems. They found insight-related resting-state brain activity might also provide a link to recent social psychological research on construal level. According to construal level theory, psychological “distance”—thinking about things that are far away in space or time, or about people that are different from oneself—engages abstract thinking (Trope & Liberman, 2010). This inspired us to investigate whether the mental set effect of right frontal temporal cortex can be increased by distance stimulation. Could beautiful underwater world stimulate insight depends relatively more on psychological “distance”?

## **Attentional Selection and Remote Associations**

In creative tasks, people need to flexibly switch between different processes, associations, or goals (Kounios & Beeman, 2014). Sometimes we need flexibly switch perception, demand relaxation of task shielding and keep open mind to distraction. Rowe, Hirsch, & Anderson (2007) argued that perceptual and conceptual attentions are closely linked. They indicated positive affect increase the breadth of attentional selection. Are stimuli in the Ocean Virtual Reality related to the breadth of attentional selection? Can Mental Imagery with Ocean Virtual Reality (MIOVR) make some change in the breadth or narrowness of attentional selection to include or exclude remote associations? This makes us curious.

## **Internal Focus of Attention**

Zedelius and Schooler (2016) indicated there is evidence that shifting to an internal focus of attention increases the likelihood of insights. Specifically, it was found that more frequent blinking while problems were visually displayed to participants predicted insight solutions as compared to analytic solutions. Participants also looked away from the problems more before insight compared to analytic solutions. Will this be possible to enhance students' creative thinking if we allow students to have more opportunities to shift to an internal focus of attention?

## **Method**

In this study, the issue of whether if Mental Imagery with Ocean Virtual Reality (MIOVR) can be an effective external support for creative thinking was explored. Creative thinking abilities were assessed via the administration of the Abbreviated Torrance Test for Adults (ATTA; Goff & Torrance, 2002; Chinese Revised by Charng-Yi Chen, 2006). All tests were scored by 2 research assistants (graduate students of education), trained in creativity tests scoring.

## **Participants**

Participants (n = 30) were graduate students in the course of Teaching for Creativity in National Taiwan Ocean University, minimum 25 years old, maximum 57 years old. The participants were informed about the study and could withdraw at any time.

## **Intervention**

20 participants finished two tests, separated by a week. Before the second test, they saw an 8-minute virtual reality film of the underwater world, and at the same time they were free to create Mental Imagery. After seeing the film, they had three minutes to paint any images in their mind. Through quantitative and qualitative data analysis, we compared the differences between two tests, and explored the differences of creative thinking between students.

## **Quasi-experiment design**

Limited to natural educational settings, the participants are not randomly assigned. This study adopted the time-series experiment involved taking measures of a single group for a predetermined period of time, then giving the group the experimental intervention, and then again taking measures of them. One group (n=24) accepted pre-test, experimental intervention, and post-test. The other group (n=6), no experimental intervention, only took the test once.

## **The Qualitative Data**

The Abbreviated Torrance Test for Adults (ATTA; Goff & Torrance, 2002; Chinese Revised by Charng-Yi Chen, 2006) test yields results for four norm-referenced abilities: Fluency, Originality, Elaboration and Flexibility. It also provides criterion-referenced creativity indicators for (a) verbal responses: Richness and Colorfulness of Imagery; Emotions/Feelings; Future Orientation; Humor-Conceptual Incongruity; Provocative Questions, and (b) figural responses: Openness-Resistance to Premature Closure; Unusual Visualization-Different Perspective; Movement and/or Sound; Richness and/or Colorfulness of Imagery; Abstractness of Titles; Context; Environment for Object, Articulatness in Story telling; Internal Visual Perspective; Expressions of Feelings and Emotions; Combination/Synthesis of Two or More Figures; and Fantasy.

## The Quantitative Data

All students work together to build a web-sharing platform (Facebook: Creative Mind), free to publish the ideas or creative thinking cases found around the world. Through narrative interviews and document analysis, their interests of creative thinking in daily life were explored.

## Major Findings

### Students' Creative Thinking abilities

Table 1 shows the descriptive statistics of participants' creative thinking.

Table 1 Descriptive statistics of participants' creative thinking abilities

		<i>N</i>	<i>Minimum</i>	<i>Maximum</i>	<i>M</i>	<i>SD</i>
1 <sup>st</sup> test	Fluency	29	13.0	19.0	16.9	1.8
	Originality	29	13.0	19.0	17.5	1.7
	Elaboration	29	13.0	19.0	17.5	1.6
	Flexibility	29	12.0	19.0	15.3	1.9
1 <sup>st</sup> test	Norm-referenced score	29	56.0	76.0	67.2	5.1
	Criterion-referenced score	29	.0	10.0	5.7	2.9
2 <sup>nd</sup> test	Fluency	21	14.0	19.0	16.6	1.7
	Originality	21	15.0	19.0	17.8	1.1
	Elaboration	21	17.0	19.0	18.2	0.9
	Flexibility	21	12.0	19.0	15.1	2.2
2 <sup>nd</sup> test	Norm-referenced score	21	59.0	76.0	67.7	4.2
	Criterion-referenced score	21	1.0	18.0	10.8	4.1
1 <sup>st</sup> test	Creativity index	29	57.0	85.0	72.9	7.4
	Creativity rank	29	3.0	7.0	5.8	1.5
2 <sup>nd</sup> test	Creativity index	21	60.0	89.0	78.5	7.2
	Creativity rank	21	3.0	7.0	6.5	0.9
	N (Completely excluded)	20				

### Differences between pre-test and post-test

Table 2 shows the differences between pre-test and post-test. Wilcoxon Signed-ranks test indicated that post-test scoring higher than the pre-test on Creativity Index (CI),  $Z = -2.339$ ,  $p < .05$ . There is no significant difference on Norm-referenced score.

Table 2 Summary of Wilcoxon Rank Signed test on participants' creative thinking

	2 <sup>nd</sup> -1 <sup>st</sup> test	<i>N</i>	<i>Mean Rank</i>	<i>Sum of Ranks</i>	<i>Z</i>	Asymp. Sig. (2-tailed)
Fluency	Negative Ranks	9	8.39	75.50	-1.469 <sup>a</sup>	.142
	Positive Ranks	5	5.90	29.50		
	Ties	6				
	Total	20				
Originality	Negative Ranks	7	6.93	48.50	-.255 <sup>b</sup>	.798
	Positive Ranks	7	8.07	56.50		
	Ties	6				
	Total	20				
Elaboration	Negative Ranks	2	6.25	12.50	-1.249 <sup>b</sup>	.212
	Positive Ranks	7	4.64	32.50		
	Ties	11				
	Total	20				
Flexibility	Negative Ranks	10	7.50	75.00	-.882 <sup>a</sup>	.378
	Positive Ranks	5	9.00	45.00		
	Ties	5				
	Total	20				
Norm-referenced score	Negative Ranks	9	11.17	100.50	-.656 <sup>a</sup>	.512
	Positive Ranks	9	7.83	70.50		
	Ties	2				
	Total	20				
Criterion-referenced score	Negative Ranks	2	4.25	8.50	-3.609 <sup>b**</sup>	.001
	Positive Ranks	18	11.19	201.50		
	Ties	0				
	Total	20				
Creativity index	Negative Ranks	5	7.40	37.00	-2.339 <sup>b*</sup>	.019
	Positive Ranks	14	10.93	153.00		
	Ties	1				
	Total	20				
Creativity rank	Negative Ranks	4	4.00	16.00	-1.218 <sup>b</sup>	.223
	Positive Ranks	6	6.50	39.00		
	Ties	10				
	Total	20				

\*  $p < .05$  \*\* $p < .01$

a. Based on positive ranks

b. Based on negative ranks

### Differences between different pre-test CI score groups

Consider pre-test may also be a possible source of testing effect, participants were divided into three groups according to the pre-test CI scores (less than 27%, higher than 73%, and the middle). Table 3 shows the summary of Kruskal Wallis test on creative thinking between different pre-test CI score groups.

Table 3 Summary of Kruskal Wallis test on creative thinking between different pre-test CI score groups

2 <sup>nd</sup> -1 <sup>st</sup> test differences	Group <sup>a</sup>	N	Mean Rank	Chi-Square	df	Asymp. Sig.
Creativity index	1	3	13.83	6.14	2	.05* Group2>3
	2	6	14.25			
	3	11	7.55			
Fluency	1	3	15.5	3.70	2	.16
	2	6	11.58			
	3	11	8.55			
Originality	1	3	14.83	4.47	2	.11
	2	6	12.75			
	3	11	8.09			
Elaboration	1	3	16.5	5.13	2	.08
	2	6	10.83			
	3	11	8.68			
Flexibility	1	3	13	2.64	2	.27
	2	6	12.67			
	3	11	8.64			
Norm-referenced score	1	3	16.33	7.44	2	.02* Group1>3 Group2>3
	2	6	13.33			
	3	11	7.36			
Criterion-referenced score	1	3	9.17	5.06	2	.08
	2	6	15			
	3	11	8.41			

- a. Group 1, pre-test CI score less than 27%  
 Group 2, pre-test CI score between 28%-72%  
 Group 3, pre-test CI score higher than 73%

Analysis of Kruskal Wallis test showed a main effect of pre-test CI score on Creativity index and on Norm-referenced score. Post hoc analyses indicated that Group 2 was higher than Group3 on 2<sup>nd</sup>-1<sup>st</sup> test difference of CI score. It showed that participants with average pre-test CI score made greater progress ( $p < .05$ ) on CI Score. And Group 1 & 2 was higher than Group3 on 2<sup>nd</sup>-1<sup>st</sup> test difference of Norm-referenced score. It showed that participants with lower pre-test CI score made greater progress ( $p < .05$ ) on Norm-referenced score. The other creative thinking indicators did not differ significantly between participants with different pre-test CI score.

## Content Analysis of Students' Creative Interests

During this semester (February to June, 2017), all students worked together to build a web-sharing platform (Facebook: Creative Mind), they were free to publish the ideas or creative thinking cases they found. Table 4 shows the percentage of major themes of students' creative interests. There are more than 300 articles in total (ongoing). Facilitate convenience/practical orientation, Create fun/surprise, Life Aesthetics, Hands-on Handmade are most popular themes. Many cases involve these four themes: practical, aesthetic, technology and environmental protection. Many cases are just for fun.

Table 4 Percentage of major themes of students' creative interests

Themes	<i>N</i>	%
Facilitate convenience /practical orientation	59	21
Create fun / surprise	43	14
Life _Aesthetics	29	10
Hands-on Handmade	25	8
Life-technology application	16	5
Unusual Uses	14	5
Innovative teaching / creative teaching	11	4
Paper creation	10	3
Tools of creative thinking	8	3
Design thinking _ creative problem solving	7	2
Environmental reengineering _ public/visual arts	7	2
Environmental protection _ actual action	6	2
Multi-media innovation performance	6	2
Maverick	6	2
Future Thinking	5	2
Creative advertising/ propaganda	4	1
Cross-border thinking	3	1
Maker education	3	1
Other: e.g., Learning experience	40	13

*N*=305

## Conclusion

Psychologists have long hypothesized that mental imagery may facilitate creative thinking, but like creativity, mental imagery is a multifaceted concept. Mental imageries vary in style and content, and not all kinds of mental imagery are likely to have the same effects on creative thinking. This study is the first step to explore the relationship between mental imagery and creative thinking. According to the literature, we formulated a hypothesis about the mechanism of Mental Imagery with Ocean Virtual Reality (MIOVR), emphasized psychological "Distance", attention breadth, remote associations, and internal focus of attention.

Findings indicated that a significant difference ( $p < .05$ ) between two tests existed, with post-test scoring higher than the pre-test on Creativity Index (CI), pre-test scoring as covariates. Participants with average pre-test CI score made greater

progress ( $p < .05$ ) on CI Score, and participants with lower pre-test CI score made greater progress ( $p < .05$ ) on Norm-referenced score.

We also analyzed the major themes of students' creative interests. There are more than 300 articles posted on the website (ongoing). Facilitate convenience/practical orientation, Create fun/surprise, Life Aesthetics, Hands-on Handmade are most popular themes. Many cases involve these key points: practical, aesthetic, technology and environmental protection. Many cases are just for fun.

Limited to natural educational settings, this study was a quasi-experimental design; the researcher didn't control over the assignment to conditions and completely manipulate the causal variable of creative thinking. Such limitations need to be reminded to readers. Future work will concentrate on different medium, such as different 3D movies presenting natural underwater world or unnatural horizons; detect the breadth of intentional selection and measures of neurophysiological activity; explore more individualized intervention or mechanism that can facilitate special students' creative thinking.

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***The Development of Indonesian Language Textbook Based on Multiple Intelligences Theory for Industrial Chemistry Department Students in SMK Negeri 1 Cerme***

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**Abstract**

Intelligence is included in aspects of individual differences. Gardner divided intelligence of human became eight categories, called multiple intelligences. Understanding of multiple intelligences can help students to recognize their prominent intelligence and develop their potential optimally. The purposes of research are to describe the development process, quality, and the effectiveness of Indonesian textbook based on the the theory of multiple intelligences for Students of Industrial Chemistry Department in SMK Negeri 1 Cerme. This research was conducted with Thiagarajan development model (definition, design, and development). Development process of the textbook encountered many problems, such as changing the validator. This problem impacts to the time efficiency during development. Based on the evaluation from the expert validator, teacher validator, and friend validator, the textbook has "good quality" with percentage 89,9% on the advisability aspect (eligibility, presentation, language, and graphic). Meanwhile, the effectiveness of Indonesian language textbook for Industrial Chemistry Department Students in SMK Negeri 1 Cerme is basically effective with percentage 77,5%. This result was concluded based on observation of teacher and students activity. After using Indonesian language textbook, students show a good result with completeness 90,4% in limited trials and 86,9% in extensive trials. Even, the students give a positive response to the textbook. The positive responses are evident from the assessment of textbook effectiveness in terms of content, presentation, language, and graphic. Students judge that the textbook is qualified "Highly Effective" with a percentage of 91.1%. Positive responses are also evident from the comments and suggestions of students who generally like the textbook.

Keywords: language textbook, language material, multiple intelligences, development process, quality, effectiveness.

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## 1. Introduction

In 1904, French psychologists discovered the first intelligence test that could measure objectively an individual's intelligence invented which could be expressed in terms of numbers or IQ (Intelligent Quotient) scores. However, Gardner (Armstrong, 2004, p.1-2) considered that the intelligence test have a low validity value because the assessment of intelligence tests is conducted outside the natural learning environment so that it could not be used as a differentiator of human potential. In fact, Denig (2004) mentions, IQ tests could not measure the ability of an athlete or pianist. For that, Gardner (Chatib, 2010, p.102) divides human intelligence into eight categories, namely linguistic, mathematical-logical, visual-spatial, musical, kinaesthetic, interpersonal, intrapersonal, and naturalist intelligence. The concept of multiple intelligences focused on the uniqueness in finding the talent of every child.

The intelligence of each student that can be found by the teacher can be used as a material to make learning more interesting. For example, choosing the reading material for students. In this case, reading materials can be student books or textbooks that can stimulate students' multiple intelligences.

Yulianto (2013) expresses that Indonesian Language Textbooks that was published by the Language Agency presented in a seemingly mechanistic order so it makes learning less effective. In addition to quality, Indonesian textbooks also do not reflect conformity with the type of intelligence that students have when textbooks can be a stimulus of the intelligence formation (Armstrong, 2009, p29). The point is that the target students are considered homogeneous so that the existing teaching materials in the textbook were presented without looking at the type of student intelligence. Students with musical intelligence tend to be indifferent and bored of receiving textbooks presented with the teaching material that is dominant to the type of intelligence of his friend, it is natural intelligence.

Indonesian subject is categorized as linguistic intelligence. This has an impact on the determination of a larger portion in writing the textbook. Adjustment demands to each type of student intelligence is not intended to feature the intelligence of naturalist students or music students, but to feature the use of students' intelligence to stimulate students' motivation in learning so that students increase their curiosity. However, this adjustment can also help students recognize their intelligence and improve their intelligences.

Based on the description, above the researcher developed an Indonesian textbook based on Gardner's multiple intelligence theory based on the 2013 curriculum. This research aims to produce a description of the development process, quality (content quality, presentation, design, and language), and effectiveness of Indonesian textbook based on the theory of multiple intelligences in the whole semester of the X class of Industrial Chemistry Department of SMK Negeri 1 Cerme Gresik. Specially, the existence of this textbook is also expected to give a thought contribution to the world of education in order to be more creative in maximizing the learning by using teaching materials in the form of a textbook which is fun for students.

## 2. Literature Review

### 2.1 Textbooks

Textbooks in schools are often labelled as student books. Textbooks become guidebook both in the process of study in the classroom and in the process of self-study which contains subject matter derived from the basic competencies in the curriculum (Trianto, 2007, p74; Prastowo, 2013, p168). Therefore, textbooks whose a main function as a reference in the learning process were written by Indonesian teachers so that it is contextual with the condition of students and classroom. Adjustment of textbooks to the needs of students can improve the ideal quality of a textbook (Richards, 2001, p256).

Textbooks have several roles in learning. The roles (State Cunningsworth in Tsiplakides, 2014) are described as follows:

- a) a resource for presentation material (spoken / written)
- b) a source of activities for learner practice and communicative interaction.
- c) a reference source
- d) a syllabus
- e) a resource for self-directed learning or self-access work.
- f) a support for less experienced teachers.

Prior to used in learning, textbooks need to be evaluated. There are several criteria in evaluating textbooks. Cunningsworth (in Tsiplakides, 2014) proposed the following criteria for the evaluation of course books:

- a) Coursebooks should be corresponding to learner's needs. They should match the aims and objectives of the language-learning program.
- b) Coursebooks should reflect the uses (present or future) learners will make of the language. Textbooks should be chosen that will help students use language for their own purposes.
- c) Coursebooks should take account of students' needs, without dogmatically imposing a "rigid" method.
- d) Coursebooks should have a clear role as a support for learning.

In addition, the National Standardization Agency of Indonesia also set some criteria for the textbooks assessment. These criteria include the content feasibility (material conformity with KI and KD, material accuracy, and supporting learning materials), language (conformity with level of students' development, communicative, ambiguity and unity of ideas, and the appropriateness of the use of the Indonesian Spelling General Guidelines), presentation (presentation of learning, and completeness of presentation), and design (book size, book cover design, and book content design) (BSNP, 2007).

## 2.2 Theory of Multiple Intelligences

In this case, Armstrong (2004, p20) stated that the theory of multiple intelligences was a cognitive model that seeks to explain how a person used his intelligences to solve problems and created products. In contrast to Armstrong, Jasmine (2012, p11) stated that multiple intelligences is an appreciation of individual differences. These differences become the basis of students in determining the main learning style in learning new things. As a result, each student has a different learning style (Denig, 2004). This multiple intelligence also has another name, namely SLIM-n-BIL on the proposal of De Porter, et al (2010, pp138-139). The following table shows the description of each intelligence (Amstrong, 2009, pp6-7; De Porter, 2010, pp138-139).

**Table 1. Multiple Intelligences**

Spatial-Visual	Thinking imaginatively and visually. This intelligence involves the ability to understand spatial relationships and mental images and accurately understand the visual world (drawing, sketching, scribbling, visualization, image, graphics, design, tables, art, videos, films, and illustrations).
Verbal-Linguistics	Thinking in words. This intelligence includes language skills for speaking, writing, reading, connecting, and interpreting.
Interpersonal	Thinking through communication with others. This refers to "human skills" that can be easily done such as reading, communicating, and interacting with others.
Musical-Rhythmic	Thinking through rhythms and melodies. Gardner said "There are several roles that can be taken by the musical individuals of the <i>avant garde</i> composer who are trying to create new idioms to inexperienced listeners who try to understand the nursery rhymes."
Naturalist	Thinking in natural references. This intelligence is a newcomer to Gardner's intelligence. This intelligence concerns one's connection with nature that can see relationships and patterns in the natural world and interact with natural processes.
Body-Kinesthetic	Thinking through sensations and physical movements. This intelligence is an ability to control and use the physical easily and nimble.
Intrapersonal	Think reflectively. This intelligence refers to a reflective awareness of the feelings and processes of self-thinking.
Logical-Mathematical	Thinking reasonably. This intelligence involves problem solving logically, scientifically, and mathematically.

Gardner (Armstrong, 2004: 19) explained that the model of multiple intelligences he made was a temporary formulation. Gardner's statement is evidenced by the discovery of the ninth intelligence, namely the existential intelligence. Gardner & Hatch (1989) defined existential intelligence as the ability to solve life problems and social situations. The intelligence is complementary to eight intelligences before. However, existential intelligence is not used in this study because it is related to the problem constraints.

This multiple intelligence is the basis for the development of textbooks. Phillips (2010) states various student-centered textbooks through the use of multiple intelligence theory can improve learning outcomes. Good results can occur due to the fulfilment of textbook content to student needs and learning objectives (Sheldon, 1988).

### **2.3 Effectiveness**

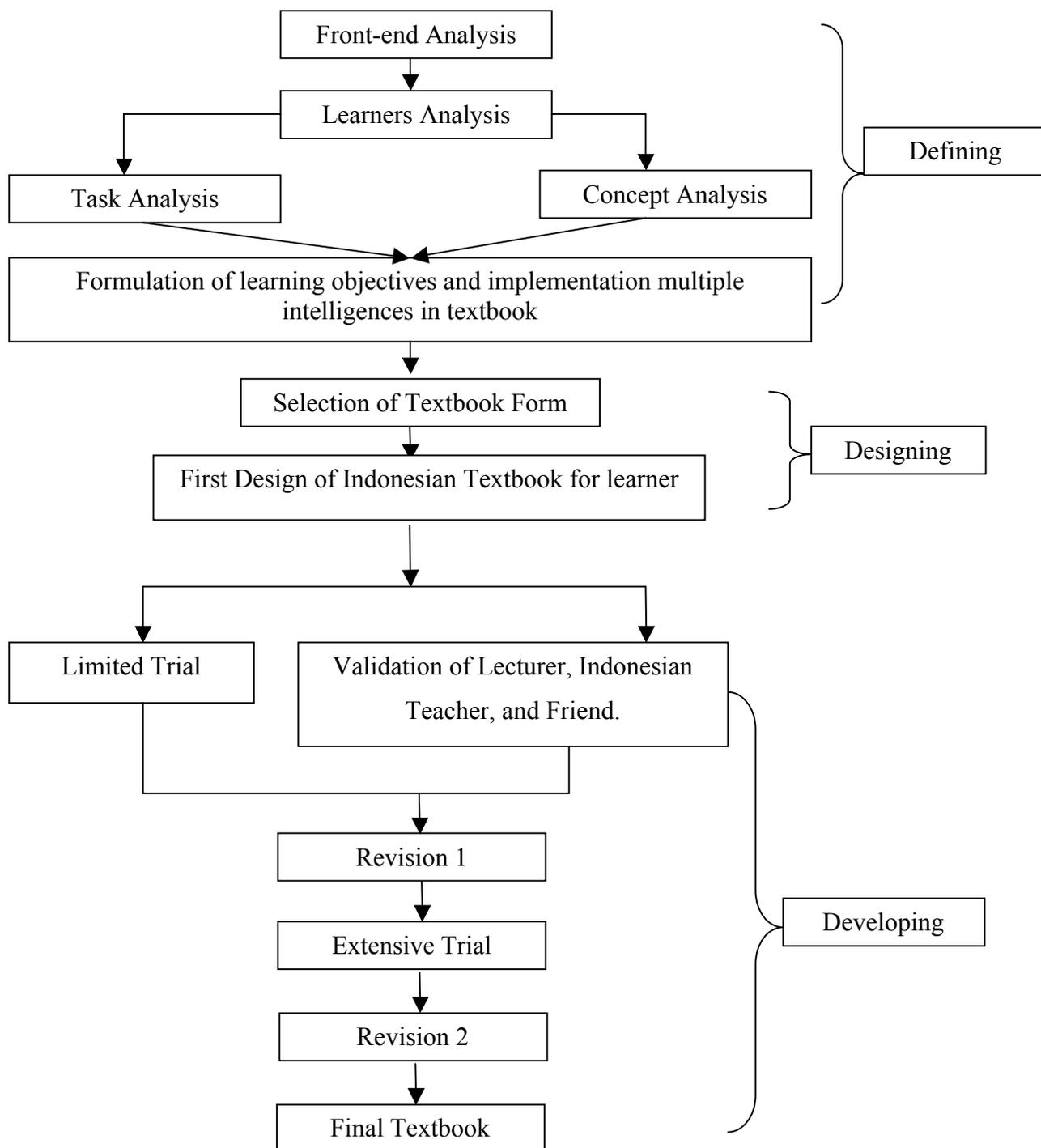
Effectiveness comes from the word effective. In the world of education, the term effectiveness is commonly used to state the final state of a thing. The conditions include the best or worst final conditions in the implementation of activities.

The effectiveness of Indonesian textbooks based on the theory of multiple intelligences is reviewed in terms of responses and interests of students in learning. In Big Indonesian Dictionary (2008, p1170), response is a reaction. Associated with the previous thing, the response is defined as a reaction of students to learning activities using Indonesian textbooks based on the theory of multiple intelligences. Students' responses include responses to content quality, presentation, language, and design. The students' responses indirectly leave an impression after using the product.

Meanwhile, student interest is the indicator of the need that motivates the act of learning and determines the success of student learning (Hamalik, 2007, p122). Effective textbooks to be applied can be seen from high student interests during learning.

### **3. Methodology**

The research was carried out with the method of research and development because it was oriented to produce and test the effectiveness and quality of products in the form of textbooks (Sukmadinata, 2010, p164). The development model used was 4-D (define, design, develop, and disseminate) because it could run synergistically with the purpose of developing research that was to develop textbook of Indonesian language based on multiple intelligence (Thiagarajan, 2007, p66). However, this research was only conducted until the development stage because disseminate aspect will be conducted in the second phase of research. Here is a chart of the research design which was undertaken.



**Chart 1. Thiagarajan 3-D Development Model (Trianto, 2007, p66)**

First, the defining phase, the steps taken were front-end analysis (using the 2013 curriculum and the theory of multiple intelligences), student analysis (age, academic ability, intelligence type, and learning motivation), task analysis (detailing the content of teaching materials in the outline form), conceptual analysis (making KD concept map adapted to KI-KD of Indonesian subjects for SMK Class X Semester 2), and analysis of learning objectives (converting task analysis and concept analysis into specific, more operational learning objectives).

Second, the design stage included two steps, they were the selection of textbook format / preparation of the text and the initial design of textbooks. The textbook development format followed the developed book format. The writing of textbook was followed by initial design as the main activity.

Third, the development stage was conducted to produce an Indonesian textbook of class X semester based on the theory of multiple intelligences in curriculum 2013. In this stage, the researcher conducted the validation, textbook testing, and revision. Textbook validation includes the content feasibility, presentation, language and design conducted by lecturers, teachers of Indonesian subjects in SMK Negeri 1 Cerme, and peers. Meanwhile, limited trials with a total of 8 students were conducted simultaneously with validation by experts, while extensive trials with 32 students were conducted after revisions of the limited trial and expert validation results.

This development research was conducted in SMK Negeri 1 Cerme with the subject of X class study of Chemical Industry Department semester 2. The number of students of class X KI-2 SMK Negeri 1 Cerme is 32 students, 14 girls and 28 boys.

Data collection techniques that were used in this study were differentiated based on the problem to be studied. Therefore, there are several collection techniques used. The techniques were documentation, questionnaires, observations, and tests. The questionnaires were divided into three, namely MI specific questionnaires that were adapted in Amstrong (2009, pp35-38), textbook quality questionnaires, and student response questionnaires. Questionnaires of textbook quality are still differentiated based on validators who rate textbooks, ie questionnaires for lecturers, questionnaires for Indonesian language teachers, and questionnaires for peers. Observations were made while conducting extensive trials. The test used in this study was divided into two, namely performance tests and formative tests. Performance tests were conducted during the learning activities so that students did not feel that they were doing tests. Meanwhile, formative tests were performed when the student had held a learning activity at the end of basic competence.

The development process was analysed by qualitative descriptive method. Existing documents were used to reinforce the description of the development process. Data validation results from lecturers, Indonesian teachers, peers, student questionnaires, and observation sheet recapitulated, analysed in quantitative descriptive, then analysed by using the formula.

$$A = \frac{\text{Total score}}{\text{Maximum score}} \times 100 \%$$

A = Assessment

The result of the calculation was adjusted to the qualification of the assessment in the table.

**Table 2. Assessment Qualification**

<b>Achievement Level</b>	<b>Qualification of Quality</b>	<b>Qualification of Effectiveness</b>
81–100 %	Very feasible	Highly Effective
61–80 %	Feasible	Effective
41–60 %	Feasible enough	Effective enough
21–40 %	Less feasible	Less effective
0–20 %	Very less feasible	Ineffective

Student learning outcomes were obtained from the students' test scores consisting of performance tests and a description test on a formative test. The results of this student learning were analysed in quantitative description with mean and standard deviation formula. Furthermore, the average student scores and student grades as individuals were adjusted to the criteria or benchmarks in the achievement of graduation (Nurgiyantoro, 2011, p219).

**Table 3. Criteria of Student Achievement**

<b>Percentage Interval Level</b>	<b>Value of Ten Scale</b>	<b>Description</b>
96–100	10	Perfect
86–94	9	Very Good
76–85	8	Good
66–75	7	Enough
56–65	6	Average
46–55	5	Almost Medium
36–45	4	Less
26–35	3	Very Less
16–25	2	Poor
1–15	1	Very Poor

## **4. Result and Discussion**

### **4.1 Development Process**

The students of class X KI-2 SMK Negeri 1 Cerme had active characteristics. They possess good affection ability with the evidence of all tasks and activities provided in a timely and responsible manner. The students of class X KI-2 SMK Negeri 1 Cerme mostly came from Gresik regency. Their average age is 16 years. The age of 16 years included is categorised in adolescents. Teen age is characterized by active motion and high curiosity.

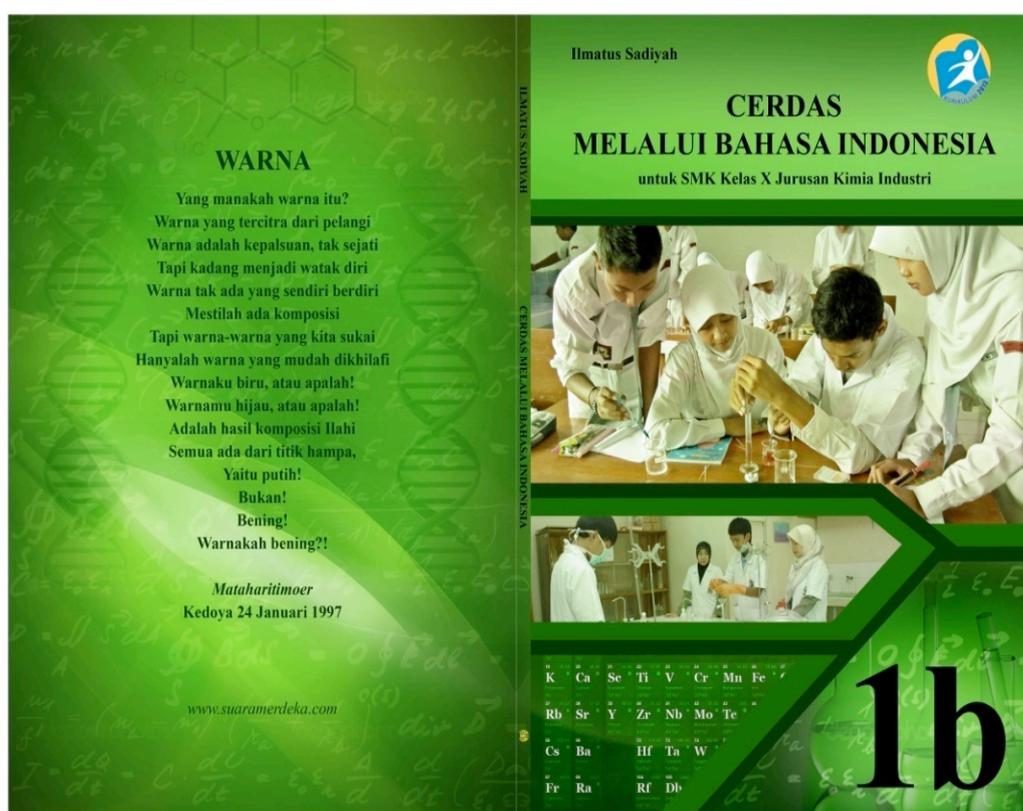
In addition, students were also based on the intelligence they have. It was done to generate conclusions about the dominant intelligence in each student and the tendency of intelligence in the classroom. The conclusion also facilitates the application of multiple students' intelligence in developed textbooks.

**Table 4. Type of Learners Intelligence**

No	Type of Intelligence	Amount
1	Linguistics	4
2	Logical-Mathematical	12
3	Visual-Spatial	7
4	Kinesthetic-Body	4
5	Musical	6
6	Interpersonal	12
7	Intrapersonal	12
8	Natural	3

Students have diverse intelligences. However, some students also have the same intelligence as other friends in one class. The dominating intelligence of each student varies and many factors influence it. Students show the dominance of logical mathematical intelligence, interpersonal intelligence, and intrapersonal intelligence. Furthermore, the intelligence explored in the development of textbooks based on the theory of multiple intelligences, namely logical-mathematical intelligence, interpersonal intelligence, and intrapersonal intelligence. The textbook material developed for the second semester X class was the material related to anecdotal text and negotiation text.

The selected format was materially adapted to the national standard textbook set by BSNP. Books were made in 21 cm x 29.7 cm. What distinguishes it from other textbooks is the fun element that exists in textbooks based on the theory of multiple intelligences.

**Picture 1. Cover of the Textbook that Developed**

Meanwhile, the theory of multiple intelligences as the basis of textbook development was applied in textbooks in two ways, as a whole component and a as a composite component with the whole component (sub-material textbook). The first stage was used for intelligence that cannot be applied to the textbooks' core components. The second stage was used for intelligence that can be melted into the core components of textbooks. The following is the application of multiple intelligences in textbook components.

**Table 5. Application of Multiple Intelligences in Textbooks**

<b>Aspect of Intelligence</b>	<b>Textbook Components</b>
Language intelligence	The materials about anecdote text and negotiations Column: Is this sentence effective?
Logical-mathematical intelligence	Column: Is this sentence effective? Quiz column
Spatial-visual intelligence	Textbook color Picture illustration in textbook Mind map
Kinesthetic intelligence	Drama Activity of opera class. Stand up comedy
Musical intelligence	Anecdote text is in the form of song lyrics Music during learning in music cassettes
Naturalist Intelligence	Apple questions Activities at the school park
Intrapersonal intelligence	Reflection Apple questions
Interpersonal intelligence	Training in groups

There are two themes that are used according to the number of chapters in the textbook, namely "Explore the World of Chemical Industry" in chapter one and "Become a Doer of Industry" in chapter two.



**Picture 2. Chapter in the Textbook**

Based on the validation and testing of the textbook "Cerdas melalui Bahasa Indonesia", there are some improvements of the textbook. These improvements are in the aspect of content, presentation, language, and design.

- a) Changing the short text
- b) Simplifying how to use the book
- c) Sorting the material in the mind map
- d) Changing the exercises in textbooks
- e) Fixing the command in the instruction of the exercises
- f) Fixing the command line in the column 'I am Intelligent' and 'My Own Characters'
- g) Replacing biographies of foreign figures in chapter two
- h) Replacing the cover of every chapter
- i) Changing the picture of alpha zone in chapter two
- j) Fixing the use of spelling
- k) Changing the front cover design of a textbook
- l) Simplifying the content design appearance of textbook

#### **4.2 The Quality of Textbook**

Textbooks were judged on four aspects, namely eligibility, namely content, language, presentation, and design. Appraisers came from three different validator levels (expert validator, Indonesian language teacher, and student). The results of the judgment varied. The assessment is shown in the following table.

**Table 6. The Assessment of Quality Textbook**

No	The Kind of Quality	MS	Expert			Teacher			Friend (College Student)		
			TS	QS	CR	TS	QS	CR	TS	QS	CR
1	Content	72	62	86.1%	VF	57	79.1%	F	69	95.8%	VF
2	Language	60	55.5	92.5%	VF	50	83.3%	VF	59	98.3%	VF
3	Presentation	44	41	93.2%	VF	38.5	87.5%	VF	43.5	98.9%	VF
4	Design	148	126.5	85.5%	VF	125	84.5%	VF	139	93.9%	VF

Note:

MS : Maximum Score

TS : Total Score

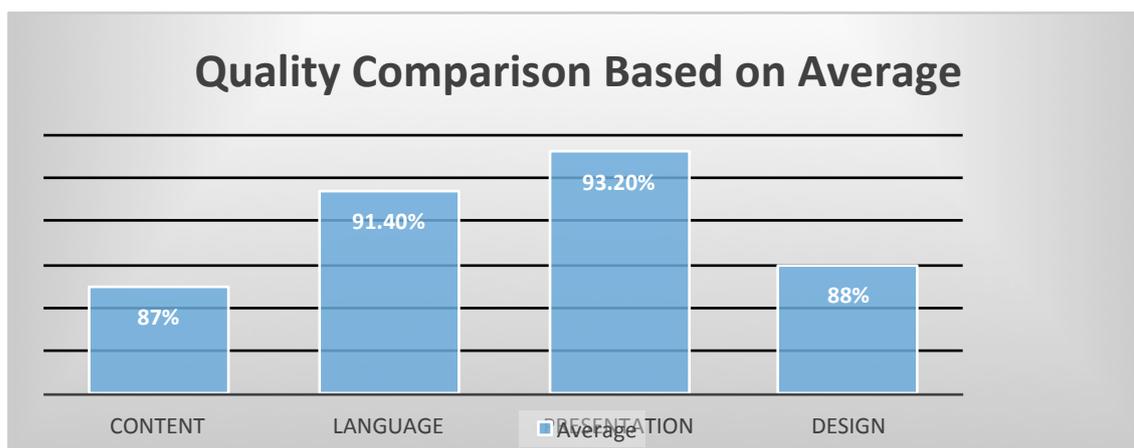
QS : Quality Score

C : Criterion

VF : Very Feasible

F : Feasible

In general, textbook of "Cerdas melalui Bahasa Indonesia" is very eligible to be developed and applied further in Indonesian language learning. On all aspects of eligibility, all scores were above 90%. The achievement of the score was not only from expert validators, but also from Indonesian language teachers, and students as research associates. The highest feasibility aspect was the aspect of presentation that was assessed by the student while the lowest aspect on the content aspect was assessed by the Indonesian teacher. The lowest value was qualified viable. Indonesian teachers considered that textbooks still need to be added the materials that support learning effectively even though there are elements of multiple intelligences. Teachers advised that the essence of textbooks is a material that adds insight into the linguistic language of the students. Expert validators also asked to combine between the subject matter and multiple intelligences to be the characteristic of the textbook "Cerdas melalui Bahasa Indonesia ". It was also done in the revision phase.



**Chart 2. Quality Comparison**

The quality of textbook "Cerdas melalui Bahasa Indonesia " is the best on the presentation aspect. Meanwhile, the lowest is the content aspect. That part became a consideration in making the final stages. Nevertheless, this textbook has been well-rated and very feasible for use by validators. Therefore, this textbook is ready to be tested widely to students of SMK Negeri 1 Cerme.

**4.3 The Effectiveness of Textbook**

Trials were conducted twice, ie, limited trials and extensive trials. The material used was anecdote text because the students of class X KI 2 were still studying it when data collection was collected. Basic Competence (KD) that was tested was KD 1 (Understanding the structure and rules of anecdote text both oral and written) and KD 2 (Comparing anecdotal text either oral or written). From both trials, the data were generated in the form of student scores as follows.

**Table 7. The Score of Students**

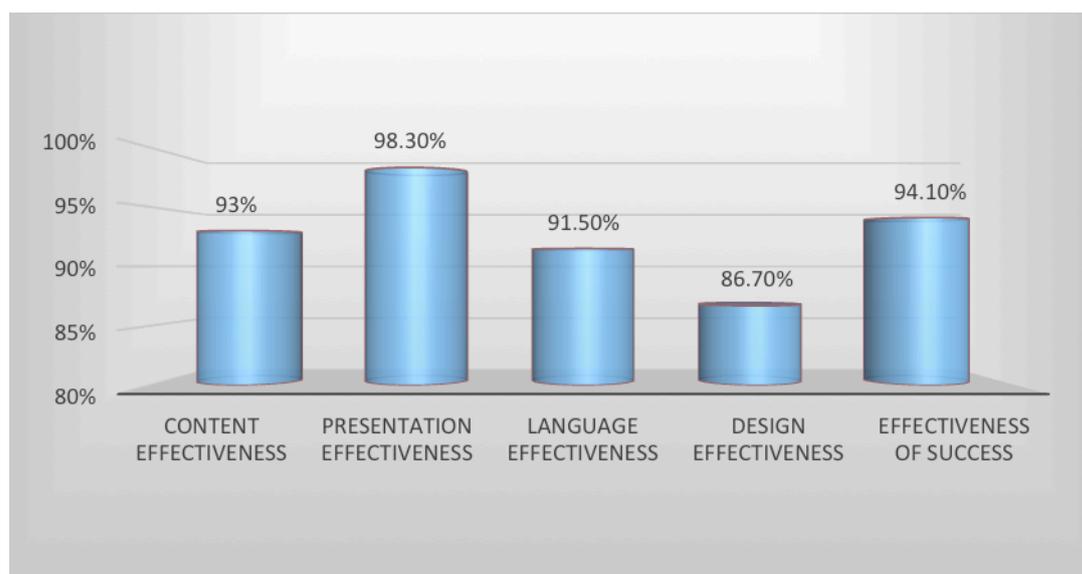
No	The Phase of Trials	TA KD 1	TA KD 2	NA
1	Limited Trial	92,1	85	90,4
2	Extensive Trial	96,2	82,4	86,9

Based on the contents in the table, the student score at the end of the learning was very good. It shows that the textbook "Cerdas melalui Bahasa Indonesia" is effectively used in learning. However, the average grade end-grade had decreased from the limited trial to the broad trial. The decrease was triggered in the lesson of KD 2, the students did not understand the procedure of comparing anecdote text with other texts. However, the decline is still within the limits of effective standards.

Beside using the test, the effectiveness of textbook use in learning was also assessed from observation. The observations were conducted by the Indonesian teachers at SMK Negeri 1 Cerme. From that observation, an assessment was obtained 77.5%.

The assessment was categorized as effective. The overall points in the observation sheet got a good rating (lowest score) and excellent (highest score). The results of the assessment on the observation sheet support the students' learning outcomes that show less significant improvement in the outcomes.

Furthermore, students also gave respond using questionnaire. The students' response measures the level of the effectiveness aspects of content, presentation, language, design, and level of student success after using Indonesian textbook based on the theory of multiple intelligences.



**Chart 3. Student Response**

In general, the average of student response to textbooks was excellent. However, there is one that has not been balanced with other aspects, namely aspects of graft. This section concerns to researchers in improving textbooks into final textbooks.

In the questionnaire, students also provide written responses in the form of criticism and suggestions. Overall, responses consist of both positive and negative responses. In the content aspect, students consider the reading that was presented was interesting so they are motivates and likes to read them (effective), but they also assume the text of the story was less interesting (less effective). In the presentation aspect, students consider the presentation of the contents in this book is interesting and organized (effective). In the language aspect, students assume there are still some sentences that are difficult to understand because it uses a figure that is not familiar (less effective). In the aspect of design, students consider the cover of the book is less interesting (less effective) and some others like the colour of his cover (effective).

The average of student response about the language aspects and textbook graffiti indicates less effective qualifications. This is due to the result of Indonesian textbook product development based on the theory of multiple intelligences which has been tested in the form of draft II and given to the students in the minimal form and not the whole text book.

Meanwhile, on the delivery aspect, students consider learning is less entertaining or use existing media (less effective). However, students also assessed Indonesian textbooks based on the theory of multiple intelligences educate students to be better and improve the spirit of reading because there is a biography of figures.

## 5. Conclusion

Based on the results of research and discussion, it can be concluded that the textbook of Bahasa Indonesia for SMK class X Department of Industrial Chemistry based on the theory of multiple intelligences with the title "Cerdas Melalui Bahasa Indonesia " has been developed and very feasible to use in learning broadly.

The process of developing textbooks "Cerdas Melalui Bahasa Indonesia " has been developed based on the Thiagarajan 3P development theory, which is defining, designing and developing. Each stage has been well implemented so it produces a final text book that is very feasible to be applied in learning. In the defining phase of the analysis activities to design textbooks, the analysis of the front end, student analysis, task analysis, concept analysis, and analysis of learning objectives. The entire analysis activity refers to the 2013 curriculum and Gardner's multiple intelligence theory. At the design stage, the activities of formulating textbooks and the initial textbooks were prepared. Meanwhile, at the development stage, activities of validation, testing, and revision were carried out. That stage is the last stage that determines the quality of the final textbook.

Book quality shows a good percentage. The eligibility of the content is categorized as "Very Eligible" with 87% percentage, the feasibility of categorizing "Very Eligible" with the percentage of 93.2%, the eligibility of categorized "Very Eligible" with percentage 91.4%, and the feasibility of categorizing "Very Eligible" 88%.

The effectiveness of textbooks " Cerdas Melalui Bahasa Indonesia " is based on observations of teacher teaching activities and students 'learning activities from the beginning to the end of the learning and 91.1% students' assessment with the category of "very effective".

The textbook " Cerdas Melalui Bahasa Indonesia " which has been developed is expected to serve as a reminder for teachers to provide an active portion of developing students' intelligence as a provision to recognize themselves. It also helps to improve students' motivation in learning Indonesian language.

Other researchers who conduct textbook development research need to take note the validator qualification standards that are clear and truly experts in the field of textbook writing. It is also expected to follow up the development of textbooks of Indonesian for SMK class X Department of Industrial Chemistry based on the theory of multiple intelligences from other researchers by providing better motivation or new creativity because of the existence of textbooks of SMK in accordance with each department, especially the Department of Chemistry Industry that is still rare. Textbooks should also be tailored to the needs of students relating to the multiple intelligences and the basic competencies that exist because each level of education or majors has different needs that cannot be equated.

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## ***Causes of Bullying: A Comparison of Teacher and Student Perspectives***

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The Asian Conference on Education 2017  
Official Conference Proceedings

### **Abstract**

The aim of this study was to determine any variances between teacher and student perspectives of bullying's causes. This study indicated that the perspectives of teachers and students were consistent regarding that victims' negative behaviors are the main cause of school bullying; hence, all participants tended to blame the victims. These findings have several implications. Firstly, for those who bully others for fun, teachers should enhance the definition of school bullying and ensure that students understand body boundaries. Students may be ignorant of their bullying behavior and view it as a game. Second, when relational issues cause bullying, teachers should intervene and determine the reasons for the bullying. They should also assist not only victims but bullies to improve their interpersonal relationship skills, including teaching bullies how to get along with peers that they dislike and how to deal with conflicts without violence. They should tutor victims on proper hygienic habits, the way they interact with others, etc. Increasing general awareness and bettering the bullies' and victims' negative actions will help prevent school bullying.

Keywords: school bullying, different perspectives, bullying prevention

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## Introduction

School bullying is a pervasive problem in many countries (e. g., Borotrager, Davis, Bernstein, & Gorman, 2009). Based on the findings of HBSC survey, 9% of young people have been bullied at least two or three times a month at school. (Currie et al., 2011). Students suffer from mental or physical problems due to school bullying. Thus, preventing school bullying could be an urgent matter.

Researchers around the world have devoted themselves studying the issue. In the previous studies, the majority of them put emphasis on exploring and investigating the influences on bullies and victims, the roles of bullying, the association between school climate and school bullying, teachers' attitudes toward bullying (Forsberg, Samuelsson, & Thornberg, 2014; Graham, Juvonen, 2014; Thornberg, 2010; Huitsing, Lindenberg, Sainio, & Veenstra, 2014). The ones related to causes of bullying were comparatively the minority. However, understanding bullying causes could be beneficial to prevent school bullying. First, it assists teachers to notice at-risk students so that teachers would be able to prevent the bullies' action in advance. Further, it assists teachers to figure out and protect the potential victims to create a safe and peaceful learning environment. Second, the findings of the present study could be resource in pedagogical. For instance, teachers could take advantage of the findings to instruct the students to learn how to avoid involving in bullying via discussion and situational exercise. Thus, understanding the causes of school bullying is essential for bullying prevention.

According to a previous study, teenagers attributed school bullying to seven dimensions: Reaction to deviance, social positioning, work of disturbed bully, revengeful action, an amusing game, social contamination and thoughtless happening (Thornberg, 2010). Other studies related to bullying causes indicated that students viewed the appearance, weird behavior and specific characteristics such as costumes, skin color, weird speech, and being stupid or odd, as the primary reasons to be bullied. (Knutsen & Thornberg, 2011)

Compared to the previous studies, researchers mostly discussed bully causes from students' perspectives (Guerra, Sadek, & Williamson, 2012 ; Knutsen & Thornberg, 2011; Thornberg, 2010). The ones from teachers' perspectives are relatively insufficient. To eliminate the gap and expand the findings, studying the causes from teachers' perspectives could be important. Moreover, to compare the different perspective of bullying causes could be beneficial to clarify the gray area of bully that teachers ignored. Consequently, it assists teachers to use more proper strategies to deal with school bullying. Once we realized more about bullying causes, it's expected that the workshop held at school would no longer be "an introduction to bullying". That is, the content of the workshop could talk more about the approaches to deal with school bullying according to specific causes. In summary, the present study aimed to investigate the different perspectives from teachers and students and explore the most common bullying causes so as to extend the findings. Second, providing some suggestions to deal with school bullying according to the most common bullying causes.

## Conclusion

The result of ABCS was showed as Table 1 in terms of teachers and students. Based on Table 5, it revealed that most teachers view “*revengeful action*” as the dominant cause ( $D = -0.72$ ). The victims may offend the friends of bullies; consequently, bullies bully others for their friends. The following was “*disliking the victims’ behavior*” ( $D = -0.69$ ). The behavior could attribute to the bad habits of victims. For instance, they may have such bad personal hygiene as making their seats messy, being sloppy, smelling bad, and so on. Besides, negative personality, such as being awkward, dumb or weird were included as well. (Erginoz, Alikasifoglu, Ercan et al, 2013; Thornberg, Rosenqvist, & Johansson, 2012; Thornberg, 2010; Thornberg & Knutsen, 2011) The third dominant bullying cause was “*bullying others for fun*” ( $D = -0.55$ ). On the other hand, teachers would be less likely to view “*extorting for money and stuff*” ( $D = 2.18$ ), “*feeling stressful*” ( $D = 1.12$ ) and “*have something on the victims*” ( $D = 0.87$ ) as the causes leading to school bullying. In terms of students, the top 3 dominant bully causes were “*the victims have offended the bullies*” ( $D = -0.61$ ), “*disliking the victims’ behavior*” ( $D = -0.48$ ), and “*bullying others for fun*” ( $D = -0.46$ ). On the contrary, “*feeling stressful*” ( $D = 0.80$ ), “*imitating others*” ( $D = 0.51$ ) and “*extorting for money and stuff*” ( $D = 0.44$ ) were the on the bottom of the rank.

Table 1. The difficulty(D) of ABCS

item	teachers	students
1. imitating others	-0.153	0.514
2. enhancing bullies' power and status	-0.072	0.074
3. extorting for money or stuff	1.282	0.442
4. bullying others for fun	-0.551	-0.463
5. love issues	0.433	-0.044
6. feeling jealous	0.234	-0.155
7. revengeful actions	-0.720	-0.150
8. finding a vent	-0.374	-0.095
9. self-protect/ don't want to be bullied	-0.246	-0.039
10. feeling stressful	1.123	0.797
11. disliking the victims' behavior	-0.690	-0.475
12. unsociable victims do not fit in with classes and/or groups well	-0.327	0.123
13. the victims have offended the bullies	-0.414	-0.612
14. have something on the victims	0.865	0.353
15. unsolved relational issues or problems between bullies and victims	-0.390	-0.272

According to the results, both teachers and students had consistent opinion to recognize “*bullying others for fun*” as well as “*disliking the victims' behavior*” as the dominant bullying causes. Nevertheless, there was one difference among them. When teachers were dealing with the conflicts among students, they found that students would stand out when their friends were picked on. Hence, it could be easier for teachers to notice the causal relationship so as to viewed “*revengeful action*” as one of the major cause. In terms of students, they involved and witnessed the process, so they may have a clearer image of the context. Therefore, they tend viewed “*the victims have offended the bullies*” as the dominant bullying causes.

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## ***STEM Education in English: A Case Study of a Japanese Technical College***

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Asian Conference on Education 2017  
Official Conference Proceedings

### **Abstract**

Attempts to teach subject courses in English have become more widespread in Japanese universities. Methods such as Content and Language Integrated Learning (CLIL) is sometimes used to educate students in subject knowledge as well as English language. However, such practices hardly exist in Japanese technical colleges, where students are educated in vocational mechanical and engineering subjects. In view of the fact that technical colleges supply workers and engineers to rapidly globalizing technical fields, it is important for technical colleges to educate students to gain specialist knowledge and communication skills in English and Japanese. This paper reports one such attempt at a Japanese private technical college, where science courses are taught in English. The purpose of this paper is to report results from a research designed to gauge how much science learning was achieved in English-medium subject courses and whether English was a barrier in learning such subjects. We compared grades of 112 first year students who took English-medium courses and Japanese-medium courses in academic year 2016-17. We also analyzed course feedbacks and project assignments of the students. The results show that overall grade average of students in English-medium classes and Japanese-medium classes did not differ significantly. However, academically lower achievers may find English-medium classes more challenging. The grades and feedbacks of individual students indicate that students can gain sufficient subject course knowledge and technical abilities from English-medium courses. Research limitations do exist, but the results suggest the possibilities of educating subject courses to technical college students in English.

Keywords: STEM Education Active Learning English for Specific Purpose (ESP)  
Multicultural education Technical College

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## Introduction

In the 21st century, STEM and English form two pillars of education. Ever since Judith Ramaley coined the word STEM to refer to the education of science, technology, engineering, and mathematics in 2001, the importance of STEM education has been recognized in the U.S. and other developed and developing countries<sup>1</sup>. Japanese government has been emphasizing the importance of English education, and English medium language education has been introduced since the last Course of Study for upper secondary education. Even for Japanese Technical colleges, globalization is regarded to be essential, and the suggestions for Technical Colleges include special subject education taught in English (Committee of Research Supporters on Enriching Technical College Education, 2015<sup>2</sup>). There are now a few study concerning STEM education of non-native English speakers (Hoffman, Zollman, 2016). However, as far as we know, there is no study about English medium special education in a Japanese Technical College. This paper focuses on physics and chemistry courses taught in English to year 1 students (15-16 years old), in a Japanese private technical college.

## Background

In May 2016, Education Ministers of G7 countries met in Kurashiki, Japan, and reached consensus on “the education paradigm for the future” which they published as Kurashiki Declaration (MEXT, 2016). In the declaration, one of the areas they stressed is the importance of improving the “links between education/training and employment in a technology-intensive world” by promoting education and training in ICT and STEM fields. They also recognized the need for integrating STEM with “other fields including art and design to encourage flexible thinking, risk-taking, and creative problem solving.” In their declaration, such education has to be conducted with the awareness of globalized world and international interaction for students as well as teachers.

STEM education is taught in Japan in science stream of Technical High Schools, science stream of normal high schools, government designated Super Science High Schools, and technical colleges. Although STEM education in globalized society is emphasized, there is no report on STEM education in high school taught in English except for English science presentation skills, English lessons about scientific topic, and short overseas science programs. Even in a governmental report on Super Science High Schools, there is no mentioning of the practice or recommendation of teaching STEM in English.(MEXT, 2017)

Teaching science subjects in English has its own challenges. One of the challenges is emotional effects felt by non-native speaking students who are taught in English. A survey was conducted to investigate changes in positive and negative effects for English Learning for year 1 new students at Kanazawa Technical College (KTC). This survey measured 1) Emotional experience about English, 2) Self-esteem in English Class, and 3) Anxiety in English Classes (Shiotani, 2014). Shiotani found that

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<sup>1</sup> Address by President Barack Obama (March 23, 2015) in “Science, Technology, Engineering and Math: Education for Global Leadership” by U.S. Department of Education, <https://www.ed.gov/stem>

<sup>2</sup>高等専門学校の充実に関する調査研究協力者会議, 2015

Students of this survey were more anxious about English language education at the beginning of the year, and they had less self-esteem. Although the survey shows that the anxiety level was reduced by the end of the year for all students, the degree of reduction was the smallest for electrical engineering department students.

**Current Study**

**Institution**

This research has been conducted at a private technical college, Kanazawa Technical College (KTC), where English medium education forms a part of its curriculum. KTC is a college of technology, which is a special kind of school in Japan that is different from technical colleges in other parts of the world. A college of technology provides graduates with an Associate’s degree upon graduation, but that degree also includes three years of high school education. Students who enter a college of technology usually do so upon completing junior high school. Literally translated from the Japanese, a college of technology is a “high specialty school,” and as such it offers a 5-year intensive study curriculum that integrates the general education of a high school with specialized technical training of a vocational school. These schools are accredited as institutions of higher education by Japan’s Ministry of Education (See Figure 1).

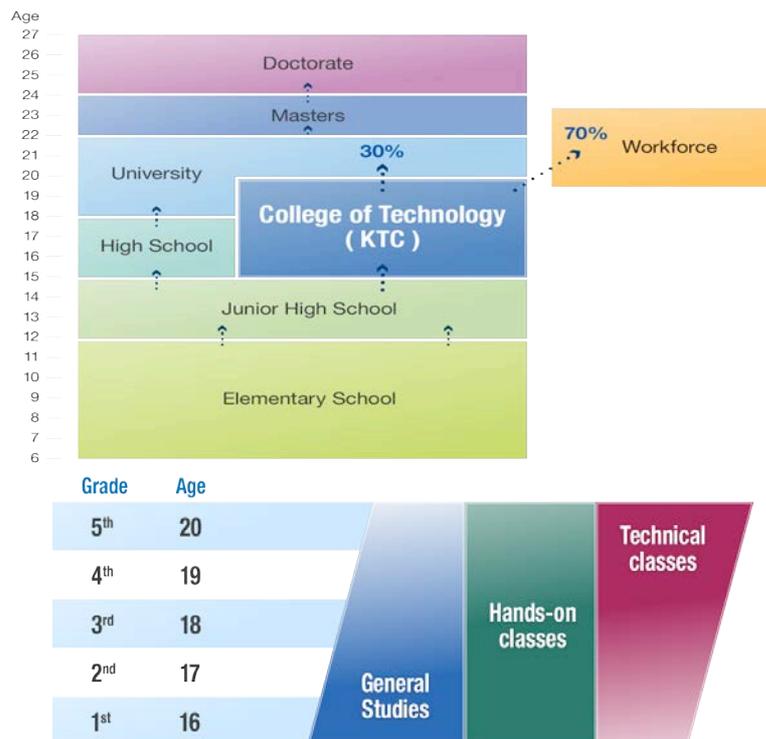


Figure 1: Educational System at KTC

With its 517 students and 55 faculty members, KTC is run by a Board of Directors that jointly oversees the neighboring 4-year university and graduate school of Kanazawa Institute of Technology (KIT) (See Figure 2).

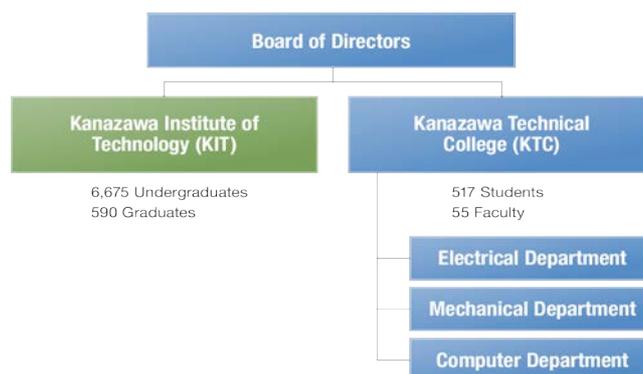


Figure 2: KTC Management

## Teaching Method

English immersion science classes have been implemented for the Physics and Chemistry required courses at KTC from 2016-17. Physics and Chemistry I are required 2 credit-hour courses at KTC. They are taught by one Japanese and one non-Japanese teachers. The non-Japanese teacher is the main teacher when English is the vehicle language in the first two terms, then the Japanese teacher becomes the main teacher when Japanese is the vehicle language of the course in the following two terms (See Figure 3).

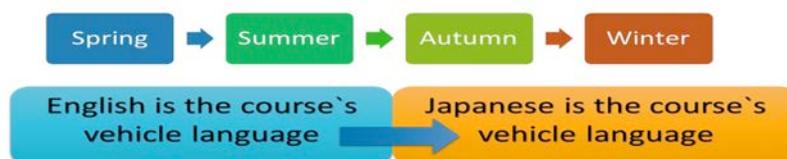


Figure 3: Year 2016-17 Physics and Chemistry I Flow

## CLIL

In the first two terms, we used CLIL methodology to address the issue of teaching specific subject in English, as students need to be educated both in the subjects as well as the vehicle language. CLIL is useful in making teachers and students aware of the type of languages they need to focus on during each lesson. Coyle (2000, 2002) has divided language of instruction into the three distinct categories. They are Language of Learning, Language for Learning, and Language through Learning (See Figure 4).

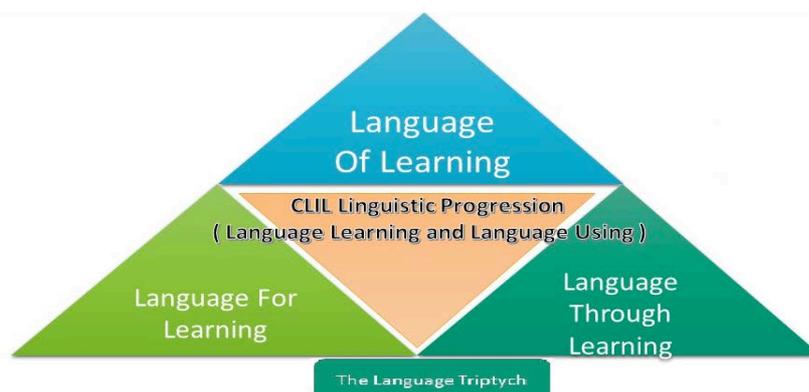


Figure 4: CLIL Triptych

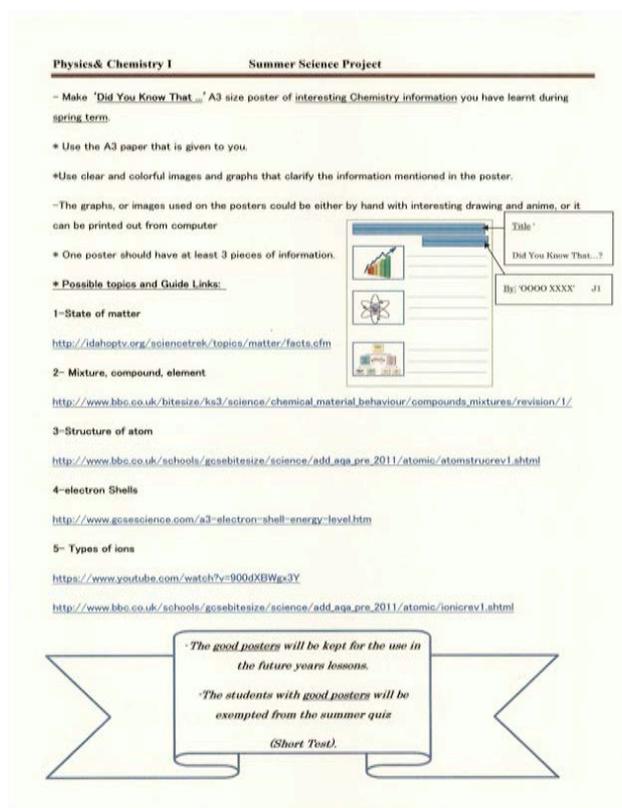
In individual lessons, teachers distribute activity worksheets to lessen students' anxiety about the vehicle language. The worksheets help students deal with language issues in separate categories one at a time. So, students learn new technical terms through a lesson taught by an interactive powerpoint presentation and simulation, use their limited English knowledge to link what they understood with what they read in their Japanese textbooks, and come up with a word-mapping, then intergrate them together to deduce the main concept taught in the lesson (See Figure 5).

Figure 5: Worksheets for Categorizing language

## Project

Apart from classroom instruction in English, Ss are required to create a poster in English. This is to give Ss opportunity to research and put their findings together in English, and give them a sense of achievement. So, before summer holiday, Ss are assigned to make A3 posters on the topics they found interesting, which were taught in chemistry lessons during spring term. Ss could create the poster either in English or

Japanese. Marking criteria were about punctuality, overall organization, clarity of images, and accuracy of language and information used (See Figure 6).



**Physics & Chemistry 1 Summer Science Project**

- Make "Did You Know That..." A3 size poster of interesting Chemistry information you have learnt during spring term.
- \* Use the A3 paper that is given to you.
- \* Use clear and colorful images and graphs that clarify the information mentioned in the poster.
- The graphs, or images used on the posters could be either by hand with interesting drawing and anime, or it can be printed out from computer.
- \* One poster should have at least 3 pieces of information.
- \* Possible topics and Guide Links:

**1- State of matter**  
<http://idahoptv.org/sciencetrek/topics/matter/facts.cfm>

**2- Mixture, compound, element**  
[http://www.bbc.co.uk/bitesize/ks3/science/chemical\\_material\\_behaviour/compounds\\_mixtures/revision/1/](http://www.bbc.co.uk/bitesize/ks3/science/chemical_material_behaviour/compounds_mixtures/revision/1/)

**3- Structure of atom**  
[http://www.bbc.co.uk/schools/gcsebitesize/science/add\\_aga\\_pre\\_2011/atomic/atomstrucrev1.shtml](http://www.bbc.co.uk/schools/gcsebitesize/science/add_aga_pre_2011/atomic/atomstrucrev1.shtml)

**4- electron Shells**  
<http://www.gcscience.com/a3-electron-shell-energy-level.htm>

**5- Types of ions**  
<https://www.youtube.com/watch?v=900dXBWg3Y>  
[http://www.bbc.co.uk/schools/gcsebitesize/science/add\\_aga\\_pre\\_2011/atomic/ionicrev1.shtml](http://www.bbc.co.uk/schools/gcsebitesize/science/add_aga_pre_2011/atomic/ionicrev1.shtml)

*The good posters will be kept for the use in the future years lessons.*  
*The students with good posters will be exempted from the summer quiz (Short Test).*

Figure 6: Project Assignment

## Research Objectives

The objectives of this research is to see if the change of language of instruction, vehicle Language, affects students learning outcomes or not.

## Research Methodology

This study analyses student grades, project markings, and student survey results about English-medium Physics and Chemistry courses, and compare the results with Physics and Chemistry courses taught in Japanese. Data was collected in 2016-2017 school year for year 1 students (112 Ss).

### 1-Grade Analysis

Four criteria are used for assessment, and they are divided as follows: 10% for attendance and attitude, 30% for class work and assignments, 10% for quizzes, and 50% for end of term exams.

### 2-Project Marking Analysis

Before summer holiday, Ss were assigned to make A3 posters to cover what they have thought of as interesting chemistry topics which they learned during the spring term. Ss were allowed to choose between English and Japanese, whichever the language they prefer to use. Teachers gave the choice of the language of the posters to the Ss. Marking criteria were about punctuality, overall organization, clarity of images, and

accuracy of language and information used, the choice of language was not a marking criterion. Therefore, Ss chose the language of their posters without the fear of being marked differently.

### 3- School Survey Result Analysis

KTC has been conducting school surveys to measure Ss' satisfaction of individual courses. In the survey, the questions F, G, H, I, J and K are Ss' self-assessment questions about the main topics covered in a course throughout the school year. In Physics and Chemistry courses the F, G, and H are question about topics taught in English in the first half of the year, and questions I, J, and K are questions about topics taught in Japanese in the second half of the year.

### Results/Discussion

#### Grade Analysis

We compared Computer Department individual Ss total grades of the first 2 terms, and the second 2 terms correlation was 0.80, suggesting that there is a positive correlation between the performance on first and second halves. We ran a z-test on the grades, P value was 0.35 which is more than the most commonly used P value of 0.05, which means there is no significance between the grades in the both cases. That suggests that changing the vehicle language did not affect the Ss' grades (See Figure 7).

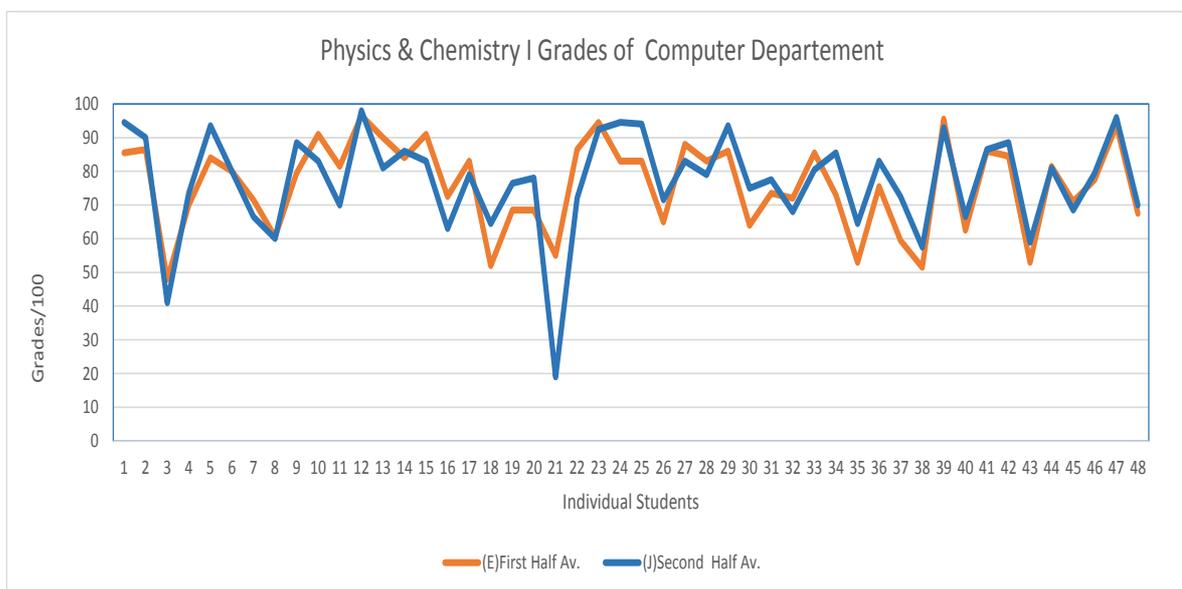


Figure 7: Physics and Chemistry I Grades of Computer Department

We compared Mechanical Department individual Ss total grades of the first 2 terms, and the second 2 terms correlation was 0.89, suggesting that there is a positive correlation between the performance on first and second halves. We ran a z-test on the grades, P value was 0.08 which is more than the most commonly used P value of 0.05, which means the grades were marginally significant. That suggests that changing the vehicle language did not affect the Ss' grades (See Figure 8).

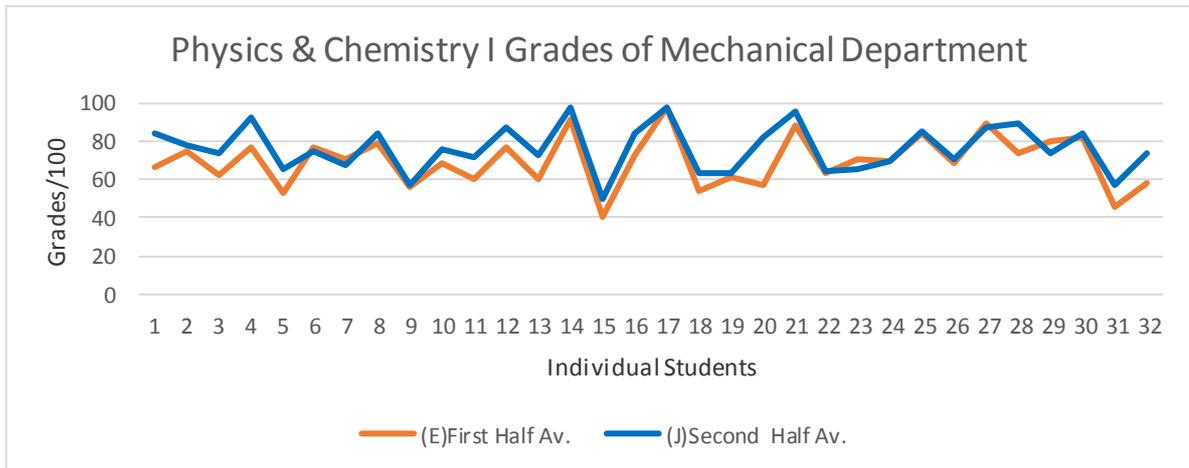


Figure 8: Physics and Chemistry I Grades of Mechanical Department

We compared Electrical Department individual Ss total grades of the first 2 terms, and the second 2 terms correlation was 0.84, suggesting that there is a positive correlation between the performance on first and second halves. However, the z-test showed different results, P value was 0.01 which is less than the most commonly used P value of 0.05. There is a significance in the grades of the 2 halves (See Figure 9).

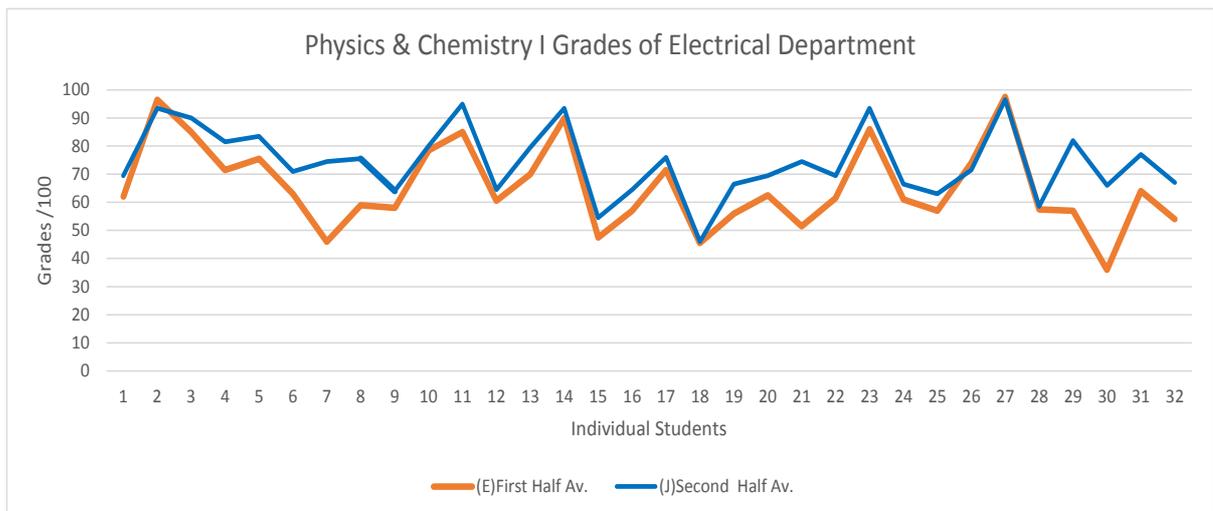


Figure 9: Physics and Chemistry I Grades of Electrical Department

Although their overall average of the first half was above the average, Ss of Electrical Department seem to be affected to some extent by changing the vehicle language. One of the reasons could be the anxiety students feel about the vehicle language. As shown in Figure 10, the Electrical department students have the lowest average points of all subjects amongst all first year students in all terms. Also, as Shiotani (2015) showed, the degree of reduction in anxiety level of electrical department was the smallest, so anxiety could affect academically lower-level students more.

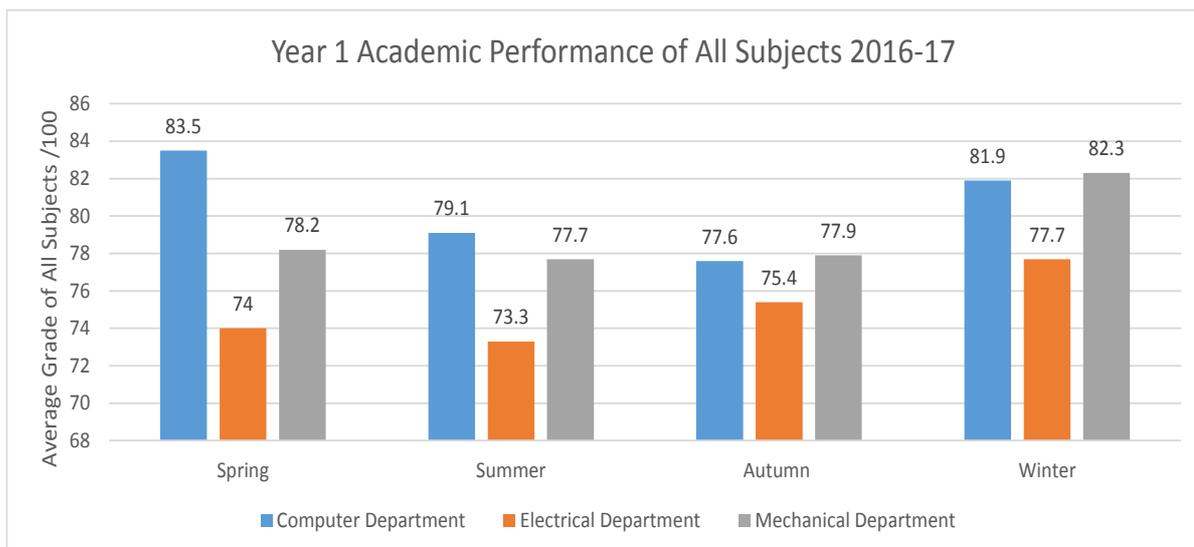


Figure 10: Year 1 Academic Performance of All Subjects of year 2016-17

### Project Marking

The objective of project assignment analysis is to see how many students have chosen English rather than Japanese when given the choice. Another aim is to measure if the quality of the posters were affected by the choice of the language.

Divided by department, 79.2% of Computer Department Ss used English for their posters, and only one student (2.1%) used Japanese. The remaining 18.8 % did not submit any posters (See Figure 11).

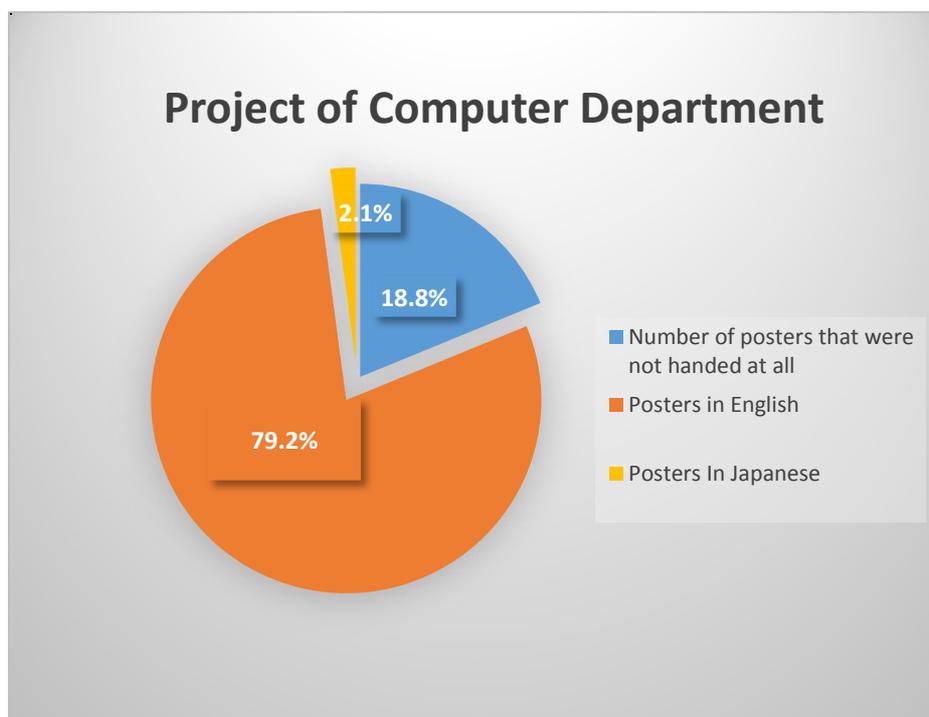


Figure 11: Poster Project of Computer Department

At Mechanical Department, 59.2% of Ss used English for their posters, and 31.3% used Japanese. 9.4 % did not submit any posters (See Figure 12).

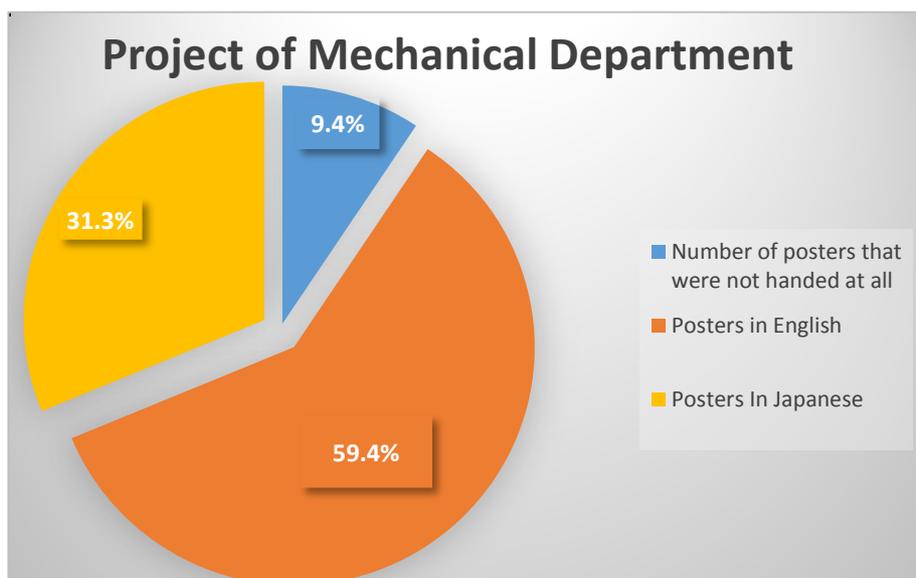


Figure 12: Poster Project of Mechanical Department

At Electrical Department, 40.6% of Ss used English for their posters, and 43.8% used Japanese. And, 15.6 % did not submit any posters (See Figure 13).

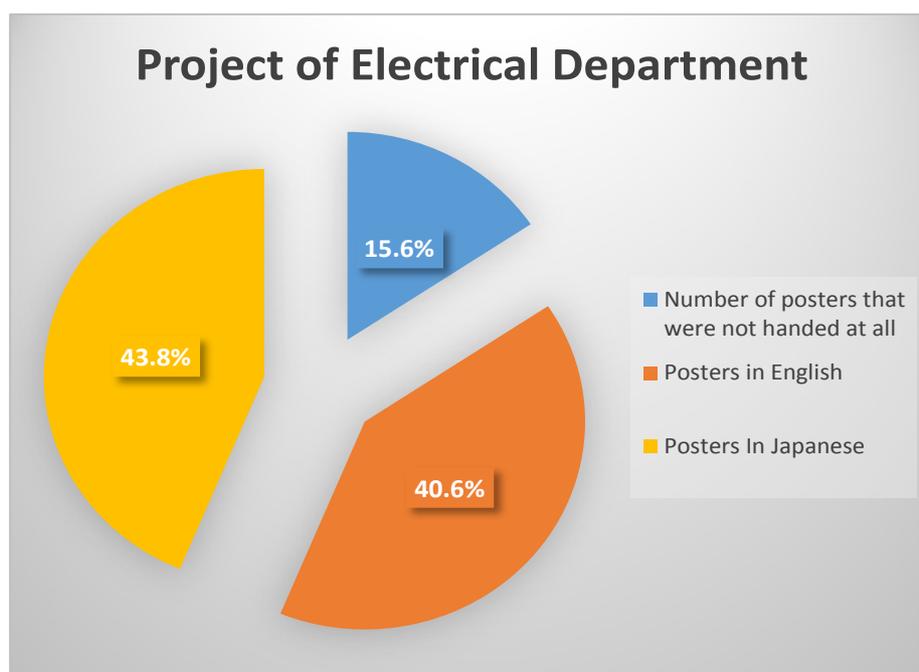


Figure 13: Poster Project of Electrical Department

Across the departments, a bigger percentage of Ss chose English (62.5%), and only 22.3% of Ss chose Japanese (See Figure 14).

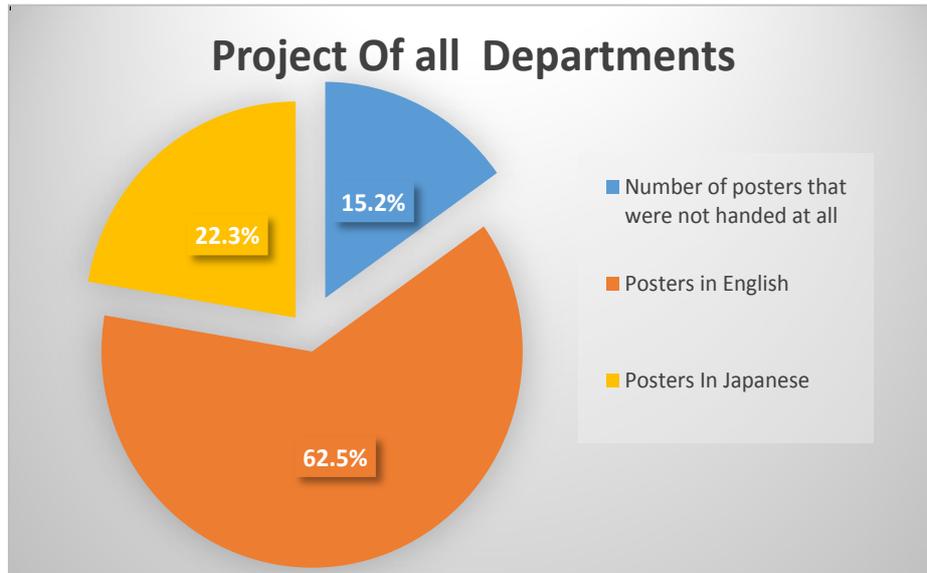


Figure 14: Poster Project of All Departments

The result of poster marking shows that English posters got slightly higher average score than Japanese posters. The average score of Japanese posters was 75.8, while that of English posters was 79.8 (even though one of the English poster had the mark of 20 points due to students’ misunderstanding of the poster topic.) (See Figure 15).

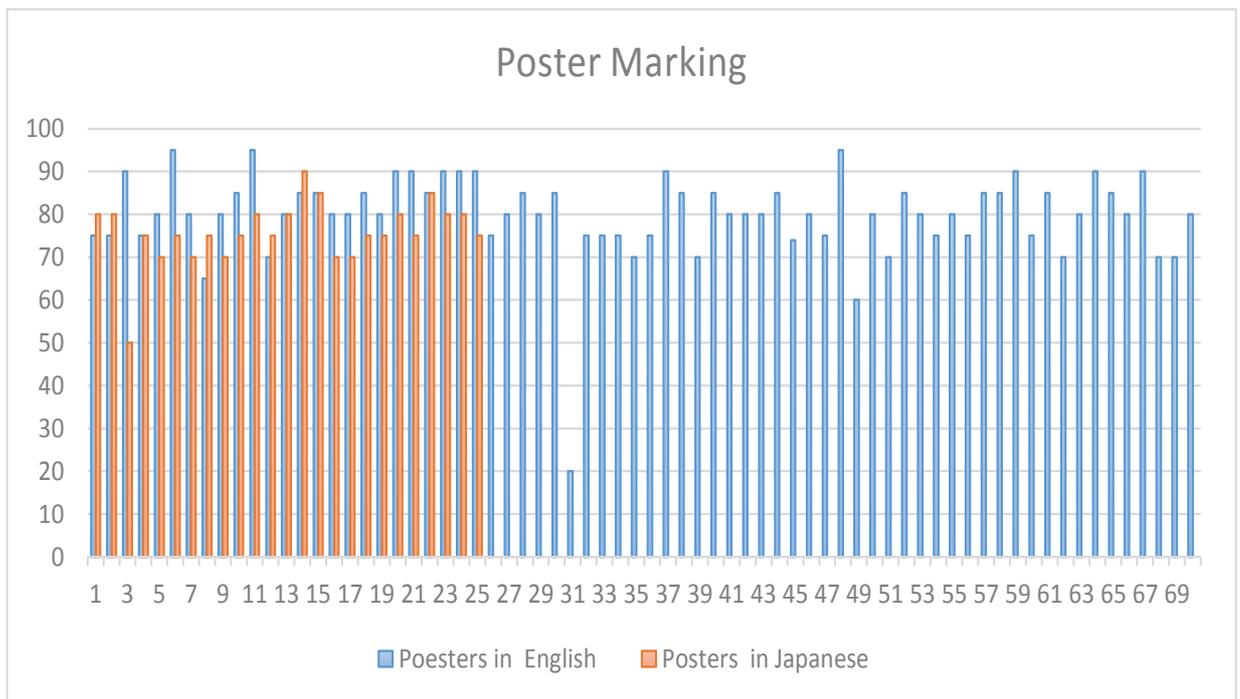


Figure 15: Poster Marking

**School Survey**

The objective of the self-assessment questions in the school survey are two folds: 1) to clarify how Ss see the content taught to them in English, ESP, and 2) to find out whether Ss’ opinions of the lessons are affected by the vehicle language or the scientific topics.

As seen in Figure 16, there are actually students in Computer Department, who marked 0% (meaning that they did not understand anything about the topic) for topics taught in Japanese.

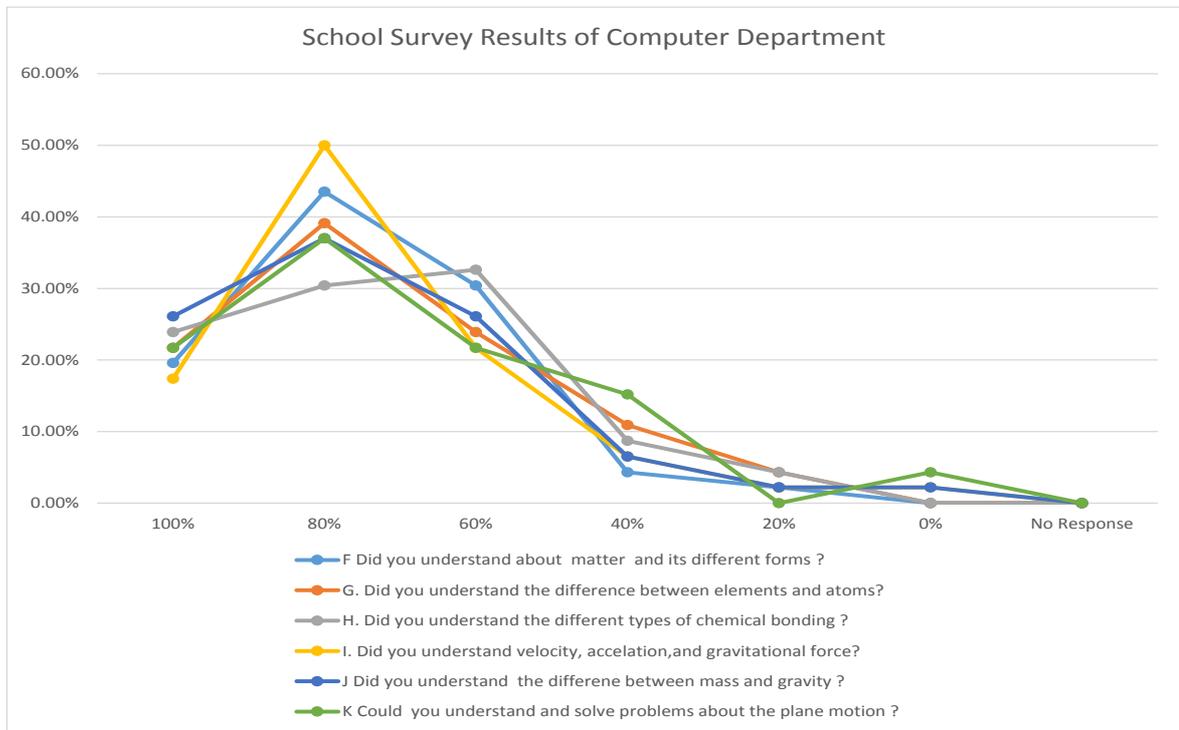


Figure 16: School Survey Results of Computer Department

In Mechanical Department, language is not necessarily the determining factor for the percentages of Ss' understanding of topics (See Figure 17).

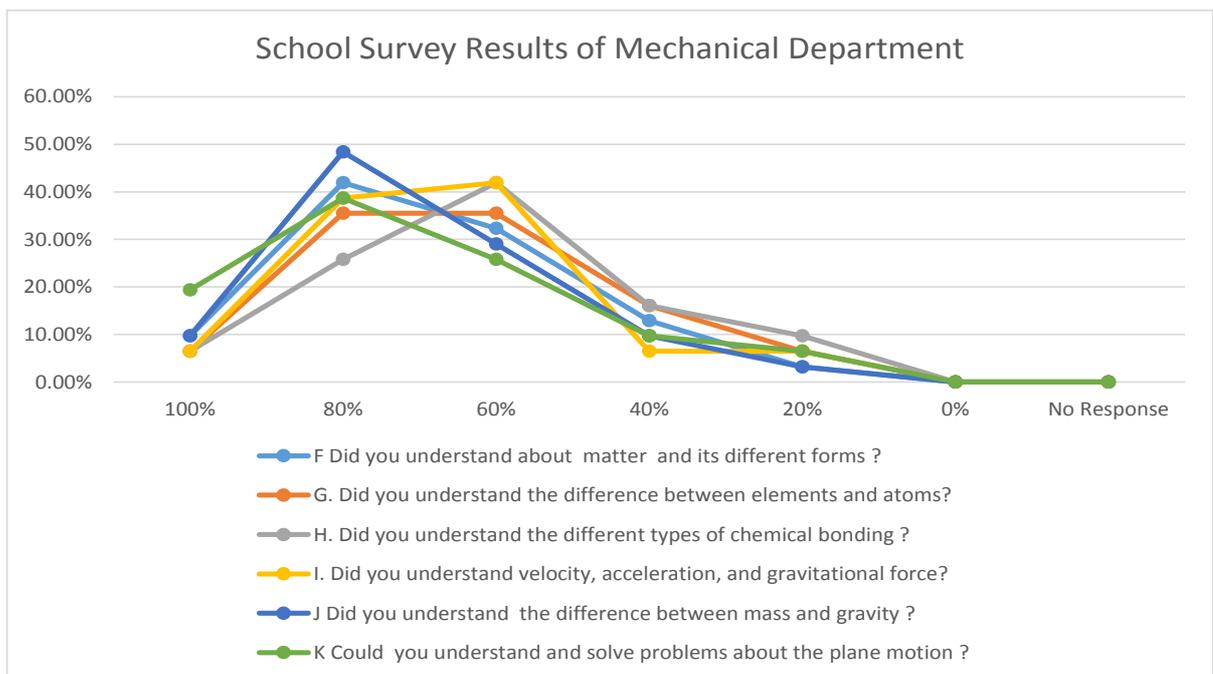


Figure 17: School Survey Results of Mechanical Department

In Electrical Department, Ss seem to be generally satisfied with topics of both languages. 19.4% of Ss marked question G to be fully understood, that was a question about a topic taught in English, that suggests language did not intervene the Ss understanding of topics. (See Figure 18).

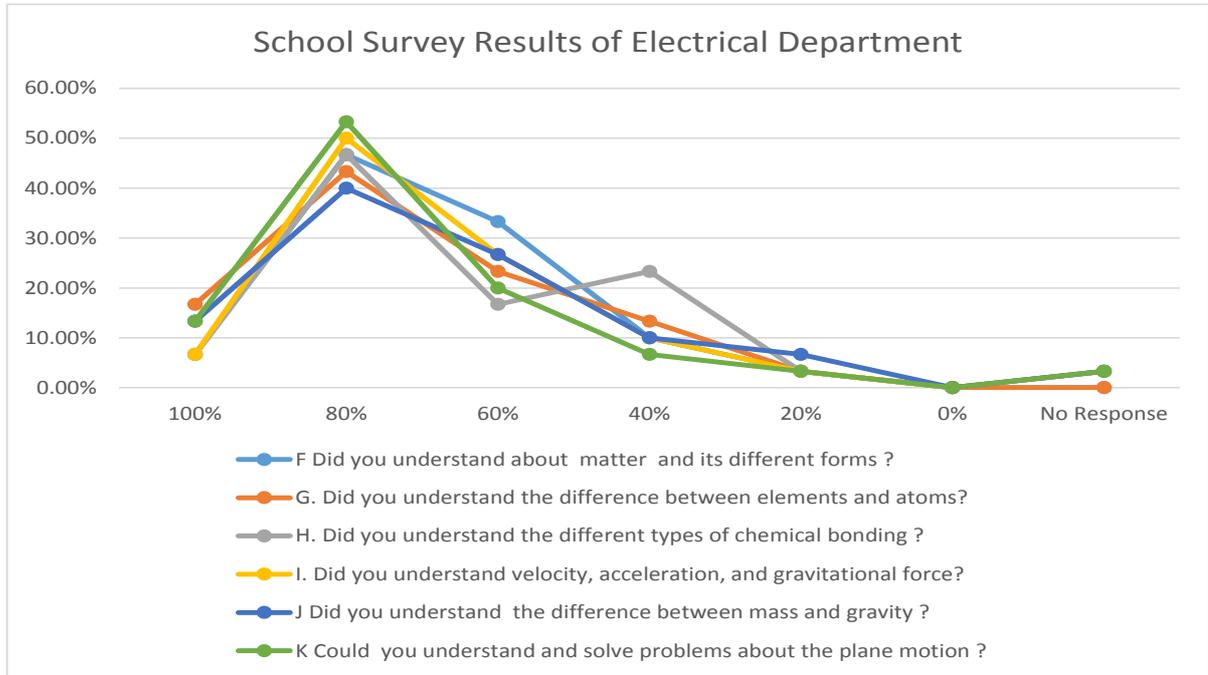


Figure 18: School Survey Results of Electrical Department

In All Departments, the response to all questions regardless the vehicle language change had a close pattern. In general, the majority of Ss marked more than 60 % understanding of topics which supports the idea that language did not affect Ss’ understanding of topics (See Figure 19).

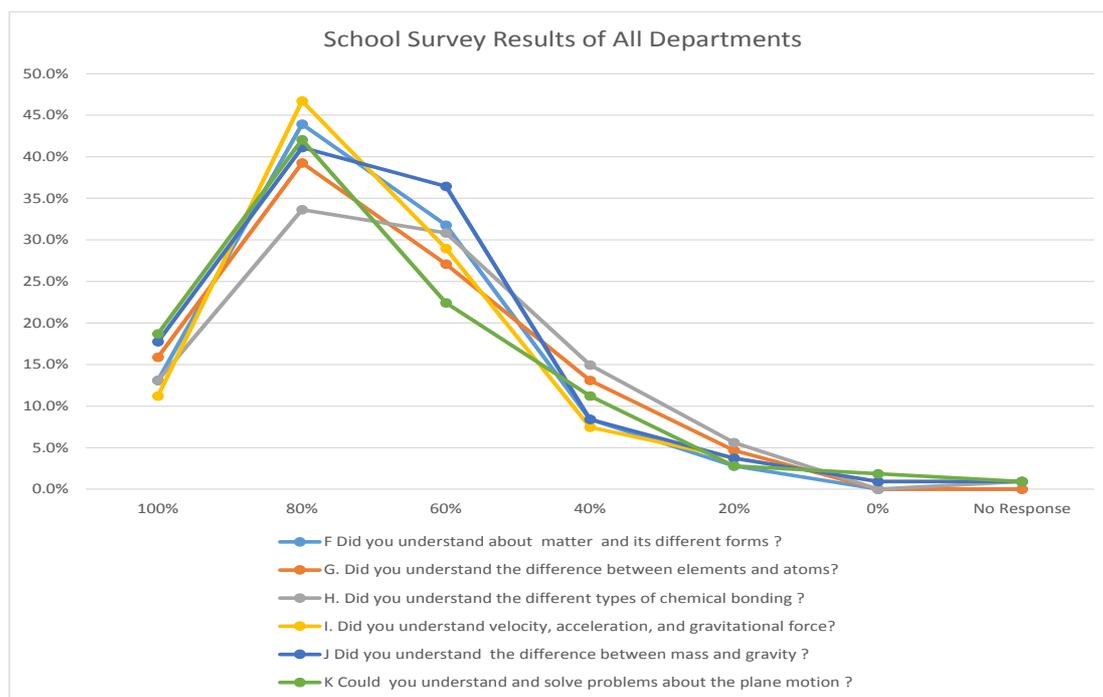


Figure 19: School Survey Results of All Department

## Conclusion

Vehicle language did not affect students learning outcomes in departments with high and medium academic achievers. However, it seemed to affect low academic achievers' learning outcomes. Although it has partly been caused by the Ss anxiety about language, it might also have a relationship to their academic performance in general. On the other hand, the survey results showed that students were generally satisfied, and language was not a major parameter that affected the survey results. Research limitations do exist, but the results suggest the possibilities of educating subject courses to technical college students in English.

## Future Work

The following areas need further research:

- Grade analysis and significance, if the vehicle language of Physics and Chemistry was Japanese first and then English.
- Measure whether there is improvement in students' English language ability. (Proficiency Tests)
- Follow up the performance of the same group of students in the following years.
- Study the differences of learning outcomes between introductory courses and advanced courses.

## Acknowledgments

We would like to thank professor Takeo Takahashi, the academic vice president of KTC, for his support, and for providing necessary data used for the analysis.

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### Appendix I: School Survey Results of Computer Department

(1/2)

金沢工業高等専門学校 平成28年度 授業アンケート 1年生科目別集計表

コード	31133 物理化学 I	設 問	選 択								回答者数	標準偏差・加重平均
			そう思う	まあそう思う	あまりそう思わない	そう思わない	回答数・%	無回答	回答者数	標準偏差・加重平均		
A.		あなたは、この授業を興味を持って受け続けられたと思いますか？	11 (23.9%)	30 (65.2%)	5 (10.9%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	46 (100.0%)	0.582 5.11		
B.		この授業に対し宿題を含めて、どの程度予習・復習しましたか？	12 (26.1%)	12 (26.1%)	4 (8.7%)	17 (37.0%)	1 (2.2%)	0 (0.0%)	46 (100.0%)	1.289		
C.		あなたは、この授業に対して積極的に取り組みましたか？	5 (10.9%)	31 (67.4%)	9 (19.6%)	0 (0.0%)	0 (0.0%)	1 (2.2%)	46 (100.0%)	0.557 3.56		
D.		あなたはこの授業に満足していますか？	11 (23.9%)	27 (58.7%)	7 (15.2%)	0 (0.0%)	0 (0.0%)	1 (2.2%)	46 (100.0%)	0.633 4.67		
		選択肢(3つまで選択)	回答者の差(そう思う-そう思わない)									
1		好きな科目である	9 (19.6%)	5 (10.9%)	4 (8.7%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	46 (100.0%)			
2		教科書や教材、配布資料などが、授業を理解する上で役に立つ	19 (41.3%)	1 (2.2%)	18 (39.1%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	46 (100.0%)			
3		課題やレポートなどが適切であった	7 (15.2%)	3 (6.5%)	4 (8.7%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	46 (100.0%)			
4		授業の進め方(スピード)が適切であった	13 (28.3%)	2 (4.3%)	11 (23.9%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	46 (100.0%)			
5		黒板やビデオ・OHPなどの説明の仕方、書き方、表し方などがわかりやすかった	6 (13.0%)	2 (4.3%)	4 (8.7%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	46 (100.0%)			
6		教員の授業中の話し方や説明の仕方が解りやすかった	3 (6.5%)	4 (8.7%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	46 (100.0%)			
7		授業は、学生が理解しやすいように工夫されていた	5 (10.9%)	1 (2.2%)	4 (8.7%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	46 (100.0%)			
8		授業中や授業後に、学生からの質問に丁寧に対応してくれた	2 (4.3%)	0 (0.0%)	2 (4.3%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	46 (100.0%)			
F.		物質の成り立ちについて、理解できましたか。	9 (19.6%)	20 (43.5%)	14 (30.4%)	2 (4.3%)	0 (0.0%)	0 (0.0%)	46 (100.0%)	0.905		
G.		元素と原子のちがいにについて、理解できましたか。	10 (21.7%)	18 (39.1%)	11 (23.9%)	5 (10.9%)	2 (4.3%)	0 (0.0%)	46 (100.0%)	1.082		
H.		化学結合について、理解できましたか。	11 (23.9%)	14 (30.4%)	15 (32.6%)	4 (8.7%)	2 (4.3%)	0 (0.0%)	46 (100.0%)	1.085		
I.		速度や加速度、重力加速度について、理解できましたか。	8 (17.4%)	23 (50.0%)	10 (21.7%)	3 (6.5%)	1 (2.2%)	0 (0.0%)	46 (100.0%)	1.055		
J.		質量と重力の大きさの違いについて、理解できましたか。	12 (26.1%)	17 (37.0%)	12 (26.1%)	3 (6.5%)	1 (2.2%)	0 (0.0%)	46 (100.0%)	1.129		
K.		運動方程式を立て、問題を解くことができましたか。	10 (21.7%)	17 (37.0%)	10 (21.7%)	7 (15.2%)	0 (0.0%)	0 (0.0%)	46 (100.0%)	1.243		

※「標準偏差」は値が少ないほど回答の偏りが少ないことを表します。加重平均は「そう思う」以外の回答の割合に10点、満足度は「満足」以外の回答の割合に10点、マイナスイ点、最も劣悪的な意見にマイナス10点の重さをつけて平均を取った値であり、大きいほど肯定的な意見が多いことを表します。

Appendix II: School Survey Results of Mechanical Department

金沢工業高等専門学校 平成28年度 授業アンケート 1年生科目別集計表

(1/2)

コード	31132	物理化学 I	説明	選 択 肢								回答者数	標準偏差・加重平均
				そう思う	まあそう思う	あまりそう思わない	そう思わない	回答数・%	回答数・%	無回答	無回答		
A.			あなたは、この授業を興味を持って受け続けられたと思いますか？	1 (3.2%)	22 (71.0%)	8 (25.8%)	0 (0.0%)				0 (0.0%)	31 (100.0%)	0.497
B.			この授業に対し宿題を含めて、どの程度予習・復習しましたか？	0 (0.0%)	8 (25.8%)	10 (32.3%)	12 (38.7%)				0 (0.0%)	31 (100.0%)	0.873
C.			あなたは、この授業に対して積極的に取り組みましたか？	2 (6.5%)	19 (61.3%)	10 (32.3%)	0 (0.0%)				0 (0.0%)	31 (100.0%)	0.575
D.			あなたはこの授業に満足していますか？	満足 3 (9.7%)	まあ満足 22 (71.0%)	少し不満 4 (12.9%)	不満 1 (3.2%)				無回答 1 (3.2%)	31 (100.0%)	0.607
			選択肢(3つまで選択)	3	3	4	4					31	3.67
			好きな科目である	9.7%	9.7%	12.9%	12.9%						
2			教科書や教材、配布資料などが、授業を理解する上で役に立つ	11 (35.5%)	1 (3.2%)	10 (32.3%)					10 (32.3%)	31	
3			課題やレポートなどが適切であった	5 (16.1%)	1 (3.2%)	4 (12.9%)					4 (12.9%)	31	
4			授業の進め方(スピード)が適切であった	5 (16.1%)	3 (9.7%)	2 (6.5%)					2 (6.5%)	31	
5			黒板やビデオ・OHPなどの説明の仕方、書き方、差し方などがわかりやすかった	4 (12.9%)	0 (0.0%)	4 (12.9%)					4 (12.9%)	31	
6			教員の授業中の話し方や説明の仕方が解りやすかった	5 (16.1%)	1 (3.2%)	4 (12.9%)					4 (12.9%)	31	
7			授業は、学生が理解しやすいように工夫されていた	3 (9.7%)	0 (0.0%)	3 (9.7%)					3 (9.7%)	31	
8			授業中や授業後に、学生からの質問に丁寧に対応してくれた	5 (16.1%)	0 (0.0%)	5 (16.1%)					5 (16.1%)	31	
F.			物質の成り立ちについて、理解できましたか。	100% 3 (9.7%)	80% 13 (41.9%)	60% 10 (32.3%)	40% 4 (12.9%)	20% 1 (3.2%)	0% 0 (0.0%)		0 (0.0%)	31 (100.0%)	0.988
G.			元素と原子のちがいがいいについて、理解できましたか。	100% 2 (6.5%)	80% 11 (35.5%)	60% 11 (35.5%)	40% 5 (16.1%)	20% 2 (6.5%)	0% 0 (0.0%)		0 (0.0%)	31 (100.0%)	1.014
H.			化学結合について、理解できましたか。	100% 2 (6.5%)	80% 8 (25.8%)	60% 13 (41.9%)	40% 5 (16.1%)	20% 3 (9.7%)	0% 0 (0.0%)		0 (0.0%)	31 (100.0%)	1.048
I.			速度や加速度、重力加速度について、理解できましたか。	100% 2 (6.5%)	80% 12 (38.7%)	60% 13 (41.9%)	40% 2 (6.5%)	20% 2 (6.5%)	0% 0 (0.0%)		0 (0.0%)	31 (100.0%)	0.945
J.			質量と重力の大きさの違いについて、理解できましたか。	100% 3 (9.7%)	80% 15 (48.4%)	60% 9 (29.0%)	40% 3 (9.7%)	20% 1 (3.2%)	0% 0 (0.0%)		0 (0.0%)	31 (100.0%)	0.926
K.			運動方程式を立て、問題を解くことができましたか。	100% 6 (19.4%)	80% 12 (38.7%)	60% 8 (25.8%)	40% 3 (9.7%)	20% 2 (6.5%)	0% 0 (0.0%)		0 (0.0%)	31 (100.0%)	1.121

※「標準偏差」は値が少ないほど回答の偏りが少ないことを表し、大きいほど偏りがあることを表します。また「加重平均」は値が多いほど偏りがあることを表し、小さいほど偏りがないことを表します。\*

Appendix III: School Survey Results of Electrical Department

(1/2)

金沢工業高等専門学校 平成28年度 授業アンケート 1年生科目別集計表

コード	設問	選択肢								回答数・%	回答数	標準偏差・加重平均
		そう思う (26.7%)	まあそう思う (63.3%)	あまりそう思う (10.0%)	そう思わない (0.0%)	まあ満足 (73.3%)	少し不満 (16.7%)	不満 (0.0%)	そう思わない (0.0%)			
A.	あなたは、この授業を興味を持って受け続けられたと思いますか？	8 (26.7%)	19 (63.3%)	3 (10.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	30 (100.0%)	0.592 5.33	
B.	この授業に対し宿題を含めて、どの程度予習・復習しましたか？	1 (3.3%)	12 (40.0%)	5 (16.7%)	12 (40.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	30 (100.0%)	0.980 —	
C.	あなたは、この授業に対して積極的に取り組みましたか？	3 (10.0%)	22 (73.3%)	5 (16.7%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	30 (100.0%)	0.521 3.83	
D.	あなたはこの授業に満足していますか？	5 (16.7%)	23 (76.7%)	1 (3.3%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (3.3%)	30 (100.0%)	0.441 5.52	
選択肢(3つまで選択)		そう思わない								回答数の差(そう思う-そう思わない)		
1	好きな科目である	6 (20.0%)			1 (3.3%)				5 (16.7%)	30		
2	教科書や教材、配布資料などが、授業を理解する上で役に立つ	11 (36.7%)			1 (3.3%)				10 (33.3%)	30		
3	課題やレポートなどが適切であった	6 (20.0%)			1 (3.3%)				5 (16.7%)	30		
4	授業の進め方(スピード)が適切であった	6 (20.0%)			0 (0.0%)				6 (20.0%)	30		
5	黒板やビデオ・OHPなどでの説明の仕方、書き方、表し方などがわかりやすかった	9 (30.0%)			0 (0.0%)				9 (30.0%)	30		
6	教員の授業中の話し方や説明の仕方が解りやすかった	4 (13.3%)			0 (0.0%)				4 (13.3%)	30		
7	授業は、学生が理解しやすいように工夫されていた	7 (23.3%)			1 (3.3%)				6 (20.0%)	30		
8	授業中や授業後に、学生からの質問に丁寧に対応してくれた	1 (3.3%)			1 (3.3%)				0 (0.0%)	30		
F.	物質の成り立ちについて、理解できましたか。	2 (6.7%)	14 (46.7%)	10 (33.3%)	3 (10.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (3.3%)	30 (100.0%)	0.898 —	
G.	元素と原子のちがいで、理解できましたか。	5 (16.7%)	13 (43.3%)	7 (23.3%)	4 (13.3%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (3.3%)	30 (100.0%)	1.040 —	
H.	化学結合について、理解できましたか。	2 (6.7%)	14 (46.7%)	5 (16.7%)	7 (23.3%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (3.3%)	30 (100.0%)	1.039 —	
I.	速度や加速度、重力加速度について、理解できましたか。	2 (6.7%)	15 (50.0%)	8 (26.7%)	3 (10.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (3.3%)	30 (100.0%)	0.911 —	
J.	質量と重力の大きさの違いについて、理解できましたか。	4 (13.3%)	8 (26.7%)	8 (26.7%)	3 (10.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (6.7%)	30 (100.0%)	1.088 —	
K.	運動方程式を立て、問題を解くことができましたか。	4 (13.3%)	16 (53.3%)	6 (20.0%)	2 (6.7%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (3.3%)	30 (100.0%)	0.930 —	

※「標準偏差」は値が少ないほど回答の偏りが少なく(標準偏差が多まるとは)と見なされています。※加重平均は「そう思う」に5点、「やや思う」に4点、「どちらでもない」に3点、「やや思わない」に2点、「思わない」に1点を乗じて平均を取った値であり、大きいほど肯定的な意見が多いことを表します。

## *Facilitating Skills-Learning by Blending Teaching in Clothing Construction Class*

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The Asian Conference on Education 2017  
Official Conference Proceedings

### **Abstract**

This study aims to facilitate the learning of sewing skills by blending teaching methods. The researcher combined film-watching (F), explanation (E), demonstrations (D) and object-observing (O) methods and propose a student oriented teaching model, FEDO model. Under the FEDO blending teaching model, students are allowed to develop their own learning path. Some students prefer to watch and follow the film step-by-step, while other students prefer learning by examining the step-by-step samples. In addition, students with different skill level could accomplish the project efficiently, so it does for the students who miss the class. Teacher demonstration still pay important role for students to see and feel the sewing operations right at the scene that is irreplaceable by the electronic-aid-teaching instrument.

Keywords: Sewing skills, Blending teaching methods, Tactile teaching

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## **Introduction**

Clothing construction class in the college at Taiwan was designed for students to learn the clothing pattern making, to learn the industrial sewing machine and to compose a garment project. Conventionally, explanation and demonstrating were the most adopted methods to teach students learning the sewing skills. The teacher usually first explains and demonstrates how a garment can be composed. Students then imitate teacher's steps and practice the skills. However, according to researcher's over a decade teaching experience, students tend to encounter learning difficulties before put the sewing into practice. First, it's not easy to remember every steps that the teacher has demonstrated. Secondly, it's hard to closely look up and examine teacher's operation since the teacher does not demonstrate face-to-face but teacher-to-group. Therefore, the purpose of this study was to develop a teaching model by blending multiple teaching methods to facilitate college students learning the sewing skills.

## **Sewing a garment**

Sewing a garment involves a series of cognitive processes, which include acknowledgment of the relations among garment pieces, the machine operations, the seam types and the material characteristics. In addition, sewing requires high tactile skills that include controlling the sewing machine, managing the materials tensions and locating the stitches on the proper places. In other words, sewing a garment involves multi-tasks and requires well managing cognitive activities together with the eye and hand activities.

## **Teaching sewing skills-FEDO model**

Because only clothing design majors in the higher education offer the sewing courses, not many researchers pay attention to study how and what teaching strategy could improve the teaching or learning the sewing skills. Based on the literature from sport field(Harrison, Blakemore, Richards, Wilkinson, & Gilbert, 2004), giving instruction of a skill or providing practical problem for student to solve (the tactical instruction) would both significantly facilitate students' skills and learning slopes. This gave the researcher an idea that to provide the skills instruction sheet and explanation how the skills can be applied into a garment would benefit the students learning.

Besides, Reese (2002) indicated that every individual has its own learning style. Some individual would learn best from written language, such as text books, blackboards and class notes, while others like to learn through oral language, such as group discussion, audio-message or lectures. Physical activity and movements aid the tactile/kinesthetic learner. Therefore, researcher also consider the variety of learning styles, while developing a teaching model for teaching sewing skills (Caudill, 1998).

The researcher combines four teaching methods into a FEDO teaching model, while F refers film/audio teaching method, E refers lecture/explanation, D means demonstration and O means observation.

## Method

To execute the FEDO model, first, lecture teaching method is used to explain what sewing skill is involved in a project or how a garment should be sewed. Each student also receive an instruction/evaluation sheet describe how a garment project can be processed/evaluated. Second, the researcher takes a film of how a sewing or a garment need be operated. This film allows the teacher stops or repeats the film to explain the sewing sequence as well as emphasize or to remind the “watch out” area. Third, the researcher demonstrate the garment construction and sewing sequence in person. Finally, the researcher provides step-by-step samples that students could closely examine the seam and garment construction. The figure is an outline of this model.

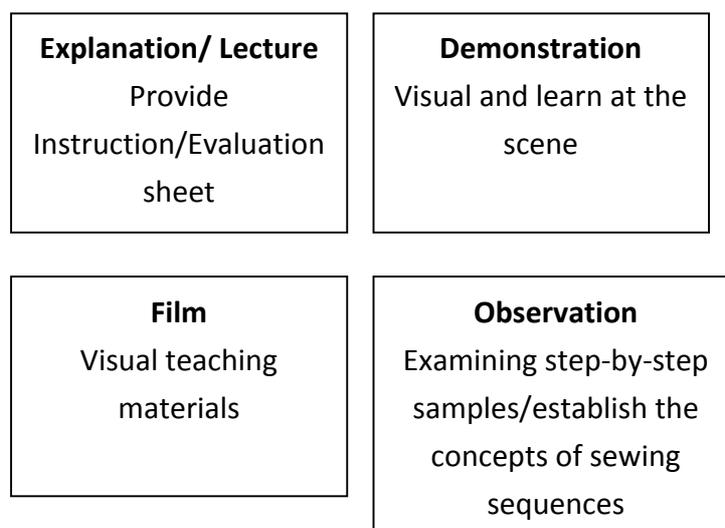


Fig1: FEDO teaching model: A combination of four teaching methods

## Conclusion

The researcher had adopted FEDO teaching model for clothing construction class over two years. The researcher has found three advantages.

1. FEDO teaching model allows students develop their own learning path. Some students prefer to watch and follow the film step-by-step, while other students prefer learning by examining the step-by-step samples.
2. Students with different skill level could accomplish the project efficiently, so it does for the students who miss the class.
3. Save teacher’s energy from repeatedly explaining the sewing skills that allows teacher to pay more attention to the slow learner.

In addition, this study also found that no matter how convenient of the electronic instrument has been developed now, demonstration by teacher personally still pay important role for students to watch and learn the tactile skills. This finding is also supported by the previous study (Kim & Lundberg, 2016)

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***Design a Pilot Program Based on the Storyboard to Teach An Iraqi Displaced Children; Experimental Study***

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**Abstract**

The storyboard is a world-class art that uses storytelling to use scenes or sequential drawings to express text written in a specific script to play an important role in spreading visual culture. This important of this research is to use the impact of this art to provide a pilot program specialized based on the storyboard to teach displaced children at Iraq. The research aims at designing a program for pre-school children between (3-6 years) who have not been allowed schools because of the bad situation which caused by the war and unstable situations in Iraq, to attend to the school, and attempt to secure their rights to education. The "researchers" seek to prepare a curriculum appropriate to the first stage of the children mentioned above in order to reconstruct their behavior positively and teach them the principles and basics of reading and writing.

Keywords: Storyboard, Design, program, kindergarten, pre-schools, positive behavior, children, curriculum appropriate

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## **Introduction**

Early childhood is the basis and the basis on which the character is built, the closer to health they are, the closer the personality in the future.

The importance of research, in fact that children are the future of society and to communicate with this society predetermines its nature through the instilling of values, concepts and ideas that teach the child able to recognize the good from Bad, and the difference between wrong and right at an early age.

In Iraq: Children make up almost half of the (3) million Iraqis displaced by the conflict. Many of Iraq's camps are operating beyond capacity, and families live in overcrowded conditions. Children are in danger of separation from their families, abduction, recruitment into the fighting, and sexual violence. Living amidst armed conflict – including exposure to mines and improvised explosive devices – puts them at risk of death and injury, and threatens their long-term mental health and future development.

Iraqi Families displaced suffered from moving to the province of Salah al-Din/ Kurdistan-North of Iraq because of the terrorism, children have been subjected to psychological, social, intellectual and cognitive instability due to the forced displacement and the effects of the war on explosions, violence and intimidation, which led to fear and dispersion in the thinking and mental and physical tension. Therefore, the (researchers) considered the current study and used this method It may contribute to reaching outcomes that address the problem or arrive at Constructive results contribute to solving them.

## **The aim of the Research**

The storyboard style in education is suitable for most age groups. It is one of the most important means of activating the mental process. It urges the learner to learn. The importance of employing it in education is due to its suitability to the nature of human memory and its mental perceptions, and predictions of what will happen in a particular situation. Human in love to learn the event from the beginning to the end  
The research aims to designing a program for Iraqi displaced children between (3-6 years) who have not been allowed schools because of the bad situation which caused by the war and unstable situations in Iraq, to attend to the school, and attempt to secure their rights to education.

## **Childhood and storyboard**

Childhood is a very important stage in human life, in which the character traits are determined and written through the patterns of its value and behavior and learn its

habits and trends, it is a continuous stage of growth of the individual, and it is the stage of formability according to the image provided by the community.

There is an interest in children's literature as one of the most important and general tools in the upbringing of childhood, which is one of the most important foundations and the cornerstone of the future of the Arab and Iraqi children.

### **The importance**

1. Contribute to the social, mental and emotional development of children
2. Develop the accuracy of observation, concentration and attention in children.
3. Work on the personality of the child.

### **Children's Literature Goals**

1. **Educational goals:** building the personality of the child and obtaining self-protection, away from the deviation and tampering and dangers that surround him.

2. **Cultural Goals:** Working on providing information and facts about people, life and society in the child's environment and in other settings. And to provide scientific content and ideas derived from the various sciences that link children to the present and modern scientific developments.

3. **Cognitive and emotional goals:** Work on enriching the language of the child by providing him with a complete set of new words and words, working to love learning, discovering talents, developing artistic and aesthetic sense, and discovering literary and artistic talents at an early stage in the child.

4. **Learning Goals:** In the various stages of child development, literature should be built in general and the story in particular on the educational materials related to the tendencies of students and children and their experiences, because such educational materials increase the passion of children and students technical works and push them to more readiness and mental effort to take advantage of these materials and increase their abilities On the preservation and reading and performance of language and voice properly.(Al-Mushrifi.Insherah.2005).(1)

### **Definition of Storyboard**

The storyboard is a world-class art that uses storytelling to use scenes or sequential drawings to express text written in a specific script to play an important role in spreading visual culture.

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<sup>1</sup> . Insherah Ibraheem.Al-Mushrifi.2005. Children's Literature; Introduction to Creative Education. Edition 1.. Horus International Institution for Publishing and Distribution. Pge: (43-44)

A panel or series of panels on which a set of sketches is arranged depicting consecutively the important changes of scene and action in a series of shots (as for a film, television show, or commercial)

Theoretical definition of the educational storyboard: A kind of literary that attract the reader or listener thrill and pleasure. The story may be comic novel, fictional or scientific or otherwise, and the scientific storyboard works to provide information in a simple and beautiful, not complicated, which leads to the appeal of the reader or listener towards the information and make it more motivated to gain the greatest amount of information.

"Storytelling is a task shared by storyteller and story listeners, it is the interaction of the two that makes a story come to life" (Baker & Greene, 1985, p. 28)<sup>(2)</sup>. They also state that if the story telling accompanies pictures, sound, and rhythm, they will have greater impact.

The researchers agree on the definition of the storyboard is (Art IX), as an art that combination of (two) basic story and image; that is to say, the story through pictures drawn either manually or by the computer recently accompanied by dialogue or within the context of the original square text of the image called " / A graphics box; a means used to express ideas through images, often along with other textual or visual information.

### **Characteristics of the storyboard provided to children under (7) years of age**

1. Basically rely on the movement over speech, as factors that will take the attention of the child look at the moving objects.
2. Using to be simple, clear and interesting.
3. Using cartoon comics and animation.
4. Depending on the colors, lights and characters beloved to children.

### **The positives of the storyboard**

1. Develop the imagination of the child and nurture his abilities, and move him to a new world, and innovative ways of thinking and behavior.
2. Provide the child with cultural information, it is a way to provide the child with the information that he needs and asked about easily.

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<sup>2</sup> . Baker. R., & Greene. M. (1985). Storytelling: Art and Technique. London: Longman. Pge:( 28).

## Pr- Studies

### 1. Salah Mohammed Salih and Abdul-Sattar Ibrahim Shabeeb.(2017).(3)

The study aims at finding out the effectiveness of using animation to enhancing the levels of reading skill for the students; to what extent using animation can develop the students' levels in the listening skill; and whether using animation has greater impact on one of these two skills rather than the other. The study based on the questions, the researcher adopted the null hypothesis and the quasi-experimental approach (tests) to the investigate the effectiveness of using animation technology as a teaching method to gauge the impact it may have on developing the English language receptive skills (reading and listening) of 4th-Year (Science Division) High School displaced Students' in Sulaimaniyah Governorate during the academic year 2015- 2016.

The data obtained from the mathematical calculations of the scores of the pre and posttest of both the experimental and control groups substantiate differences between the average score of experimental group for pre and posttest at both the reading and listening skills and their sub skills. This indicates that animation has positive effect on increasing students' achievement.

Animation is proved its effectiveness on developing reading and listening skills on all the levels. The gap between the experimental group in the pre and post test scores is wide. The gap is also wider between the scores of the control group and the experimental group in favor of the experimental group. The effect size indicated that the effect of animation movie program on developing the receptive domain for the experimental group is larger than those of control group.

### 2. The study of kashcool (2005).<sup>(4)</sup>

The objective of the study was to determine the cognitive level of Iraqi children in kindergarten. To identify some of the language structures in kindergarten, and the relationship between the cognitive level and some of their linguistic structures, the sample is kindergarten. The study included (12) kindergarten. (6) from Karkh and (6) from Rusafa-Baghdad , (10) children were selected from each kindergarten chosen randomly. The sample of children reached (120) children boys and girls.

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3. Salah Mohammed Salih and Abdul-Sattar Ibrahim Shabeeb. The Impact of Using Animation on Developing Fourth Year (Science Division) High School Students' Language Skills. University of Anbar. Anbar University Journal of Language & literature.. ISSN: 20736614 year: 2017 issue: 23 pages Pge: 171-215 . website: Iraqi Academic Scientific Journal: link: <https://www.iasj.net/iasj>

<sup>4</sup> Lubna Raheem kashcool. The cognitive level and its relation of some linguistic structures (the length, the type of sentence, and length of the word) for Iraqi kindergarten in the city of Baghdad. (Unpublished doctoral thesis) College of Education for Girls, University of Baghdad. 2005.(pge:15-120).

The results show that children tend to have things that are longer in shape than the things that are characteristic of minors, and that the awareness of the place in the child at this age depends on his understanding of the place and trends (infront, behind, Upper, Down) very weak.

And for the performance of the language, the " researcher" found that the first thing that enters the children's mind linguistically is the vocabulary used for naming, such as special names and general names, and then the vocabulary used to define or describe and then the actual vocabulary. The study showed that children reach a level of ability to know the relationships and links that link different meanings in their expressions.

### **3. Normaliza Abd. Rahim and Nik Ismail Harun.(2007).<sup>(5)</sup>**

This study explores the learning styles of three special needs children at Lynncroft Primary School, Nottingham. A one year study with a group of (12) children with different abilities and needs was carried out with the help of 3 teacher assistants. One of the researchers who was also the teacher in the classroom carried out the normal teaching and learning with the children by using pictures and ICT in the classroom. The pictures involved were taken by the children. The use of digital camera was introduced for the purpose of this study. After the pictures were taken and downloaded in the computer, the children would try to arrange the pictures accordingly to make a storyline. The children would, then, type their story in the computer. Activities were differentiated for all the children in the classroom. The three children were picked based on their abilities and special needs. This study has given a big contribution towards the school especially for the future special needs teacher.

### **4. Study of Lina Atef Abdel Aziz Hassan (2008)(\*)<sup>6</sup>**

The study aims at determining how cartoon and comics drawings affect pre-school children in the formation of positive behaviors, enriching and developing the cognitive process of the child and developing his behavior by upgrading the technical level of design for children's guide books

The study of Lina is agree with the current research that each aims to create positive behaviors in children from animation and storytelling. The (Lina study) differs from

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<sup>5</sup> . Normaliza Abd. Rahim and Nik Ismail Harun.(2007). **The Learning** Styles of the Special Needs Children Using Pictures and Storyboard Writing: A Case Study. Malaysia. Universiti Teknologi MARA (UiTM), Gading Business and Management Journal Vol. 11 No. 2, 41-56, 2007. ISSN 0128-5599, see: file:///C:/Users/lenovo%20B5180/Downloads/92-1-234-1-10-20170621%20(5).pdf

<sup>6</sup> . Lina Atef Abdel Aziz Hassan (2008). Design of cartoon drawings to children's guide books and its impact on pre-school child behavior (2-6 years).(unpublished master thesis). Halwan University. College of applying art.2008.

the current research that the current research addresses the Iraqi displaced children (pre-school) in the style of successive drawings.

### **Case Study**

The "researchers" seeks to formulate behavioral goals in the light of the overall objectives of the proposed program and the needs of displaced children in Iraq, and to in light of the educational content of the material to be taught to the selective sample of displaced children in the age between (3-6) years old.

The program includes a range of activities:

1. Reading the ideas and dreams of the selected sample of displaced children selected and choosing as a sample.
  - a. Discuss these ideas and illustrate them graphically.
  - P. Represent children to role stories and embody their favorite characters.
4. Drawing characters and ideas and giving them vitality and effectiveness.
5. Simulation of characters according to the ideas of children elected by using Balloons talks.

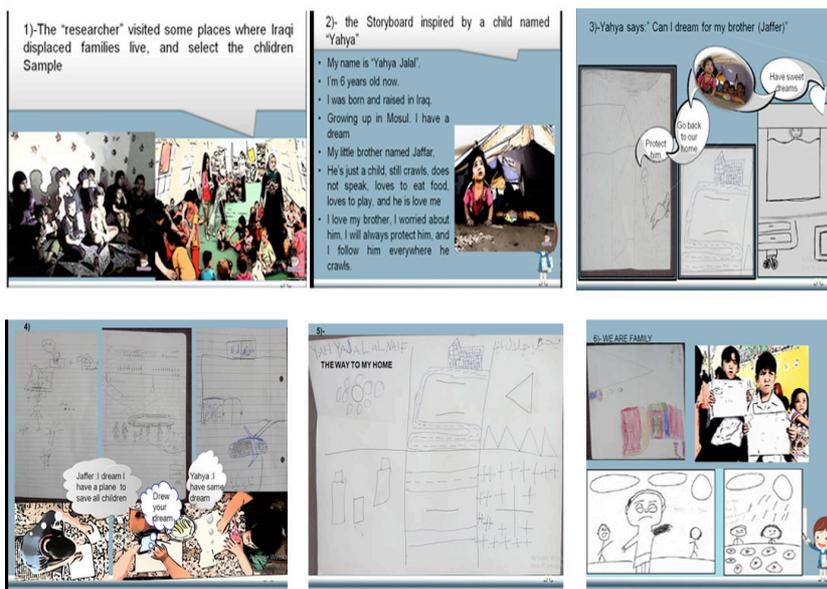
### **The Difficulties faced by "the researcher":**

**The researcher faced some difficulties during visiting displaced Children and their families**

1. Difficulty accessing to the place of children who are displaced on a regularly.
2. The "researcher" Delay in obtaining security approval "Facilitate the researcher's mission" (agreement) to communicate with displaced children and their families because of bad situation.
3. The continuity of changing the places of the displaced Iraqi families affected the research sample somewhat.

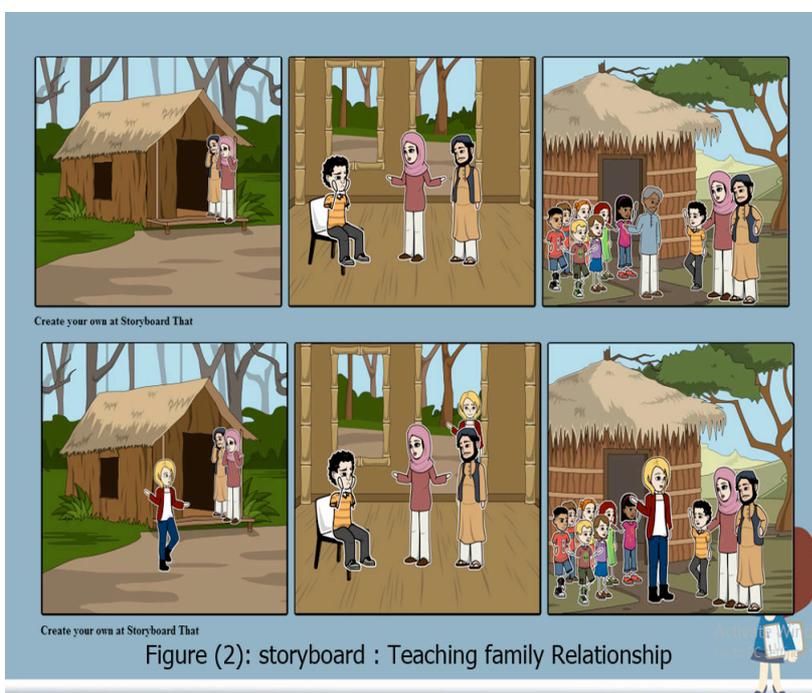
## The researcher select samples show the nature of the program:

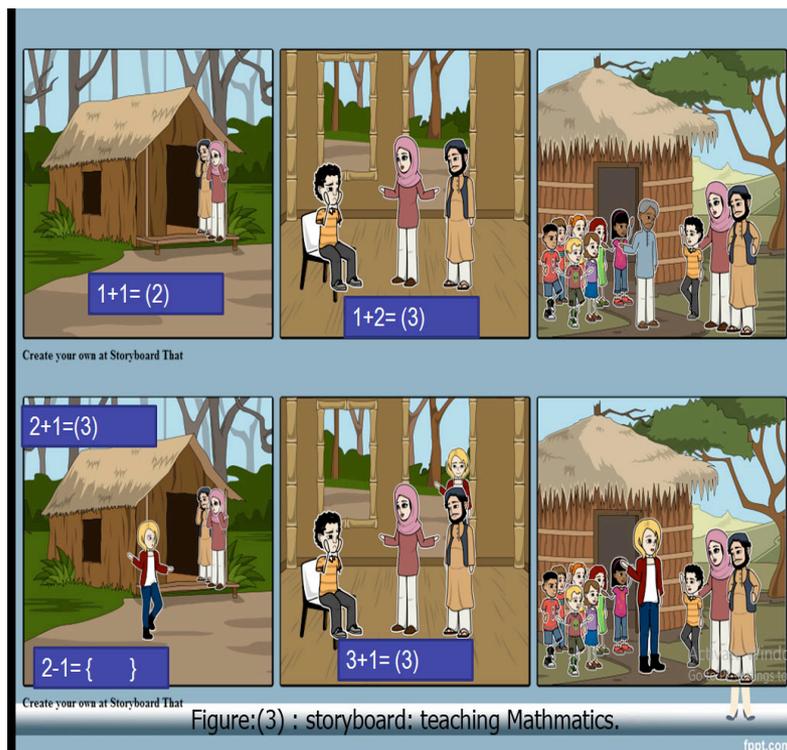
### 1. Inspiration children



Figure(1): The storyboard talking about family, home, peace, education

### 2. Write a storyboard





## Conclusion

1. The "researchers" seeks to adopt the program based on the storytelling or dialogue or scenario as called, was interesting and loved by the children, which led to the development of dialogue in displaced children.
2. Using the style of acting, means that representation of the story in all its roles (stories program) helps to understand the activity of children and strengthen their personalities and make them more confident in speech and expression and give new sentences.
3. Graphics and coloring were the words in each story, and change with each section or dialogue, has really attracted the minds of displaced children and make them think about the formation of such stories and questioning.
4. The style of drawings adopted by the "researcher" and invested with the children of the experimental group raised the excitement of children to learn and draw their attention, as they see something new brings them into the spirit of life, and encourages them to think about education and thinking in the future.

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Firstly, I would like to express my sincere gratitude to my advisor Prof. ***Dr. Hassan Ridha Hammod al-Najar*** for the continuous support of my Ph.D study and related research, for his patience, motivation, and immense knowledge. His guidance helped me in all the time. And I'm using this opportunity to express my gratitude to everyone who supported me throughout the training courses to complete my research. I am thankful for their aspiring guidance, invaluable constructive criticism and friendly advice during the research work. My special thank to my family. and finally thank you IAFOR –ACE2017. I wish you success and more progress.

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## ***Teaching English to Non-Native Primary Learners Through Picture Books***

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The Asian Conference on Education 2017  
Official Conference Proceedings

### **Abstract**

Over the past decades, language learning as one of the tools to holistically develop students in an ever-changing world, particularly with emphasis on communication, has been a key policy in East and Southeast Asia. Throughout the region, English is the major 'foreign' language taught, and its inclusion in primary schools' curricula is often at the expense of local languages (Coleman 2010; Hadisantosa 2010; Kirkpatrick and Liddicoat 2017). Although Japan is one of the few exceptional countries that is worried about endangerment of the national language, Japanese has in fact been strongly supported and English is facing more issues. However, Japan is implementing English at the primary school level in 2020, and this paper recommends the use of picture books or literature in the newly implemented English classroom focusing on two merits: concentration and interest. Young learners have a short span of concentration or dedication to perform tasks, with the span reducing with decrease in the learner's age. Aibara and Furuichi (2012) revealed that the average duration for which 10- to 12-year-old children can concentrate is 13 to 16 minutes depending on the content. In order to enhance their interest in learning, picture books should match their concentration span. Carefully selected picture books can allure young learners to pay more attention to the contents, leading to the acquisition of not only language skills but also cultural knowledge. The background culture of the target language will broaden the perspective of learners, making the use of picture books more effective.

Keywords: TEYL, reading and writing, picture books, elementary school learners

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## Introduction

English as a second or an additional language is widely taught at elementary stage or even earlier at preschool age worldwide. Pedagogy, materials, and teacher training are some of the many issues associated with teaching English to young learners (hereafter TEYL), which is a controversial topic, particularly with potential change for communicative use in Asian countries. Su (2017) noted that governments in Asian countries attributed the problem to dominant grammar-translation teaching method in regions. When change is suggested, the first challenge that communicative language teaching encounters is its possibility of implementation, due to mainly unprepared or underprepared teachers, that occurs not only in Asia but also elsewhere. Additionally, as Paul (2003) mentioned, many of the tried-and-tested techniques and multitude of information primarily target children who use Roman alphabet in their native languages, or who are in a significantly different psychological climate than Asian children. Paul (ibid.) indicated that in the 2010s, the communicative or child-centred method implemented in Asian countries was heavily influenced by approaches designed for North America or Europe. Many educational reforms led by government policy have occurred in the region since then, including some cases at the expense of the native language.

The writer has long been searching for better teaching methods for Asian children, particularly for Japanese learners, and this study investigates the use of picture books in TEYL to generate interest and increase motivation and proposes a potential method for using picture books.

## Background

The study background involves two important factors: one for specific Japanese educational condition in the context of TEYL and the background of the pedagogy of using picture books in TEYL.

Despite the prevalent key policy of English as the major foreign language and communication tool in East and Southeast Asia, Japan has been an exception. As of 2017, English as a major foreign language and as a formal school subject\*<sup>1</sup> has been taught but at the secondary school stage, which is quite late according to global standards. However, the country had a history of TEYL in the past: in 1886, English began to be taught at public elementary school (although these schools were co-eds, mostly boys attended) as an “additional subject” equivalent to electives in the modern system. (Erikawa 2006) This TEYL included alternating highly flourishing and stagnant periods and lasted until the Second World War when English became the ‘enemy’ language. Immediately after the war, English education began at secondary school, and the system has remained intact to this day with several minor reforms. The Ministry of Education (MEXT) has in 2017 declared that English should ‘aim to improve the quality of basic English education, and adequately prepare school children to be ready for middle school, then to higher education. Ultimately make graduates globally competitive in English communication’.

New education reform will implement English as a formal subject in Years 5 and 6 from 2020 onwards, and faces several potential issues including pedagogy, materials, and up-skills training seminars for the teachers. The most challenging issue is perhaps

teacher development, as most elementary school teachers do not speak English and they have insufficient language knowledge, teaching training, and teaching skills.

The other background-related factor concerns the pedagogy of using picture books.

Picture books in this context do not refer to picture dictionaries or books of pictures.

The implication here is that a book has a story, however simple, and accompanying pictures or illustrations. As Bourke (2006.280) has noted, ‘children live in a world of fantasy and make-believe’. A pedagogy called CLE for Concentrated Language Encounter — term adapted from Courtney B. Cazden’s *Child Language and Education* in 1972 — is noteworthy in this context. It was first intended to suggest children’s engagement with activities or task, and with financial support over the years from the Rotary International Literacy Resource Group\*<sup>2</sup>, it achieved success in disadvantaged communities in Thailand, the Philippines, and South Africa. It then worked primarily as a framework for developing literacy to teach English. The writer and a small group of delegates from educational institutions went to Manila in 2013 to observe the possibility of implementation of the framework to TEYL in Japan. The CLE consists of five stages, each of which is divided into five phases, starting from Stage 1, Phase 1 and progressing to Phase 2, etc. We observed all phases and stages in several schools and were quite impressed with its effectiveness for Filipino children. However, we were also compelled to acknowledge the fundamental differences between the Philippines and Japan in terms of several elements including socio-linguistic background and cultural factors. The teachers were well trained CLE certified instructors, well supplied with knowledge and skills based on fluent use of the target language. Although the Philippines has multiple native tongues and the national language was set as Tagalog, all of them used the Roman alphabet. In addition, the country has a particularly strong relationship with the U.S., and income-generating opportunities using English were very high. We unanimously concluded that it was not possible to introduce CLE to the Japanese system, primarily due to the paucity of able instructors and opportunities of training them. However, the method itself should not be ignored, particularly because its potential is probably limitless depending on how it is used, sustained, or evolved. Therefore, this current study proposes the use of picture books in TEYL using pedagogy inspired by CLE.

### **Using Picture Books in TEYL**

Two main factors encourage using picture books in TEYL. The first is the duration of reading picture books. The length of class periods in public elementary school is 45 mins in Japan. It is commonly acknowledged that younger children have a shorter span of concentration, and it is not easy to retain children’s focus on one thing. To clarify the duration of children’s concentration, Aibara and Sugawara et al. (2012) demonstrated the effectiveness of retaining the concentration of 10- to 12-year-old children with picture books. Aibara and Furuichi (2013) conducted experiments\*<sup>3</sup> on 4-year-olds with digital picture books. They found that children concentrated for 15 minutes and 09 seconds. Usually, any picture book that parents, teachers, or librarians choose for mandatory or recreational reading is completed in a duration ranging from a few to five minutes if read loud. This means that if a picture book is used as ELT material, a teacher can use the 15 minutes concentration span for finishing a story with instruction as one module during a class and still have time to apply other

pedagogy in the class.

Matching children's concentration span with the time taken to finish reading a picture book will reduce the mismatches between teaching and learning

The second factor is stimulating interest in learning. Using pictures or picture books in study subjects is not a new phenomenon. Subjects other than foreign language, such as arithmetic, social science, and even music use picture clips or illustrations, as the visuals are naturally suited to the cognitive development of children. Piaget's 'concrete operational stage' indicates the age range that fits the elementary school age. The implication is that children understand and acquire concepts attached to concrete ideas, for which stories and pictures are an effective tool. The suitability of teaching material for their cognitive development stimulates children's interest in 'knowing'.

In Japan, when elementary Year 3 children start learning English, a variety of pictures should be used as teaching materials, and story books with pictures can also enlighten learners' perspectives.

### **Picture books in TEYL using the CLE method**

The concept of CLE involves two kinds of programs: text-based and activity-based. The text-based is a basic program involving using a picture book with texts. It is intended to develop abilities of expression, self-confidence, tolerance to different opinions, and interest retention.

The major characteristics of CLE are scaffolding and spiral learning.

Scaffolding aims to help and guide learners with a variety of support systems, aiming to allow learners take one step, however small, forward. As Krashen's *i+1* implies, by 'directing attention on in remembering the whole task and goals on behalf of the learner, the teacher is doing what children are not yet able to do for themselves' (Cameron 2001: 9). Particularly in primary learners' classrooms, a teacher may demonstrate and show a model, and/or as Walker and Rattanavich et al. (1992) suggest, supply still or moving pictures, audio recordings, dramatization, or hands-on experimental activities, and remind, encourage, and coach learners. Some distinct scaffolding examples include using questions, filling the gap by continuing the sentence a learner cannot finish, and providing adequate and ample encouragement.

In spiral learning, as a phase progresses, a lesson starts with the revision of previous learning. For instance, at Stage 1, the same starter book is used repeatedly throughout the same five phases, and new learning is based on the revision, so that the class is conducted using replication and new production. This makes the learning easier for less confident learners.

Stage 1 targets elementary school grades/Years 1 and 2, Stage 2 targets Grades 3 and 4, and Stage 3 does so for Grades 5 and 6. However, the curriculum should reflect the individual situation. When Year 3 pupils start learning English as a foreign language, they should start from Stage 1 Phase 1, but the starter book should be carefully selected to suit their cognitive development and facilitate acquisition.

CLE has set objectives, subject matter and procedure in each stage and phase.

The following is an example teaching plan based on the data collected from observing classes with the teachers' permission.\*<sup>4</sup>

STAGE 1: Objectives		STAGE 2: Objectives	
Phase 1 <b>Shared reading of the Starter Book</b>	<ol style="list-style-type: none"> <li>1. Associate pictures with the printed symbols.</li> <li>2. Answer wh-questions.</li> </ol>	Phase 1 <b>Analyzing the starter book</b>	<ol style="list-style-type: none"> <li>1. Use past form of the verb.</li> <li>2. Sequence the events.</li> <li>3. Read orally a story with correct pronunciation, stress, and rhythm.</li> <li>4. Write legibly and neatly observing neat letter forms, capitalization, punctuation, and spelling.</li> </ol>
Phase 2 <b>Reviewing the story</b>	<ol style="list-style-type: none"> <li>1. Sequence events as they happened in the story.</li> <li>2. Retell the story through the pictures.</li> <li>3. Associate pictures with the printed symbols.</li> </ol>	Phase 2 <b>Linking the text to personal experience</b>	
Phase 3 <b>Negotiating a group text</b>	<ol style="list-style-type: none"> <li>1. Answer questions about heard story.</li> <li>2. Answer wh-questions.</li> </ol>	Phase 3. <b>Negotiating the new text</b>	
Phase 4 <b>Making a Big Book</b>	<ol style="list-style-type: none"> <li>1. Illustrate story in a "Big Book".</li> <li>2. Use correct capitalization in writing sentences.</li> </ol>	Phase 4. <b>Critically analyzing the new text</b>	
Phase 5 <b>Activities in conjunction with games</b>	<ol style="list-style-type: none"> <li>1. Read sentences in the Big Book.</li> <li>2. Recognize words in the BB.</li> <li>3. Write words in the BB.</li> </ol>	Phase 5 <b>Language activities and elaboration</b>	

As this proposal focuses on using picture books in the EFL context, teachers unfamiliar to CLE may find Stage 1 easier to approach. Phase by phase pattern models are presented below along with a discussion of pedagogical strategies.

#### **Stage 1, Phase 1 Shared reading of the starter book**

Sing several songs  
 Sit on the floor huddled together  
 Guess a story  
 See pictures, tell the story page by page  
 Actual reading  
 Recite the story

The songs can be nursery rhymes, TPR songs, or even popular songs chosen by the class teacher who is familiar with the learners. It is suggested that learners huddle together sitting on the floor, as it provides them an opportunity to be aware that

‘English is different’ from other study subjects that are highly likely to be teacher-centred requiring stay-on-the desk behaviour in Japan or in other Asian countries. This alone may instil motivation in learners. Depending on the class size, learners can stay on the floor, more closely gathered, making it easier to interact with the teacher or with classmates. The teacher then presents the starter book, preferably a large-sized book that can open flat on a bookstand. The teacher, thus freed from holding the book, can pay attention to the learners more closely. The first step is NOT to begin reading, but asking questions about the cover, colour, pictures, and anything else that learners can see and notice. The teacher then encourages them to guess the story by flipping the pages or showing pictures. The pre-reading objective is to allow learners to guess and speak out—even a single word’s utterance is encouraged. For very elementary learners, the use of mother tongue to describe the guess is tolerated. After the teacher’s model reading, as the starter book has only few sentences, learners can repeat the story in chorus, in groups, or individually as often as their interest is retained. This phase can be applied to the entire class duration of 45 minutes or can be adapted to any length of time according to the classroom situation.

At this stage, the stress-free classroom environment and use of mother tongue to develop schema are examples of scaffolding.

In the Philippines, *Lito’s Pet* was used as the started book, and it has the following story:

*Lito has a pet frog.  
He put the frog into the jar.  
He jumps out of the jar.  
Lito runs after the frog.  
The frog jumps into the pond.  
Lito cries.*

Each line corresponds to a flat face of two open pages with simple pictures. One sentence in each of the two open pages provides learners a clear view of what is happening, using a visual cue of sounds, words, and meaning. Every time the teacher flips the page, a new sentence appears along with the new picture, imparting a sense of anticipation to the learners.

This story also contains cultural references such as a frog as a pet or the name of the boy, which can be adjusted according to the teachers’ discretion.

#### **Stage 1 Phase 2    Reviewing the story**

Retell the story from memory  
Reading of the story (by learners)  
Retell the story to match pictures  
Match pictures and texts  
Arrange the pictures/texts in order  
Revise reading

The aim of this phase is to allow the learners to absorb the meaning of the text by recalling and retelling the story. Some learners may recite the story from memory, some might utter a single word, and others may paraphrase in mother tongue. All

these responses should be encouraged, as it is important to keep the learners attentive and mentally active. It might not be possible to implement the reading activity in Japan or in other Asian nations; however, it is likely that learners ‘pretend’ to read while they are reciting from memory. Using flashcards to match the pictures may promote learners’ cognitive development while reading. The teaching materials needed at this phase are the book; singled out pictures; and texts cards, preferably with magnet at the back of each card.

Some of the observed techniques used by the teacher were control of speed and rhythm in instructing the class and reading the book, along with a variety of ‘clapping’ TPR activities. When learners’ began to lose attention, she switched from the lesson to the ‘clapping’ activity which instantly changed the mood, drew learners to renewed interest in the lesson, and retained their concentration for the entire 40 minutes – well over the 15 minutes average concentration span.

### **Stage 1, Phase 3 Negotiating a group text**

Recall the story in sequence

Sentence writing

Negotiation of a story to make a Small Book

The objective of this stage is transforming the oral content into the written form. Additionally, by negotiating ideas for a new book/story in a group, each learner creates their own Small Book. The priority is task completion.

By retelling the story sentence by sentence, learners progress to the wording activity. At this stage, learners may make both grammatical and spelling mistakes, and the teacher reads out the correct form several times to promote awareness, followed by transcribing. Learners have sets of written sentences on large separate sheets of paper. Later, they can order the sentences on the blackboard. Creating a new story is then negotiated: what pet to be instead of the frog, the colour, the name, what it likes (to do) etc. All the learners must state their preferences; if some are reticent or shy to speak in class, the teacher prompts them gently. Once the details of the new book are decided, learners form a group and work on drawing pictures in accordance with writing on adequate paper. The pages are later stapled, and a simple small book is created. In this phase, the three tasks of recalling, writing, and making a small book are almost equally divided into 15-minute slots. For this task, the concentration of the class needs to effectively controlled.

The finished works varied in completion: - 5 legged or 3 legged dog, stick-legged, or cat-like dog; excluding grammatical errors, all other details should be tolerated and admired.

In the Philippines, to prevent learners from chatting with classmates, background music from PC in medium-low volume was applied as a settler. If applied in Japan, depending on the competence of learners’ writing speed and ability, the teacher can pin text sentences on the blackboard for copying. Additionally, instead of using music, cooperation within a group can be encouraged.

**Stage 1, Phase 4 Making a Big Book**

Review of the story

Making of a Big Book - match pictures and texts, the size, the pages etc.

Number and format pages

Divide the class into groups to work on 1 page per group

Arrange the made-up pages and assemble

The objective of this phase is to share ideas with classmates, promoting learners' ability to work in a group and imparting a sense of achievement on completing the shared work. All the details of the book making, such as the size of the book, the number of pages, and the format, are topics of class discussion in English. However, it can be performed in mother tongue with interspersed English. Additionally, the first Big Book can be teacher-centred, so that learners understand the process, following which learner-centred books can be used.

**Stage 1, Phase 5 Activities in conjunction with games**

Read the covered word and the whole sentence

Compete the speed and accuracy in completing sentences in 2 groups

Arrange letters to form a correct word

Find words in a puzzle

Games refer to languages games, and the objective at this phase is reading the Big Book with ease using minimum prompting in chorus. Learners are led to pay attention to the entire structure of texts, be aware of sentences and words, and the overall writing. Letters and phonographic correspondence should ideally be the focus of their learning. The learners can 'explore certain aspects of a certain topic and the language associated with it' (Bourke 2006: 282). However, the level of enjoyment is also vital for TEYL, so once the language games are completed and acquisition is confirmed, a role play or TPR reproduction of the story can be enjoyed.

**Conclusion**

Using picture books is proposed as one of the major considerations to promote second language acquisition for young learners in communicative environment. The merits of the picture books are that visuals assist young learners first to look and complement the meaning of an unknown story when reading. The usual length of ready-made and customized picture books should suit the concentration time span of young learners.

In addition, another benefit of using picture books in TEYL is that it is possible to foster understanding of cultural heritages and differences by blending cultural factors in stories and pictures. Elements from different cultures will permeate children's perception easily without prejudice. As Bourke (2006. 280) notes, 'children live in a world of... dragons and monsters, talking animals, and alien beings'. Different cultures can blend in their imagination if not cognitively controlled.

Japan is currently in the middle of education reform that will be carried out from 2020 onwards. One controversial and challenging issue among many is the compulsory implementation of English language from the 3<sup>rd</sup> grade in elementary school. Teacher development or up-skill training for teachers may not be sufficient; syllabus may be prescriptive and uni-directional to meet National Course of Study requirements; and

in the transitional period prior to 2020, schools are facing issues in allocating extra hour/s in the tightly scheduled school time-tables. As Nunun (qtd. Bourke, 2006. 280) has noted, ‘learning is mutually constructed as a collaborative experience between teachers and learners’, and picture books can benefit both teachers and learners\*<sup>5</sup> with the proposed model pedagogy of CLE.

### Acknowledgement

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### Notes

1. Japan has its TEYL at elementary school introduced in 2011, however, the class is treated as an ‘activity’ for year 5 & 6, 1 class/week, totaling 35 hours/year. Also the activity does not specify English as the target language, which means technically any foreign language can be used.
2. In the Philippines it had partnership with the Department of Education and succeeded in producing substantial teacher manuals as well as website for resources. ([www.CLE.ph](http://www.CLE.ph))
3. The purpose of the study is to find effective ways of learning with the focus on concentration from pedagogy, andragogy to gerogogy. For the young ones they made a digital picture book MU<sup>3</sup> PictureBook (MU3-PB) and conducted experiments on 4 year olds accompanied by their mothers. The comparison between using MU3-PB and iPad-PB was also performed, and showed children show longer concentration on MU3-PB than iPad.
4. Data collected at following schools: Stage 1, phases 1-5 at Mandaluyong Elementary School, Mandaluyong City, Manila. Stage 2, phases 1-5 at Tangos Elementary School, Navotas City, Manila. Courtesy of Rotary clubs of Mandaluyong and North Bay East respectively, Dr. Florietta M. Quijano, and Ms. Ruby E. Baniqued. In 2013, the website [www.cle.ph](http://www.cle.ph) was an open source and supplying teachers manual for all stages, however, as of 2017 the site seems to have been cancelled.
5. Book suggestions as a Starter Books for Japanese schools. At lower graders, pattern books such as *Brown Bear, Brown Bear, What Do You See* by Bill Martin, Jr., *Dear Zoo* by Rod Campbell, and *Ten Little Ladybugs* by Melanie Gerth, Kinugasa (2013.90) recommends *White Rabbit’s Colour Book* by Alan Baker, *Quick as a Cricket* by Audrey Wood, and classic tale of *Three Billy-Goats*.

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## *A Comparison of Readability of Digital Picture Books for Children with Reading Disabilities*

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### **Abstract**

Digital picture books these days have more text with audio narration that is synchronized with word highlighting. This method, known as Media Overlay, is based on a web technique, where the text style, such as color, bold, and highlighting, can be changed using cascading style sheet (CSS). Digital picture books need to consider the coloration of pictures and letters. However, digital picture books with narration often do not consider the coloration of pictures and letters and its impact on the ease of reading for children with reading disabilities. A few studies in this field have stressed on the bold text style. This study was conducted to determine whether the text color, highlighting color, or bold text style affect the ease of reading for children with reading disabilities. Six children with low vision (three boys and three girls) between seven and twelve years of age and 48 controls (13 boys and 35 girls) between six and ten years of age participated in this study. The digital texts were created using different text colors, highlighting colors, and bold text. The digital texts were read using the reader application by Apple, iBooks, on a 9.7-inch Apple iPad Air. The participants selected the readability combination. The results showed that children with low vision found it easier to read along when the audio was synchronized with text highlighting or color, and the control group found it easier when the audio was synchronized with bold text style. The causes for other reading disabilities require further investigation.

Keywords: digital picture book, reading disability, dyslexia, tablet screen, readability, dyslexia

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## Introduction

People with print disabilities are unable to read standard printed material because of a visual, physical, perceptual, developmental, cognitive, or learning disability. Individuals with poor vision resulting from advanced age are also included in this category. Print disabilities can prevent a person from gaining information from printed material in a standard way. Instead, these individuals are required to utilize alternative methods, such as technological or personal aids, to access information from standard printed material.

Children with print disabilities are unable to use standard methods to gain visual information from printed materials. These children are required to access printed materials by using alternative methods, such as technological means (Schneps, O’Keeffe, Heffner-Wong, & Sonnert, 2013). The e-book format can easily be used to incorporate multimedia information that is impossible to express through conventional paper media. This includes sound, video, and 3D images. Multimedia information of this type could conceivably provide ways to help readers improve word pronunciation and to develop an understanding of word meanings (De Jong & Bus, 2003; Lewin, 2000). This could result in the satisfaction of a reader’s curiosity.

Technological innovations have led to inherent changes in individual reading preferences; many book publishers and periodicals have abandoned print in favor of digital media. Digital picture books are widely available, and can be accessed with the appropriate portable electronic device. Children with print disabilities can read text with the help of such e-reading technology.

Many current digital picture books provide narrated text that is synchronized with word highlighting. This method, known as Media Overlay, is based on a web technique in which the text style (e.g., color, bolding, and highlighting) can be altered through the use of Cascading Style Sheets (CSS).

Suitable font sizes and typefaces, as well as audio that is synchronized with word highlighting, could facilitate reading for people with print disabilities. Accessible e-books contain synchronized media files, such as those that provide audio narration. Examples of such materials are the Digital Accessible Information System (DAISY) format (National Information Standards Organization, 2005) and EPUB3 (International Digital Publishing Forum, 2011, in which words or sentences are highlighted as they are narrated).

However, digital picture books that include narration often do not consider the coloration of pictures and letters, which can affect the reading ease of children with reading disabilities. A few studies in this field have placed emphasis on the bold text style. This study was conducted to determine whether the text color, highlighting color, or bold text style affect the ease of reading for children with reading disabilities. During this study, we considered the design of digital picture books for all children.

## Methods

### Participants

The participants of this study include six children with low vision (three boys and three girls) between seven and 12 years of age, and a control group of 48 children (13 boys and 35 girls) between six and ten years of age. The vision acuity of children with low vision was less than 0.3 with normal color vision. This study was approved by Sagami Women's University.

### Apparatus

This experiment was conducted on a tablet computer (9.7-inch Apple iPad Air). Digital texts were read using the Apple iBooks reader application.

The participants were asked to seat themselves on a chair positioned in front of the tablet computer. Children in the control group were positioned 50cm from the tablet screen, while children with low vision were positioned at a distance that enabled them to read the text.

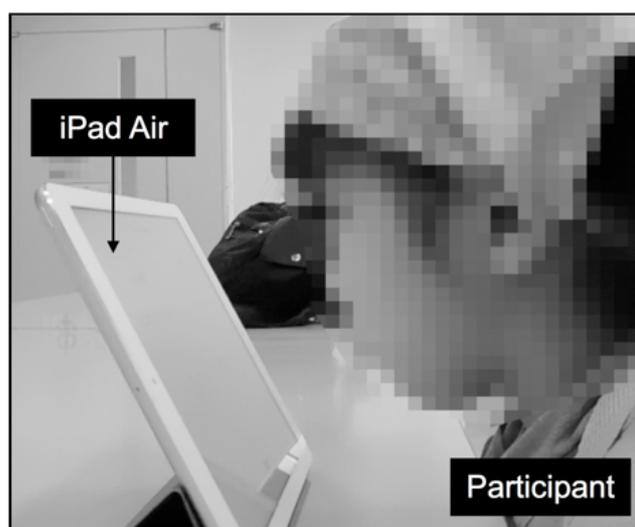


Figure 1. Experimental setup.

### Stimuli

This experiment used eleven types of digital texts. One type did not provide any emphasis of the text, while the other ten types provided synchronized emphasis of the text as it was narrated (Table 1). The sentences were selected from the storybook titled "One Cat." None of the participants had previously read the storybook used in the experiment.

Type 1, Type 3, Type 5, Type 7, and Type 9 provided synchronized narration and placed emphasis on entire sentences. Type 2, Type 4, Type 6, Type 8, and Type 10 provided synchronized narration and placed emphasis on individual words. The font color of each type was black, and the background color was white.

The emphasized color selection was used to variously set warm and cold background colors as they were recommended for readers with dyslexia. There was a 13:1 contrast ratio between the emphasizing color and font color.

The EPUB 3.0 media overlay is able to emphasize words or sentences while synchronously playing audio narration of the highlighted text.

Table 1: Emphasizing style of each type.

For example, “ぼくはのらねこ。” English translation: “I am a stray cat.”

Type	Emphasizing style	Visual indicator
1	ぼくは のらねこ。	burly wood: R231, G199, B147
2	ぼくは のらねこ。	burly wood: R231, G199, B147
3	ぼくは のらねこ。	light sky blue: R151, G212, B244
4	ぼくは のらねこ。	light sky blue: R151, G212, B244
5	ぼくは のらねこ。	maroon: R106, G0, B0
6	ぼくは のらねこ。	maroon: R106, G0, B0
7	ぼくは のらねこ。	dark blue: R0, G0, B175
8	ぼくは のらねこ。	dark blue: R0, G0, B175
9	<b>ぼくは のらねこ。</b>	shadow: R0, G0, B0, shading: 3px, expand 1.2 times(boldface)
10	<b>ぼくは のらねこ。</b>	shadow: R0, G0, B0, shading: 3px, expand 1.2 times(boldface)
11	ぼくは のらねこ。	none

### Procedure

The participants were provided with task instructions, and stimuli were displayed randomly on the screen. The participants then read each of the eleven text types, and selected the most readable text type.

## Results

Children with low vision were more likely to select Type 4 and Type 7, which both used blue color. The control group was more likely to select Type 9 and Type 3, which indicated a preference for either blue color or boldface (Table 2).

A Wilcoxon Matched Pairs Test was conducted to compare the reading ease of children with low vision to those in the control group. There was a significant difference between them ( $p < 0.01$ , children with low vision  $n = 6$ , controls  $n = 48$ ; Wilcoxon signed rank test,  $z = 2.52$ , two-tailed).

Table 2: Results of children with low vision and control group.

( $n$ ) was the number of answers.

Type	Emphasizing style	Low vision	Control
1	ぼくは のらねこ。	17% (1)	17% (8)
2	ぼくは のらねこ。	0% (0)	2% (1)
3	ぼくは のらねこ。	0% (0)	23% (11)
4	ぼくは のらねこ。	33% (2)	6% (3)
5	ぼくは のらねこ。	0% (0)	0% (0)
6	ぼくは のらねこ。	0% (0)	0% (0)
7	ぼくは のらねこ。	33% (2)	8% (4)
8	ぼくは のらねこ。	17% (1)	2% (1)
9	<b>ぼくは のらねこ。</b>	0% (0)	25% (12)
10	<b>ぼくは</b> のらねこ。	0% (0)	4% (2)
11	ぼくは のらねこ。	0% (0)	13% (6)

## Discussion

We discovered that it was easier to read digital text if words or sentences were highlighted in blue or boldface. The use of digital text with words or sentences emphasized by the color blue has been indicated as an effective method for delivering visual information irrespective of print disabilities. The most common selection for ease of reading in the control group also provided boldface emphasis (Type 9). The participants struggled to read digital text type that was not emphasized (Type 11).

These results are accord with Stein's (2014) findings, wherein children with visual reading problems were able to improve their reading progress by viewing text through yellow or blue filters. Notably, some children benefited more from wearing the blue filters than the yellow filters.

The practice of emphasizing words or sentences that are synchronized with narration may help readers with low vision distinguish digital text. On one hand, we found that children with normal vision did not depend on color when reading. Rather, children with normal vision may benefit more from reading boldface text.

When designing digital picture books, creators may need to offer two version; that is, one with color vision, and one with boldface vision. Future studies should examine the influence of digital text on reading comprehension for people with reading disabilities.

### **Acknowledgment**

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***The Use of Comics to Development the Effectiveness of Training Courses  
and Continuing Education Programs***

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The Asian Conference on Education 2017  
Official Conference Proceedings

**Abstract**

Training Course is not a basic program; it is based on previous foundation experiences, targeted at specific groups, familiar with the educational context and willing to continue the cumulative construction of previous scientific and practical experience, and may be Attendance of the training course is purely motivated by the trainee, or motivated by the executive management of the trainee, where the trainee obtains a skill that contributes to the development of his professional work and keeps up with the scientific and educational developments and gives him a certificate of specialization in his field of work. The aim of the research is to find out the effectiveness of using the art of comics and its effect elements as an independent variable during the serial of lectures presented through continuing education courses at Continuous Education Centre, at the University of Baghdad as a new method to teaching owing to its ability to care for the individual differences among the trainees, and measuring the impact on the cognitive achievement, skills and trends of the trainees in its traditional form.

Keywords: training courses, Comics, Animation, Education Programs, Development, traditional education

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## Introduction

Growing recognition of Comics in the broad field of education has been evidenced through the implications of Comic books, Manga and graphic novels in various teaching and learning settings across diverse age levels (Bitz, 2010<sup>(1)</sup>, 2015<sup>(2)</sup>; Kraver, 2013)<sup>(3)</sup>.

Comics and cartooning as tools in education have a history that can be traced back to the early 19th century under the pen of Swiss schoolteacher, Rudolph Töpffer (Smolderen, 2014)<sup>(4)</sup>. Soon after the form of comic books emerged in the early 1930s, extensive studies of comics in the classroom were initiated and encouraging analyses linking comics to improved literacy appeared in journal articles throughout the Golden Age of Comics (Sones, 1944<sup>(5)</sup>; Zorbaugh, 1944<sup>(6)</sup>; Frank, 1949<sup>(7)</sup>; Makey, 1952)<sup>(\*)</sup><sup>8</sup>.

Comics Origins: Historians confirm that the comics existed originally from the beginning of creation and the learning of human drawing on the walls of the caves and the animals ferocious like Lions, Tigers and others, and was intended to emphasize the prey when the group members leave the cave for the purpose of harvesting food crops near the cave, so blending stories with drawings existed since Hieroglyphic civilization, for example, or in Rome ancient (columns of Trajan), or, The inscriptions on clay tablets in the Babylon ancient (Hammurabi), and others for example, the last trial of Michael Angelo in the Cathedral of Senstein.

Evolution: In the history of comics, different and varied paths were observed in different cultures. Scientists have assumed in history that the beginning of the comics relate to the paintings of the cave of Lasko. The beginning of its production in the (19<sup>th</sup>) century was associated with the development of a device called the "Daedalum", invented by George Horner" in 1834. It is a cylindrical shape on which a paper strip is filled with a series of drawings. , And seen through the openings above the surface, the shapes appear as if moving, and contributed such a device in the introduction to the invention of animation.

By the middle of the 20th century, the art of comics flourished, especially in the United States and Western Europe (especially in France and Belgium) and Japan. The

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<sup>1</sup> . Bitz, M. (2010). When commas meet kryptonite: Classroom lessons from the comic book project. Language and literacy series. Teachers College Press.

<sup>2</sup> . Bitz, M., & Emejulu, O. (2015). Creating comic books in nigeria: International reflections on literacy, creativity, and student engagement. Journal of Adolescent and Adult Literacy. DOI: 10.1002/jaal.451.

<sup>3</sup> . Kraver, J. (2013). Reinventing the Composition Classroom, or How Making Comics Can Clarify the Composing Process. SANE journal: Sequential Art Narrative in Education, 1(3), 4.

<sup>4</sup> . Smolderen, T., & Ebrary Academic Complete (Canada) Subscription Collection. (2014). The origins of comics: From william hogarth to winsor McCay. Jackson: University Press of Mississippi. doi:10.14325/mississippi/9781617031496.001.0001.

<sup>5</sup> . Sones, W. W. D. (1944). The comics and instructional method. Journal of Educational Sociology (American Sociological Association), 18(4), 232– 240.

<sup>6</sup> . Zorbaugh, H. (1944). The Comics as an Educational Medium. Journal of Educational Sociology, 18(4), 193-194.

<sup>7</sup> . Frank, J. (1949). What's in the comics? Journal of Educational Sociology, 18(4), 214-222.

<sup>8</sup> . Makey, H.O. (1952). Comic books - a challenge. The English Journal, 41(10), 547-549.

history of the European comic series Rodolphe Töpffer's (1830)<sup>9</sup>, which gained popularity after its success in 1930, is often followed by tapes and books such as (Tan tan's Adventures). American comics emerged as a media medium in the early 20th century with comic supplements appearing comically.

In 1930, patterns of comics and magazines emerged comically. In 1938, "Superman" appeared, accompanied by the emergence of Japanese comics and caricatures from the early (12<sup>th</sup>) century. Modern cartoons appeared in Japan in the early (20<sup>th</sup>) century, and comics and comic books expanded rapidly in the post-World War II era, coinciding with the popularity of a group of cartoonists such as Osamu Tezuka<sup>10</sup>. The image initially encountered the difficulty of proliferation and popularity, but at the end of the twentieth century began to find greater acceptance among the public and the academic community.

### **Continuous education Vision**

Continuous education has attracted many studies and research from specialists in developed countries and their research and university institutions aimed at increasing their association with the field of work and its needs and increasing the follow-up, efficiency and compatibility of the participants in continuing education programs.

The important value in the type of studies for the purpose of providing means to measure the efficiency of continuing education programs according to the output information absorbed by the beneficiaries participating in those programs.

As well as to understand the benefit of continuing education held by research and scientific institutions to increasing the efficiency of production, each in the place of field work.

Continuing education is all that a person can acquire or (gain) throughout his/ her life from educational and social institutions through educational, cultural and vocational programs using the available educational methods and means to help maintain the scientific and cultural benefit of individuals and groups in the professional and life aspects. In which institutions and other organizations participate and life becomes a school that learns everyone from life and life.

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<sup>9</sup> Rodolphe Töpffer's (31 January 1799 – 8 June 1846) : Swiss teacher, author, painter, cartoonist, and caricaturist. He is best known for his illustrated books (*littérature en estampes*, "graphic literature"). Swiss teacher, author, painter, cartoonist, and caricaturist. He is best known for his illustrated books (*littérature en estampes*, "graphic literature")

<sup>10</sup> Osamu Tezuka the grandfather of manga and anime, created hundreds of unforgettable characters during his 40 year career as an illustrator and animator. His influence on generations of artists has been immeasurable, and is still felt today across Japan and beyond. This volume collects rough concepts from several of Tezuka's anime and manga projects. Included are characters from Mighty Atom (Astro Boy), Jungle Emperor (Kimba the White Lion), and many more. See the link: <https://www.rightstufanime.com/Osamu-Tezuka-Anime-Manga-Character-Sketchbook-Artbook-Hardcover>

## The Research Methodology

The study group was taught in accordance with Comics technology method to keep learning while the comparison group was taught in the traditional manner.

## History of Comics

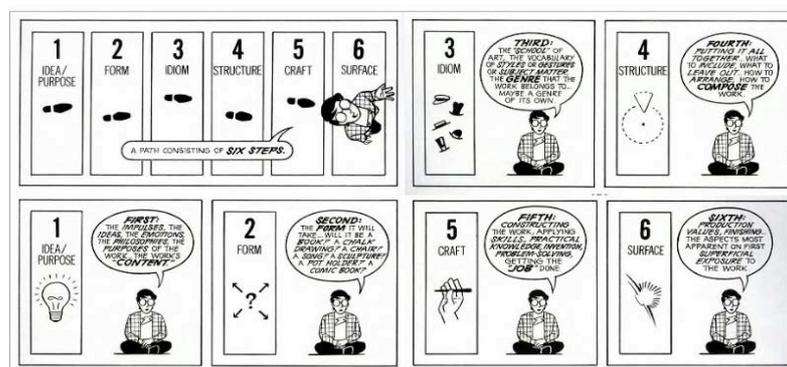
The (21<sup>st</sup>) century is the visual time for visual culture, but it requires high levels of reading efficiency. The Comics: a series of total arts including a narrative representation of narrative arts. It is an art that combines words and images printed in a unique sequential manner.

The origin of the word comic means "cartoons" because the comics were first painted were funny clips or cartoons in the newspapers (almost similar to the art of caricature in our Arab countries) and hence came the label until it is called on all types of graphics even if not you are comic or funny. There are several schools in this art, the most famous of which is the American school, the European school and the Japanese school. It is noted that the Western comics do not all carry the same name. For example, the Japanese comics are called Manga and the European comics are called Bandes dessinées. By the end of the last century, there were three major labels in comics: comics album in Europe (French-speaking countries, tankaboon in Japan, graphic novel in America and England.

## Comics Definitions

In his book "Understanding Comics", "Scott Mc-Cloud" defines Comics as<sup>(11)</sup>: "Sequential Art" by focusing on the considerations of the medium itself and its definition, that when the motor sequence - if only the sequence of two images - to another body or another form, it becomes a visual art sequentially, "Scott" explained that the difference between bodies is that the animated films are followed by pictures in the sequence of time.

### Understanding Comics by Scott McCloud

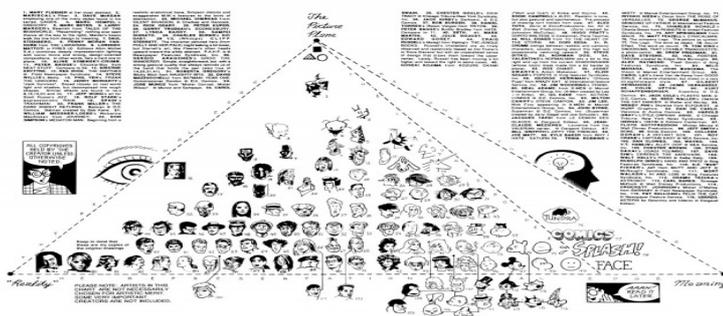


<sup>11</sup> Scott Mc-Cloud. Understanding Comics. The invisible art. Harper Perennial. Haper Collins Publishers. NewYourk. ISBN:0-06-09-7625-X(PBK).1<sup>st</sup> edition 1994.(222)pgs.

## Comics define by Leoné Tiemensma (2009)

The art of storytelling, a printed output in the information society, is widespread in various forms of media, and has a great influence on popular culture. For many years the Comics were looking at topics aimed at recreational reading, and today it became more accepted as a legitimate form of art and literature, find its way to the classroom. " (Leoné Tiemensma, 2009)<sup>(12)</sup>.

The art of comics or the art of storytelling, as an art that combines two facts story and image; that is to say the story through pictures drawn either manually or by computer newly accompanied dialogue or within the context of the text box original image of the so-called "panel" or rectangle/ A graphics box; a means used to express ideas through images, often along with other textual or visual information.



Most comics are along the bottom axis of the triangle (above), but there are examples of comics that fill the whole space.

The "researcher" defines the art of comics or the storyboard as procedural: "Comics" is no matter what it is called "graphic and moving cartoons, storyboards, sequential stories or serials" in which the "painter and the scenarist" seeks to deal with an idea or subject and how to deal with it in a comical way. At all levels, and presented sequentially and sequentially through a display machine or through computers with (2D) or (3D) (dimensions).

## Animation Definition

The term of animation / animated / animator comes from the Latin verb,, animate "that means "to give life to" (Wells, 1998: 10). "Animation is illusion of movement" (Morrison, 2003: 174). Anima in Latin means soul (Kerlow, 2004: 269). There are many definitions of animation. According to Mayer (2005: 287) animation can be defined as "series of varying images presented dynamically according to user action in ways that help the user to perceive a continuous change over time and develop a more appropriate mental model of the task" According to Peters, (2006: 4) animation means: to give life to: fill with life; to import interest or zest to: enliven; to fill with

<sup>12</sup> . Leoné Tiemensma. Visual literacy: to comics or not to comics? Promoting literacy using comics. IFLA. WORLD LIBRARY AND INFORMATION CONGRESS: 75TH IFLA GENERAL CONFERENCE AND COUNCIL. 23-27 August 2009, Milan, Italy. Date submitted: 15/05/2009. See. <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.150.8199&rep=rep1&type=pdf>

sprit, or resolution; to inspire to action, prompt; to impart motion or activity to; and to make, design or produce (a cartoon for example) so as to create the illusion of motion. Animation is considered to be all of the above definitions: Animation is the process of creating a continuous motion and shape change illusion by means of rapid display of a sequence of static images that minimally differ from each other.

Origins: Historians confirm that the comics existed originally from the beginning of creation and the learning of human drawing on the walls of the caves and the animals ferocious Lions and tigers and others, it was intended to emphasize his prey when the group members leave the cave for the purpose of harvesting food crops near the cave, was blending stories with drawings existed since Hieroglyphic civilization, for example, or in ancient Rome (columns of Trajan), or, for example, the last trial of Michael Angelo in the Cathedral of Senstein.

### **Animation Art Anime and Manga**

Anime is one type of animation produced by Japan, and the anime is derived from the word "animation" in the sense of animation. Manga: The term used by Japanese for storytelling, used outside of Japan to denote comic books produced in Japan, or comic books drawn in a style similar to Japanese. This term may be used to refer to the industry related to this art as well as to the media through which it spreads (journals, magazines, etc.). Manga is a social phenomenon in Japan, which deals with almost all subjects (romance, adventure, science fiction...) and goes to all segments of society as a whole. And is one of the most successful experiences in the field of comics globally. Japan's weekly Manga revenue is equivalent to the annual revenue of the American comics industry.

### **Pre-Studies:**

#### **1. Salah Mohammed Salih and Abdul-Sattar Ibrahim Shibeab. The Impact of Using Animation on Developing Fourth Year (Science Division) High School Students' Language Skills.<sup>(13)</sup>**

The study aims at finding out the effectiveness of using animation in enhancing the levels of reading skill of the students; to what extent using animation can develop the students' levels in the listening skill; and whether using animation has greater impact on one of these two skills rather than the other. Based on the study questions, the researcher adopted the null hypothesis and the quasi-experimental approach (tests) to the investigate the effectiveness of using animation technology as a teaching method to gauge the impact it may have on developing the English language receptive skills (reading and listening) of 4th-Year (Science Division) High School displaced Students' in Sulaimaniyah Governorate during the academic year (2015- 2016).

The data obtained from the mathematical calculations of the scores of the pre and posttest of both the experimental and control groups substantiate differences between the average score of experimental group for pre and posttest at both the reading and

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<sup>13</sup> Salah Mohammed Salih and Abdul-Sattar Ibrahim Shibeab. **The Impact of Using Animation on Developing Fourth Year (Science Division) High School Students' Language Skills.** University of Anbar. Anbar University Journal of Language & literature.. ISSN: 20736614 year: 2017 issue: 23 pages **Pge:** 171-215 . website: Iraqi Academic Scientific Journal: link: <https://www.iasj.net/iasj>

listening skills and their sub skills. This indicates that animation has positive effect on increasing students' achievement. Animation has proved its effectiveness on developing reading and listening skills on all the levels. The gap between the experimental group in the pre and post test scores is wide. The gap is also wider between the scores of the control group and the experimental group in favor of the experimental group. The effect size indicated that the effect of animation movie program on developing the receptive domain for the experimental group is larger than those of control group.

## **2. Khalid Farjoun's study (2000):**

The study aimed to design an educational program for animation to teach the concept of the Internet, and explained the Internet (communications), and how to connect and use of light signals and sounds, and used the animation in the form of a small ball moving in all directions depending on the signals sent, and in this program interpreted animation The concept of the Internet is hard to follow, and it is difficult to explain it in any way (Khaled M. Fargoun.2000)(\*)<sup>14</sup>.

The "researcher" benefited from previous studies in enriching the study to become more clear and specific and mature in presenting ideas through:

1. Identify the theory of vision constancy which explains the science of motion graphics.
2. Knowledge of educational theories that show the importance of the impact of comics and animation on participants of all ages.
3. To Ensure the importance of comics and animated educational graphics in providing ideas and themes, and the process of maturity, and their importance in the development of knowledge, skills and attitudes, and their positive impact in the educational process in the development of those skills by supporting academic lectures, and the diversity of skills that are taught to participants.

## **Comics and Animation and its role in the educational process**

Comics is able to become an educational mediator because of the ability to deepen the human thought and reveal the mystery of the mystery of some subjects, whether a philosophical idea or a phenomenon or a complex physical complex become all living forms that develop the spectator's imagination and add to his information much difficult to collect by reading Just. For example, complex weather films show the navigators the weather, location and characteristics of cloud and wind, which can only be understood by weather specialists (Frank & Tom, 1991; 527).<sup>(15)</sup>

Since the cinema has entered the field of education, there has been a dispute between educational academics and filmmakers about the use of film as an educational tool. Many conservative educators see education as a serious process that should not be done in a light-mannered manner. That the educational process should become as

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14 Khaled . M. Fargoun. Discussion of Animation Period Time and Verbal Abstraction Vastness " Internet Example", Koeln University, German, PhD. Marchm 2000, PP.200-225

<sup>15</sup> . Frank Thomas & Tom Johns Ollie; **Disney, Animation , The illusion of life**. New York, Abbevilless pub, 1991,p:527.

boring as possible, they resorted to the presentation of subjects in a thrilling manner (Rasha Salah. P. 21)<sup>(16)</sup>

Various studies have emphasized the importance of using animation films in education, how they are applied in different educational situations and the importance of educational drawings in providing information and theoretical knowledge. Librarians and library have faced a lot of questions about books and magazines that have been published in a journalistic fashion. Novels and graphs look more like literary novels. For example, editions by Moore, Gibbons and Higgins (1986) were published by Time magazine as one of the top 100 English-language novels published since 1923 (Grossman and Akayo, 2010), and Watchman released a series of monthly comics. As well as the publication of the periodical / novel, and included the periodic guides to identify some of the systems of public indexes. The evidence and academic studies indicate that picture books are available in libraries in different forms. The strength of any library lies in how this type of books and graphic novels are collected provided, and how they affect the recipients and attract them to different groups of readers. (Edward Francis Schneider.2014)(\* )<sup>17</sup>

### **Theories Explain the Educational Effect of Comics and Animation**

Through the research survey (the researcher) find that the sources that deal with the relationship between animation and educational aspects and reached three theories that explain the educational impact of animation graphics:

#### **1. Social learning theory:**

This theory explains the effect of moving graphics on the development of the emotional side, and can be used in the production of animated educational drawings by producing a cartoon film showing the character of the cartoon through a story whose general purpose is to establish values and behavior and desirable in order to enable the young learner who then apply those values In his real life.

The researcher believes that this theory is focuses on the emotional aspect through the construction of a story aimed at addressing a social problem in the establishment of values and correct behavior and maintain the most important customs and traditions in society.

#### **2. Theory of learning by observation**

The "researcher vision" that the theory of learning explains the effect of moving graphics in the development of the cognitive aspect. It can be used in the production of animated educational drawings by producing a motion picture film similar to the documentary films where cartoon characters display information.

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<sup>16</sup> . Rasha Salah El Din Jamal. **Effectiveness of use the interactive animation program to development some geographical concepts on children kindergarten**. MsC. Thesis. Cairo University: Institute of Educational Studies. Education Technology Department. 2005.(pge:21)

<sup>17</sup> . Edward Francis Schneider. **A Survey of Graphic Novel Collection and Use in American Public Libraries. Evidence Based Library and Information Practice 2014,pge:9.3**

### 3. Theory of education in imitation:

This theory suggests that if a learner sees a dynamic performance repeatedly presented through a cartoon character, the learner will absorb and perform this performance, especially if the cartoon character of the movement is acceptable to the learner. (Farouk Rousan, 2000)<sup>(18)</sup>.

The "researcher" believes that this theory of Education explains the effect of moving graphics in the development of the skill, and can be used in the production of animated educational drawings through the production of a film animation cartoon character performs a specific mathematical skill and accuracy of performance integrated, which leads the learner to reproduce the performance of that character and try Imitate them to succeed.

#### Types of animated cartoons

##### Comics' classification

Comics can be classified according to the goal that can serve into four types:

**1. Comics Educational films:** films that show the steps of preparing a particular device or training a special class on it.

The "researcher" believes that this type of this film is the basis of the current study. It is a film based on the existence of an educational lesson with general and educational goals. The student is required to watch the film to acquire a skill or concept. Therefore, the 'researcher' was keen to focus on the study experience that this type of educational films specifically because it is the most important to the student education technology..

**2. Comics Cultural films:** The film, which deals with an educational or cultural subject, whether historical, religious, literary, scientific or educational, art or sports, or in the field of science, is called.

"the researcher" see that the difference between educational films and teaching educational films have a learning objective, but the goal of a general and comprehensive tends to being a culture and entertainment such as documentary films that depend on satisfying the tastes of a wide audience, and at the same time does not deviate from the educational orientation, the movies teaching are More specialized and targeted to a more specific audience.

**3. Comics Instructional films:** films that deal with guidance and guidance for a special group or the general public, such as traffic rules. The researcher considered that the students of the research experiment learn how to produce instructional films, in view of the educational institution's need for guiding films for its students.

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<sup>18</sup> . Farouk Rousan. **Modifying and Building Human Behavior**, Amman, Dar Al Fikr for Publishing and Distribution. 2000.

**4. Media films:** It deals with media news such as the dates of the start of exams and how to prepare for them or information about the journey and its course.

### **Comics features (animation and graphics)**

1. The ability to simplify everything that is complex, very fast or very slow in nature and difficult to analyze through the film of the movement of living or embodied through the static image.
2. The ability to represent a reality that is difficult to perceive by perceiving the senses in tangible living, by focusing on highlighting the main elements of the snapshot and excluding the few elements that may distract attention from the subject.
3. Clarification of some abstract scientific concepts that so difficult for learners to understand the meaning of reading about them such as electricity, nuclear reactor, chemical bonds, and other scientific experiments.
4. Increase the effectiveness of learning, combining sound and image synchronously, which helps to involve more than one sense in the educational situation.
5. Reviving the past, providing an alternative picture of a dynamic reality in the past as historical, political, social and scientific events recorded by previous generations.
6. Communicating content a highly effective way, by dealing with the script and dialogue, in which the characters present their multiple views in a story that addresses the different viewpoints with tremendous potential. It is highly influential in this area and deals with the most complex subjects. (Mohammad Dahi, 2014).

### **Case Study**

**First:-** To build an academic community environment to use the "Comics" during the teaching process at class, the "researcher" organized a "comics symposium" cooperation with the University of Baghdad/ Continuous Education Centre , Media College, The College of Art, and children Cultural Center at Ministry of Cultural – Iraq; titled : **(Investment Comics and Animation to serve the academic community) , which held on Wednesday 5/4/2017.**

The Comics Symposium was achieved by Prof. Dr. Salam Jabbar, Head of Design Department at the College of Arts, and chaired by Muntaha Abdul Karim Jassem (the researcher) at University of Baghdad.

### **The following papers were discussed:**

1. Comics and Animation; the beginning and the stages of development, opportunities for investment to serve the Iraqi society" by Professor Dia Al-Hajjar - children Cultural house/ Ministry of Cultural- *Iraq*
2. Comics and animation; personal experience of Talib Makki , presented by miss. Maha Taleb Makki. Children Cultural house/ Ministry of Cultural- *Iraq*

3. Design of information in the visual press (the morphological model) of the researcher Dr. Falah Hassan Ali / Faculty of Media - Press Department. University of Baghdad.

**Second:-** During the (comics Symposium), the (researcher) Viewed (7) comics and animation Movies: See (Table:1)

Table:1; Comics and Animation Movies				
Seq	Address Film	Directed by	College/ ministry	type
1	The symphony of spirits	Dr. Sherouk Malik	College of Arts	Animation
2	The Wall	Phd.Stud. Ali Hashim	College of Arts	Animation
3	Gilgamesh	Scenario by MsC. Stud. Mustafa Ali	College of Arts	Animation
4	The Right Coast Film	Dr. Falah Hassan	College of Media	info graphic
5	Continuing education	PhD. Stud. Muntaha Abdul Kareem	Continuou s Education Centre	Comics
6	"Be quiet please"	Professor Fakher Hussein	Children Cultural house /	Animation
7	The Right of Education	Mr. Alaa Kazem	Children Cultural house / Ministry of Cultural-Iraq	Comics

At the end of Comics Symposium: the (researcher) celebrating and honoring the first Comics Pioneers in Iraq, by Talking about their experiences with comics.

### **The Recommendations of "Investment Comics and Animation to serve the Academic Community" Symposium**

1. Comics, Animation and illustration programs have a relationship with the most important and latest digital concerns did not take the real place in the media, advertising, in the presentation of the most important ideas and topics as the case of the info graphic and 3D and 2D programs.

2. The weakness of writing in the scenarios within the themes of comics and animation is objectively handicapped for the development of this art, which shows the need to rehabilitate and train the students on how to write the text or scenario through the establishment of a series of specialized training courses.

3. The importance of adding comics as a basic material in the curricula of the digital programs for the faculties of arts and media
4. Allocation of software quotas for comics and animation in computer, programming and Scientific colleges.
5. Allocation of quotas for advanced hardware hard ware to be part of the units of the study of specialized colleges and computer science and architecture
6. Establishment of a scientific and cultural museum for the Comics as a scientific and technical event both locally and internationally
7. Assign specific days for cultural performances of the Comics to be part of the national cultural system.
8. Compelling ministries and institutions in Iraq to use the expertise of Iraqi comic's artists to carry out awareness campaigns and advertising.
9. Work on the development of the Comics system from 2D Comics to 3D Comics through the allocation of scholarships and training required in the countries producing this art.
10. Preparation of an integrated program throughout the year that includes a series of training courses and workshops in the field of investment of the programs of Comics, Animation and illustration by the Continuing Education Center and implemented in collaboration with professors who have experience in this field from the Faculty of Arts and Information and the House of Culture of children to train students and prepare them to produce Projects of specialized films in the field of academic education.
11. The establishment of an annual festival of solidarity and celebrations at the University of Baghdad, where the latest productions of the films in the comics and animation, the outputs of which are presented in the presentation of a scientific, cultural and developmental vision that serves the academic community.
12. Selection and marketing of comics and animation educational films via YouTube channels at the University of Baghdad website.



### The Adopted Program

The study adopts the Comics and animation as a technique for teaching the participants the skills of advanced research during the training courses program.

There is not much time to delve into a lot of text materials during our training Courses. The comics have been effective in communicating ideas and providing real examples to our participants – almost feel like a soundboard for teachers’ reflection and for our courses conversation.

The researcher used this comic in the training session to discuss how to use the Iraqi Virtual Science Library resources.



Fig:1



Fig:2: using Comics to explain how to use the Boolean Search in Iraqi Virtual Science Library(IVSL) during training courses



Fig:3: explain the results of using (Boolean search using comics



Figure 4: show a Comparison of training courses in which the presentation was presented in traditional teaching and using comics.

## Results

The researcher tried to recorded the lecture by (Engineer Bilal) to register the impression of all participant as (experimental study)..

The" researcher" came out with a set of results that serve the result of the" research" positively

Description	Traditional teaching	Teaching with Comics
Impression	Good	very good
Participant attention	Good	Excellent
Communication with lecture	Moderate	Standard
Participant questions	Continuous	Less
Entropy	Available	No
boredom	Available	No
Information Value	good	Excellent
Evaluation of participants to the lecture	good	Excellent

## Conclusion

The "researcher" use of comics informed methods in teaching offers alterative way of knowledge artful representation articulating the complexity of teacher practices by demonstrating the potential of Comics illustrate particular insights in the study of education.

The "researcher" experience with the pedagogical assemblage construction by sharing ideas of teachers' professional development in way that playful.

Through the research methods, the "researcher" have witnessed the potential of comics and animation to promote and strengthen teachers methods during lectures.

1. Produce and enter more educational Comics, animation and Cartoon movies in training courses lectures to activate the lectures.
2. The usage of comics to solve some educational problems:
  - a. To reduce the Fuzzy questions of the participants.
  - b. To keep “maintain” the balance of the lecture.
  - c. To ensure that when the lecture is repeated, participants will receive the same information on the same topic.
3. Preparation of an integrated program throughout the year that includes a series of qualifying training courses in writing the script for Comics and Animation. It is prepared by the Center for Continuing Education and Development. It is implemented in cooperation with the teachers and technicians in the Faculty of Arts and Information and the Children's Culture House to train students and prepare them for producing specialized films in education.
4. Supporting lectures in animation and comics, especially lectures based on scientific experiments.

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***The Development of Teachers' Skills of Buddhist Instruction for Schools  
Affiliated with the Nakhon Nayok Primary Educational Service Area Office under  
the Royal Project***

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The Asian Conference on Education 2017  
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**Abstract**

The purposes of this research were to study the problems of teaching in schools affiliated with Nakhon Nayok Primary Educational Service Area Office under the Royal Project of Her Royal Highness Princess Sirindhon, to develop teaching skills based on Buddhist Instruction Model, and to survey teachers' and students' satisfaction toward teaching based on Buddhist Instruction Model. The target group consisted of 221 teachers teaching in the academic year 2014 at 20 schools affiliated with Nakhon Nayok Primary Educational Service Area Office under the Royal Project of Her Royal Highness Princess Sirindhon. The participating teachers in the study were chosen by purposive sampling. The instrument of the research was comprised of lesson plans based on Buddhist Instruction Model, an evaluation form to evaluate teachers' teaching skills, a questionnaire on teachers' satisfaction, and a questionnaire on students' satisfaction toward Buddhist Instruction Model. The data were quantitatively analyzed applying the statistical tools of average and standard deviation, and they were qualitatively studied by observing behaviors. Findings revealed the following: First, the problems of teaching in these 20 schools were found in three aspects which were inefficient teaching activities, lack of knowledge in using teaching aids: media, innovation and technology in teaching, and lack of inclusive measurement and evaluation. Second, the experts rated the development of teaching based on Buddhist Instruction Model the most appropriate at the highest ranking ( $\bar{X}=5.00$ ). Third, teachers' satisfaction toward the development after the implementation of Buddhist Instruction Model was at high level ( $\bar{X}=3.55$ ), higher than before the implementation which was at the average level ( $\bar{X}=2.59$ ). Fourth, students' satisfaction toward teachers' teaching skills based on Buddhist Instruction Model was at high level.

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## Rationale

While accompanying His Majesty the King and Her Majesty the Queen to visit their citizens in the remote areas throughout Thailand during her childhood, Her Royal Highness Princess Sirindhon saw the way of living of these people and realized that they had a lot of problems such as poverty, lack of food and other basic needs, lack of services in public health, and education. Since then Her Royal Highness Princess has made a strong determination to help her people. She started her developmental project in A.D. 1980, initiating agricultural project for lunch in three border patrol police schools so as to solve the problems of lacking food and to improve children's health and nutrition in the rural areas. After that, the project was expanded in other aspects and in larger areas to improve citizens' good quality of life. Her Royal Highness Princess Sirindhon established the Office of Her Royal Highness Princess Sirindhon to join with other organizations to take charge in administering the Royal Project.

This developmental project was initially implemented in schools. If there was no school in any rural area, Her Royal Highness Princess would set up a learning center or a community school to do activities so as to improve the quality of life of people through the process of education. After the development expanded to the community, the project would be carried out with the following rules. (1) To be self-reliant emphasizing that everyone has to help themselves before asking help from others. (2) To have participation focusing on those people who receive benefits from the project taking part in thinking, planning, and doing. This helps those involved feel that they are the owners who learn and understand what they are doing. (3) To go through the whole process of learning and development emphasizing development in all aspects together. (4) To develop coordinating and cooperating system from all parties. (5) To equip teachers and workers with knowledge and skills so that they are efficient to perform their task through training, attending workshops and seminars, having study visits so they can exchange ideas, and apply what they learn for implementation. (6) To conserve environment and maintain regional culture and tradition.

The administration of the Royal Project of Her Royal highness Princess Sirindhon is under the responsibility of Border Patrol Police Bureau involving 183 border patrol schools in 38 provinces throughout Thailand, 178 elementary schools in 22 provinces under the Office of the National Primary Education Commission, the learning center of Chao Thai Pukhao Community "Mae Fah Luang" and 266 community learning centers under the Department of Non-Formal Education, 15 private schools for Islamic religion under the Office of Private Education Commission, 30 child development centers in the provinces of Sakon Nakhon, Nan, and Tak, 7 schools under Local Government Promotion Department, 39 Tripitaka schools of General Education Division in the provinces of Nan, Phrae, and Chiangrai under National Buddhism Office, and 27 schools in Bangkok Metropolitan Area. Conclusively, the administration of the Royal Project covers 745 schools throughout Thailand. (Information of Academic Year 2009)

Now, many more schools under the Royal Project are well-established. Nevertheless, teachers in these schools still lack skills in teaching. Some of them are not qualified because the schools aim their teachers to be equipped with good knowledge and good morals. On the parts of learners, students are not mature in manner and conduct to lead their lives properly. They need to develop stable mind and wisdom to become a

good man. However, some schools do not instill much moral and ethic to the students and there is also lack of qualified teachers to integrate knowledge and skills in their teaching. Therefore, some schools affiliated with Nakhon Nayok Primary Educational Service Area failed to meet the targeted aim in the instruction.

From the above-mentioned problems, the Buddhist Instruction Model will be proposed to increase teachers' skills in their teaching. The teachers can efficiently help students to learn and practice good conduct. Their mind and wisdom will be cultivated to be stable and wise. The Buddhist Instruction Model will enable teachers to direct their teaching to the principle of Dhamma. Students will be taught in good environment and friendly atmosphere which will facilitate their problem-solving skills. They will learn to seek their knowledge in a whole-process integration of learning through Trisikkha (Threefold Learning) involving the studies of morality, concentration and wisdom.

Five stages of instruction through Trisikkha are the following.

### **Stage 1 Confidence Development**

This stage prepares students to have confidence that what they are going to learn is beneficial and practical and that teachers are trained professionally to have good rapport to learners.

### **Stage 2 Virtue Development**

This stage involves both teachers and students to set agreement in the instruction. Students are divided into groups suited for activities and there is an arrangement for teaching aids, media and learning resources to facilitate learning.

### **Stage 3 Wisdom Development**

In this stage, students practice Buddhist way of thinking (Yonisomanasikara) through learning activities. They learn to seek and search for knowledge, do experiments, participate in group discussion, and make presentation after doing activities.

### **Stage 4 Improvement and Implementation**

In this stage, students adapt and improve their projects. They have discussions to apply knowledge and experience to solve problems in real life situations enabling them to make use of the project for their own and others' benefits.

### **Stage 5 Conclusion and Evaluation**

This stage encourages students to summarize what they have learned, evaluate and display projects, and exchange what they have learned about Buddhist principles through singing activities, task or project evaluation, doing exercises, taking tests, or collecting assigned tasks in portfolios. (Kittichai Suthasinobon. 2010: 65-69).

If teachers can write lesson plans and arrange activities as suggested in Buddhist Instruction Model, students will achieve the targeted goals. From the above-mentioned rationale, the researcher is interested in developing the teaching skills based on Buddhist Instruction Model for teachers in schools affiliated with Nakhon Nayok Primary Educational Service Area Office under the Royal Project of Her Royal Highness Princess Sirindhon so that teachers in these schools will have sustainable development enabling them to adapt and update themselves to the ever changing

environment. Then they can be the best resourceful teachers to strategically develop Thai people to live in the sustainable and learning society as announced in the Eleventh National Economic and Social Development Plan (A.D. 2012-2016)

### **Objectives of the Study**

1. To study the problems of teachers' teaching in schools affiliated with Nakhon Nayok Primary Educational Service Area Office under the Royal Project.
2. To develop the teaching skills based on Buddhist Instruction Model for teachers teaching in schools affiliated with Nakhon Nayok Primary Educational Service Area Office under the Royal Project.
3. To investigate teachers' satisfaction toward the teaching skills based on Buddhist Instruction Model.
4. To survey students' satisfaction toward the teaching skills based on Buddhist Instruction Model.

### **Research Procedure**

The researcher conducted this research in four stages based on Kemmis, and McTaggart's framework (Kemmis, and McTaggart, 1990: 53-90) as the following.

#### **Stage 1**

Reconnaissance. The researcher investigated and studied essential information to design the framework so as to develop the teaching skills based on Buddhist Instruction Model for teachers in schools affiliated with Nakhon Nayok Primary Educational Service Area Office under the Royal Project.

#### **Stage 2**

Planning. After stage 1, the researcher designed a drafted copy of Buddhist Instruction Model for teachers in these affiliated schools.

#### **Stage 3**

Acting and observing. The researcher conducted an experimental teaching using Buddhist Instruction Model through the stages of doing class activities, testing and evaluating, studying problems and obstacles, and assessing the efficiency of teaching based on Buddhist Instruction Model.

#### **Stage 4**

Reflection. The researcher evaluated all stages of experimental teaching to collect quantitative and qualitative data and made recommendations for the improvement of the deficiency. Then the researcher developed Buddhist instruction Model into a comprehensive version as a teaching model for teachers in the targeted schools.

## Research Result

Findings of the research showed the following.

1. There were problems found in three aspects: inefficient teaching activities, lack of knowledge and skills in using teaching aids: media, innovation and technology in teaching and inconclusive testing and evaluation.
2. The experts rated the development of teaching based on Buddhist Instruction Model at the highest level. The teaching based on Buddhist Instruction Model consisted of five stages: confidence development, virtue development, wisdom development, improvement and implementation, conclusion and evaluation.
3. Teachers' satisfaction toward the teaching skills after the implementation of Buddhist Instruction Model was at high level ( $\bar{X}= 3.55$ ), higher than their satisfaction before the implementation which was at the average level. ( $\bar{X}= 2.59$  )
4. Students' satisfaction toward teachers' teaching based on Buddhist Instruction Model was at high level.

## Summary of Research Result

The development of teaching skills based on Buddhist Instruction Model for teachers in school affiliated with Nakhon Nayok Primary Educational Service Area Office under the Royal Project can be summarized as the following.

### 1. Problems in teaching

1.1 In regard to teaching activities, it was found that teachers had problems following the sequence of instructional plans. Besides, they could not organize varied teaching activities for students, especially those which focusing on the thinking skills such as analyzing, synthesizing, creative thinking, etc. Furthermore, their teaching activities did not allow students to practice self-studying, data-collecting, and researching for new knowledge. Teachers also could not provide students with interesting learning atmosphere which would enable them to study enthusiastically and happily, nor could they arrange activities to develop students' potentials and desirable traits.

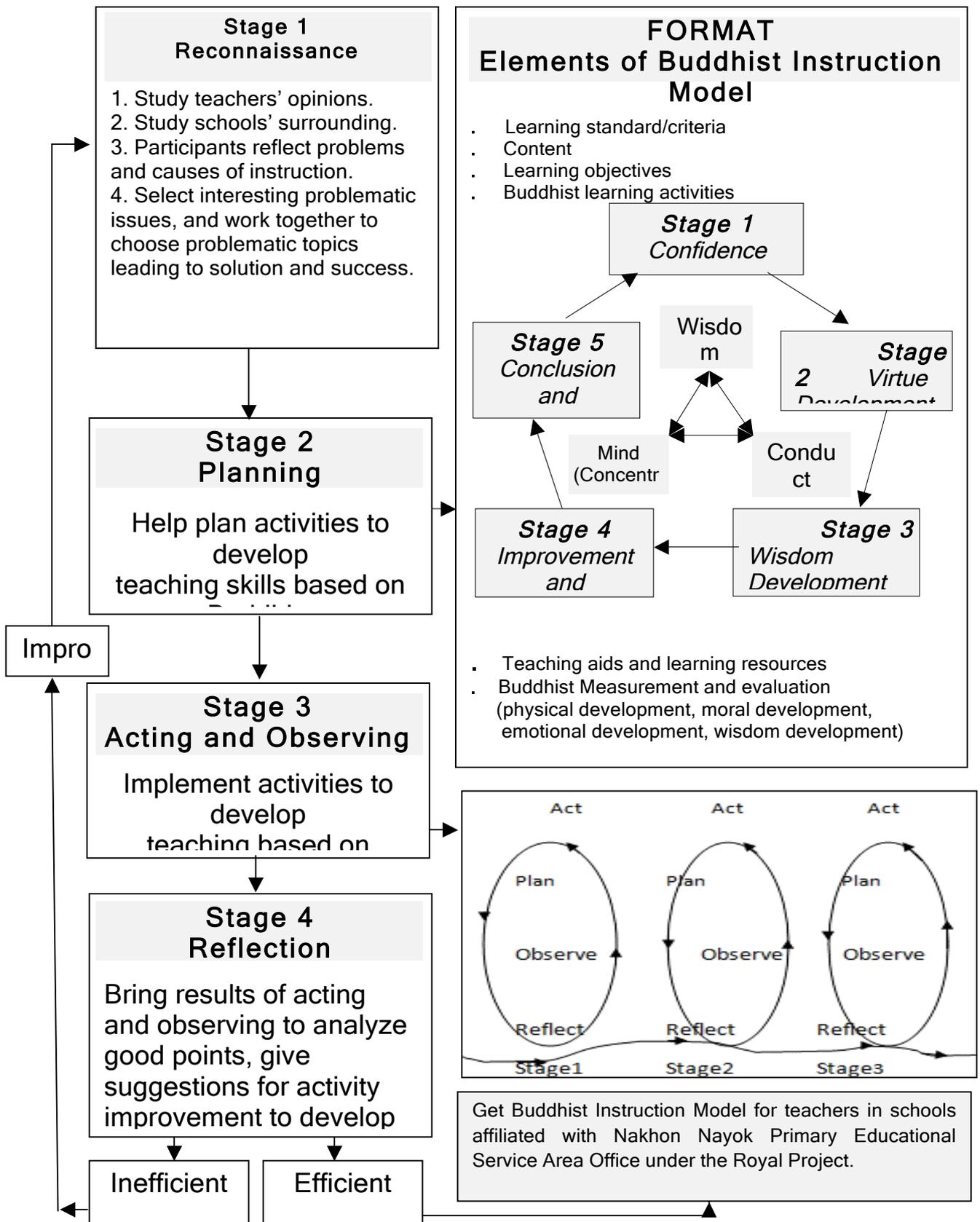
1.2 With regard to the use of teaching aids: media, innovation and technology, it was found that teachers did not realize the necessity of using teaching aids because they did not have knowledge or understand anything about them. Therefore, they could not use teaching aids to do instructional activities, nor could they produce teaching aids themselves. In addition, they did not know how to choose appropriate teaching aids to suit the objectives and content of the lessons. Furthermore, the teaching activities as suggested in the lesson plans did not provide sufficient innovative teaching materials and updated technology to meet the needs of instruction, and the teachers themselves could not develop teaching aids to suit and correspond to teaching activities.

1.3 Regarding testing and evaluation, it was found that teachers did not really know how to evaluate students' performance. Ways to test and evaluate students were not varied and did not correspond to standard, criteria, and learning activities. Learners had no parts in evaluating themselves, and there were no proper criteria to evaluate tasks and loads of teaching.



**Picture 1** shows the actively in schools affiliated with Nakhon Nayok Primary Educational Service Area Office under the Royal Project.

2. In regard to the development of teaching skills based on Buddhist Instruction Model for teachers in schools affiliated with Nakhon Nayok Primary Educational Service under the Royal Project of her Royal Highness Princess Sirindhon, the experts rated that this instruction model was the most appropriate. The development of the model is illustrated in Picture 2 as follows.



**Picture 2** shows the pattern/format of development of teaching skills based on Buddhist Instruction Model. From Picture 2, the details can be shown as the following.

(Kittichai Suthasinobon. 2012)

2.1 Learning standard is the requirement set for qualifications and desirable quality in education to be used as a benchmark for quality control, investigation, assessment, evaluation, and educational quality assurance

2.2 Indicator is the behavior required for what students must know and what they can do or perform. It is characteristics or permanent personal behavior.

2.3 Content includes concepts and principles sequentially arranged so that learners can learn continuously. These concepts are standardized and included for course content in each level of education.

2.4 Learning objectives are the parts that show the learning outcome of students who were taught through Buddhist Instruction Model. The measurable characteristics of students are having good conduct (morality), having stable mind (concentration), having good knowledge and good thinking as well as knowing how to manage the knowledge obtained (wisdom).

2.5 Content is the knowledge that students must learn and master.

2.6 Learning activities are teaching procedure that based on the teaching of Buddha encouraging students to seek knowledge, solve problems, or search for knowledge by themselves. Teachers provide friendly environment and learning atmosphere through Trisikkha that students have been trained in conducting their manners. They learn morality, concentration or mind development to have endurance in learning and enjoy the learning, and wisdom which comprises true knowledge enabling them to think and solve problems systematically (Yonisomanasikara). The procedure of learning consists of five stages as the following.

#### **Stage 1 Confidence development**

This stage involves teachers' preparation to build up students' confidence by convincing students that what they are learning will be beneficial to themselves and others. Examples of learning activities are praying to concentrate, doing meditation, talking and making inquiries, discussing and asking questions.

#### **Stage 2 Virtue development**

This stage involves teachers and students participating in discussion and setting agreement in learning. Students are divided in groups to suit the content of the lessons and activities. Teachers prepare teaching aids, media and learning resources appropriate for learners in the twenty-first century.

#### **Stage 3 Wisdom development**

In this stage, students do activities using Buddhist ways of thinking (Yonisomanasikara) in studying. They seek knowledge, do experiments, search for information, solve problems through The Four Noble Truths using team teaching and team learning, fieldwork, data collection, data recording, discussion, and presentation.

#### **Stage 4 Improvement and Implementation**

In this stage, students improve their projects aiming for good quality. They also inform how to apply knowledge and experience they have learned to solve problems in real life situation, or they will do more projects.

### Stage 5 Conclusion and Evaluation

Students summarize what they have learned, evaluate, present their projects, and exchange what they have learned to relate with religious principles through the activities of singing, evaluating tasks, doing exercises, taking tests, or collecting tasks into portfolio.

2.8 Teaching aids and learning resources are materials, instruments, and methods used to help develop and improve teaching such as learning resources, textbooks, websites, readymade lessons, or e-books, etc.

2.9 Measurement and evaluation are done in 4 aspects: observing learning behavior (physical development), testing social skills (moral development), testing emotional behavior (emotional development), and measuring the achievement of learning (wisdom development).

2.10 Teachers recorded their teaching performance to see whether they met the targeted goal or not. Then they consider what has to be done to improve their teaching, and give recommendations for the next teaching.

2.11 Recommendations are part of the instruction that teachers record, take notes, and observe while they are teaching. After their teaching, teachers make comments, give limitations and recommendations so that they can efficiently improve their teaching for future instruction.

3. The study on teachers' satisfaction toward the development of the teaching skills based on Buddhist Instruction Model revealed that teachers' satisfaction was at the average level ( $\bar{X}= 2.59$ ) before the instruction, and their satisfaction was higher after the instruction ( $\bar{X}= 3.55$ ).

4. Students' satisfaction toward the teaching based on Buddhist Instruction Model was at high level.

### Discussion

In conducting the research study on the development of teaching skills based on Buddhist Instruction Model for teachers in schools affiliated with Nakhon Nayok Primary Educational Service Area Office under the Royal Project, the researcher found that the results of the study yielded interesting points worthy for discussion as the following.

1. The teaching skills based on Buddhist Instruction Model comprised the characteristics to enhance students' learning behavior, so they learned efficiently. The experts evaluated that Buddhist Instruction Model was efficient and standardized, and it was rated at the average score of 5.00 which was considered very appropriate. The success of this teaching model might result from its unique characteristic of integrating the teaching skills based on Buddhist educational philosophy which students have already known the essence of what they learn. They are confident that they can apply the knowledge to use in their daily lives. Buddhist Instruction Model has built up knowledge and combined new experiences necessary for life corresponding to the needs and real life situation by integrating Buddhist principles

and sufficiency economy philosophy, all of which are the whole process and well-rounded development to mold each student to become a perfect man. Students were also taught and trained to have good conduct (morality), have strong mind determined to study (concentration), and use wisdom to solve problems appropriately (wisdom) through the teaching and learning process based on Buddhism (Trisikkha). All components of the teaching skills based on Buddhist Instruction Model are efficient and can really be used to develop students' learning effectively.

2. The study on teachers' satisfaction toward the development of teaching skills based on Buddhist Instruction Model showed that Buddhist Instruction Model is a teaching process that teachers arrange to set conditions and prepare situations for students to learn and change behaviors required of them. Teachers help students to get knowledge, skills, values, ways of thinking and express themselves so that they can learn to reach the goal easily and efficiently. All of these will result in good development in learning behaviors, have good social skills, have satisfaction with learning and are enthusiastic to learn. Actually, there was a survey to investigate teachers' satisfaction toward the development of their teaching skills, and findings showed that after applying Buddhist Instruction Model to their teaching, the development was higher than before the experiment both in total teaching process and in each behavior. The higher satisfaction might result from the fact that the teaching skills based on Buddhist Instruction Model was distinctive. The learning process was based on Trisikka (the Threefold Learning) Principle through five stages of learning as follows: Stage 1: Confidence Development, Stage 2: Virtues Development, Stage 3: Wisdom Development, Stage 4: Improvement and Implementation, Stage 5: Conclusion and Evaluation. All these five stages bring in concepts, frameworks and principles based on Buddhism to integrate with other universal principles such as Piaget's learning from concrete objects to abstract. (Carin, 1997: 38-40 Cited in Piaget, 1965) and Bruner's learning through discovery. (Bruner, 1960:33) It has been mentioned that teaching teachers to learn and really understand, one has to use a proper approach and a good method of teaching. Teachers must arrange suitable learning experiences to match students' abilities, design the content of the lesson in sequential relationship aiming for students to discover themselves, enable participating teachers to retain the knowledge that they have learned so that they can link knowledge to learning. This corresponds to Vygotsky's Constructivism Theory (Nicholl, 1998; cited in Vygotsky) stating that the developer must value the importance of interaction as a tool for mental development by emphasizing the development of potential ability beyond now. These procedures can improve participating teachers to develop their teaching skills efficiently. (Kittichai Suthasinobon, 2010).

3. The study on students' satisfaction toward the development of teaching skills based on Buddhist Instruction Model was conducted through a questionnaire. Students were asked to give their opinions on three items. Item 1 was about the appropriateness of teaching activities. Findings showed that students rated this item at high level in four aspects: ordering activities, setting activities from easy level to difficult level, limiting the amount of in-class activities, setting good length of time for activities. Item 2 was about appropriateness of teaching process. The results revealed that the students rated 5 aspects at high level as follows: a preview of a lesson, order of teaching process in good match with content and time, use of varied teaching aids and learning resources, different ways of evaluation using observation, questioning, testing, project evaluation

and marking homework. Besides, some useful recommendations were given to develop students' projects. It was found that students rated the teaching very high in two aspects: teachers' explanations and examples enabled the students to understand the lessons very well, and students were given opportunities to participate in doing activities. Item 3 was about the benefits that students obtained from Buddhist Instruction Model. Students expressed their opinions and rated these four aspects at high level: students are enhanced to work and get along well with other people, students could explain their own learning process, students got experience from hand-on training and practice, students had good physical, emotional, social and wisdom development while learning. The reason students felt good in learning was that teachers acted as their role model. Teachers' good conduct was better than words of teaching, so good rapport between teachers and students was important for learning. Studying with teachers who have good conduct, knowledge, and stable mind, students could absorb mercy, kindness and good will from teachers and they could further extend kindness and good will to others. This belief agreed with Phra Promkunaporn (P.A. Payutto, 2004) who stated that teachers who knew the principles and strategy of good teaching would teach students to be a perfect man. This belief corresponded with Phra Buddhataaspikku (1992) who believed that if teachers did their teaching based on Buddhist ways comprising three parts: teaching so that students can understand, doing to convince students to have confidence and giving examples of happiness as witness. This will motivate students to learn and lead them to success. Thus, teachers can act as a role model by acting or doing as example, living to give evidence, leading lives with good morals, all of which are factors to enhance students to see the worthiness of living in good morals. Therefore, students will have faith and confidence in teachers. This will enable students to be obedient and non-aggressive. Good teachers encourage students to learn. When they give clear explanation, arrange different learning activities, students will learn quickly and happily. Consequently, teachers are very important in the teaching skills based on Buddhist Instruction Model.

4. Regarding other issues, Buddhist Instruction Model was designed by analyzing the link between integrated teaching based on Buddhism and the Sufficiency Economy Philosophy by the researcher. Findings revealed that the teaching process included a combination of concepts, frameworks especially the system to develop students to become a perfect man in Buddhism which is called Trisikkha, and the way of leading life following the principle of Sufficiency Economy Philosophy granted by His Majesty the King for Thai people. All concepts are well combined in unity. For example, the concept of morality is correspondent to three linking circles: sufficiency, logic, and self-immunization or self-independence of sufficiency economy philosophy. In regard with concentration, it is well-correspondent to conditions of knowledge. For example, when Sufficiency Economy Philosophy granted by His Majesty the King is applied in teaching, there will be a perfect integration resulting in efficient teaching required of all citizens to be ready for changes in the new society. Students are well-prepared and get ready to lead their lives happily in the present context of Thai society and they can sustain Thai identity in the future as well.

## **Suggestions**

### **1. Suggestions for Applications**

1.1 This research study can be used as guidelines to develop learning activities. It might be set as a policy applying innovation in teaching morality to students and young learners through the teaching skills based on Buddhist Instruction Model. Some proper adjustment can be made to disseminate and promote d education of our nation to a proactive and progressive position.

1.2 The limitation of the teaching skills based on Buddhist Instruction Model depends on the faith that learners have toward the virtues of religion applied to teaching. A manual with examples of good teaching plans should be provided for those interested in using the model so that they can understand the teaching process clearly and can do the teaching efficiently.

1.3 More teachers should be trained to develop their teaching skills based on Buddhist Instruction Model. Teachers should be aware of the importance of education which apply principles of religion to teaching and learning. They should also take part in managing and developing education correctly and thoroughly as well as making use of innovation to develop teaching to suit the culture of the nation for future teachers of our country.

1.4 To build up confidence for teachers in developing their teaching skills, we or those who are responsible should train teachers in a friendly and sincere manner and in a friendly atmosphere so that they can participate in managing teaching based on Buddhist Instruction Model effectively.

### **2. Suggestions for Further Studies**

2.1 There should be a study conducted to integrate the teaching skills based on Buddhist Instruction Model and the teaching skills based on Sufficiently Economy Philosophy. The integrated teaching skills of these two frameworks should be administered to regular schools in Thailand, countries in ASEAN community and global population for sustainability.

2.2 There should be a study to investigate the opinions and needs of teachers, administrators, parents and students in developing teaching skills under the Royal Project.

2.3 Research should be conducted on developing and participating process in teaching under the Royal Project in the dimension of education of the twenty-first century working together with external offices of government and private sectors.

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***A Comparison of Political Movements in Thailand from 2005–2013: Case Study on People’s Alliance for Democracy (PAD), the People’s Democratic Reform Committee (PDRC), and United Front for Democracy against Dictatorship (UDD)***

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**Abstract**

This paper analyzed on three political movements in Thailand since 2005 – 2013 between the People’s Alliance for Democracy (PAD), the People’s Democratic Reform Committee (PDRC), and United Front for Democracy against Dictatorship (UDD). Thus, it founded that there are both similarities and differences in Thailand’s political movements. Similarities which can be seen from demonstrations include the fact that demonstrators normally rally in downtown Bangkok, occupy public buildings, use social media to communicate, exchange information and mobilize people and aim for democracy. On the other hand, there are some differences in detail such as ideology, strategy, people to join, aims and goals to their achievement.

Keywords: Political Movements, Thailand, People’s Alliance for Democracy (PAD), the People’s Democratic Reform Committee (PDRC), United Front for Democracy against Dictatorship (UDD)

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## **Introduction**

This paper compares three political movements occurred in Thailand since 2005 to 2013. Social media were used during the three political movements to mobilize people to come out on the streets pursuing their goals and propose. The political movements' scenario began with the People's Alliance for Democracy (PAD), the United Front for Democracy against Dictatorship (UDD) and the People's Democratic Reform Committee (PDRC) respectively. The discussion on mentioned political movement covers background, timeline events, and political movement process in terms of how they are organized, generated, mobilized and reacted.

## **The People's Alliance for Democracy (PAD)**

The People's Alliance for Democracy (PAD), which is also called the National Liberation Alliance, the National Liberation Party or the yellow shirts, is originally a coalition of protesters against Mr. Thaksin Shinawatra, the former prime minister of Thailand. The PAD has its source in weekly political talk show by Sondhi Limthongkul named "Muang Thai Rai Sapda" (Thailand Weekly). The PAD started rally against Thai Prime Minister Thaksin Shinawatra and his administration at the Royal Plaza and ended peacefully after midnight Saturday. The demonstrators set Feb. 26 as the day for their next gathering. This was the first PAD action in public space which was joined by people urging government to accept their demands.

## **The People's Alliance for Democracy (PAD) Aims and Goals**

The PAD aims to get rid of corruptions. Thaksin Shinawatra, the billionaire and civilian dictator has left Thailand with extensively high level of corruptions and proxy politicians. Having cheated the country while being in power, Mr. Shinawatra hid his corrupt billions of dollars' worth of assets overseas. When he was ousted, Mr. Shinawatra was subjected to numerous convictions. He, however, cowardly avoided imprisonment by fleeing overseas and pulled strings on politicians to sabotage his homeland. The PAD protects the monarchy. Thaksin Shinawatra desires to launder himself by amending the laws to favor him and his proxy politicians. He is trying to abolish the monarchy and make himself a president by arousing turmoil and changing Thailand from being a "Kingdom" to a "Republic" instead. As a permanent cure for Thailand, the PAD intends to establish real democracy for Thailand. At present, it is not genuine democracy with bad on-sale politicians. To achieve all above, 1-3, we have to get rid of Thaksin Shinawatra and his proxy politicians and punish them according to the laws.

## **The People's Alliance for Democracy (PAD) Members and Support Group**

The PAD members are initially consisted of middle and upper-class residents of Bangkok and Southerners and supported by the conservative elite, factions of the Thai Army, and state-enterprise labor unions. These include prominent socialites and some little-known minor members of the Thai royal family. The PAD's support base has expanded to include civil servants, state enterprise labor unions, the urban middle-class of other cities

and conservative Buddhist groups. Supporting Buddhist groups include the Santi Asoke sect and their “Dharma Army” (led by Thaksin Shinawatra’s former mentor Chamlong Srimuang). Moreover, General Pathompong Kesornsuk, a close aid of Privy Council President Prem Tinsulanonda, appeared in full uniform at the PAD protests and urged his fellow soldiers to follow suit. As Bouckaert (2011) mentioned in early 2006 that growing discontent among many social sectors including intellectuals, NGOs, business elites, the upper-middle class, civil servants, employees of state-owned enterprises and opposition political parties, particularly the Democrat Party which could not compete with Mr. Shinawatra geographically nor financially, had coalesced into an organized protest movement.

### **The People’s Alliance for Democracy (PAD) Mobilization and Reaction**

The PAD is supported by Sondhi Limthongkul, the founder of Manager Media Group and the affiliated companies of Manager Daily newspaper and the ASTV satellite television channel. Sondhi took his anti-Thaksin talk show on the road broadcasting via satellite through his NEWS1 ASTV channel based out of Hong Kong and webcasting via the website of his Manager Daily newspaper. Talk show sites, including Sanam Luang and the King Rama V equestrian statue, became magnets for the PAD crowds.

In terms of people mobilization, the PAD has allied webpages and Facebook pages which are used as a communicating tool to gather people. Paireepairit (2012) points out that when Manager Group started rallying against Thaksin Shinawatra, Manager.co.th became the best online source for political news, especially for the anti-Thaksin camp. Once Muang Thai Rai Supdah was dropped from TV, Sondhi continued his show at a public park in Bangkok and broadcasted livestream versions of the show through Manager.co.th. The program was later on broadcasted via satellite TV station, ASTV. Manager Group utilized multi-medium media strategy effectively. Viewers who missed live events could watch archived clips online with full transcription within hours. Most articles on Manager.co.th were opened for discussion via a commenting system which has created a vibrant community among online politics followers.

The source of concerns by the opposition is from both government and anti-PAD groups. People daily (2006) reported that the organizer of the rally failed to meet the legal requirement and was fined by metropolitan police for disturbing other people’s rights by using loud speakers and causing traffic problems when staging the demonstration. “The law is to be enforced now compromisingly after last Saturday’s rally caused traffic congestion and disturbing noises in the area,” Government Spokesman Surapong Suebwonglee was quoted by the Thai News Agency as saying after the demonstration began in late afternoon.

On the other hand, the UDD supporters have been opposing the PAD since the 2006 coup accusing the PAD of supporting the coup. Since then, clashes between supporters of the two groups have taken place from time to time. One example can be demonstrated by the clash in Udorn Thani in July 2008 where the red-shirt UDD supporters attacked the PAD

rally injuring several PAD supporters. Moreover, the PAD meeting in Chiangmai, the bastion of Thaksin Shinawatra, was also disturbed.

### **The United Front for Democracy against Dictatorship (UDD)**

According to Thai Red Shirt website (<http://thairedshirts.org>), the United Front for Democracy against Dictatorship (UDD), also known as the red shirts, is the biggest pro-democracy movement in Thailand's history. Red Shirts are social activists who believe that the people of Thailand deserve a political and judicial system that ensures their universal human rights and justice. Most red shirts are ordinary working-class Thais. They include unregistered laborers, farmers, the poor and those who are not qualified for any kind of welfare or pension. Red shirts also include employees in industries and other services such as restaurant and hotel. While it is difficult to give an exact total number of Red shirts, there are almost certainly in their millions, and their supporters are in their tens of millions.

The Red shirts roots are in the various groups who protest against the military coup in 2006, such as the Federation for Democracy back in 1992, the Saturday Voice against Dictatorship, 19th September Group, PTV Group and Ex-Thai Rak Thai members. These groups protest against the military coup of 19 September 2006 and have gradually grown from small gatherings to large protests. The Red color was first adopted in 2007 as a symbol against the 2007 constitution drafted by the 2006 coup makers.

According to Wikipedia (2014), the first name of UDD is "Democratic Alliance Against Dictatorship" (DAAD), and it was later on changed to "United Front for Democracy Against Dictatorship" (UDD). The UDD was first formed in 2006 to oppose the military government and the military coup, which overthrew Thaksin five weeks before the scheduled elections. UDD organized anti-government rallies during the military government's rule in 2006–2007 and opposed the military's 2007 constitution. UDD website points out that the Democrat Party represents Thailand's conservative forces who seek to hold power over the country both within and outside of the system and with no mandate from the people. These conservative forces rely on various stale apparatus such as the army, judges, appointed senators and independent organizations which were, in fact, appointed by military coup maker. The red shirts have struggled against all these elements in order to return power to the people and nullify the effects of the 2006 coup.

### **The United Front for Democracy against Dictatorship (UDD) Aims and Goals**

According to the website of the red shirts or the UDD, the group has six objectives to achieve which are: To attain true democracy and to ensure that sovereignty is truly in the hands of the people of Thailand with the King as the head of state; To unify grassroots masses as the main social and cultural force together with people from every sector who seek democracy and justice and to resist "aristocratic" forces that obstruct equitable and democratic national development; To promote non-violence as the modus operandi for all activities; To fight against poverty by tying economic policies on poverty reduction through political strategies which stress that economic policy must be directly formulated

by an elected government; To reinstate the “Rule of Law” through ensuring equitable and transparent judicial process for all, along with putting an end to the “double standards” policies which are currently under control by aristocratic interests and elite networks; To revoke the 2007 Constitution and its unjust laws that favor certain military and elite interest and to draw up a new democratic Constitution.

### **The United Front for Democracy against Dictatorship (UDD) Members and Support Group**

As Thabchumpon and Maccargo (2011) points out, the UDD has gathered people with a wide range of backgrounds, ranging from former communists to liberals and rightist hardliners. The lack of clear lines of command and accountability among the various core leaders of the UDD undermines the effectiveness of the movement. Overall, the red-shirt movement represents an extremely pragmatic alliance among groups ranging from idealistic post-leftists to others of a rather thuggish disposition, and the elements from the two sides that had fought one another in the 1970s were now collaborating. Moreover, Paireepairit (2012) gives some examples on red-shirt social media after the military coup which are collected from 19Sep.net, Saturdayvoice.com, Thai Free News and Thai E-news. Those are notable forums used by anti-coup and Thaksin Shinawatra supporters. The red-shirt website also provides links to their alliances, for example, 2 Bangkok.com, Asia Provocateur, BlogSpot, Chicago Red Shirts For Democracy (illinoisredshirts.blogspot.com), RED IN USA (redusala.blogspot.com), Robert Amsterdam Thailand, UDD Red, and UDD TODAY.

### **The United Front for Democracy against Dictatorship (UDD) Mobilization and Reaction**

According to Thabchumpon and Mccargo (2011), it is shown that without denying the agency of the protesters themselves, it is also important to recognize that the red shirts are highly susceptible to politicization and mobilization by community leaders who are often linked to pro-Thaksin politicians. The red shirt movement is a loosely structured network organization rather than a hierarchical one. Members expand the network by reaching out to friends, relatives, and people in their own villages and communities. Red shirt groups communicate through community radio stations, the distribution of CDs and hard-copy newsletters which are reproduced locally as color photocopies. The networks are organized in the way that the demonstration outside a provincial hall could be held within half an hour notice.

Before the daybreak of September 2, 2008, the UDD supporters rallied to Sanamluang and decided to attack the PAD demonstrators who were gathering at the Makkhawan Rangan Bridge on Ratchadamnoen Klang Avenue. The ensuing clash left several injured on both sides with one dead on UDD side resulting in a weak state of emergency in Bangkok. The military was called to secure the situation but not to disperse the demonstrators. The UDD was then seen by the public as the main adversary of the PAD, the red and yellow rivalry has become significantly evident.

### **The People's Democratic Reform Committee (PDRC)**

As Wikipedia (2014) puts it, The group was formed on 29 November 2013 by protest leader and former Democrat Party MP Suthep Thaugsuban, who appointed himself as secretary-general. The movement was supported by various organisations including the Democrat Party, the People's Alliance for Democracy (a coalition of opposition to Thaksin), student activist groups, state workers unions and pro-military groups. The PDRC's support stemmed mostly from affluent Bangkokians and Southerners. Whistle-blowing was a central symbol of the protests.

Moreover, according to Agence France Presse (2013), anti-government protesters returned to the streets of Bangkok on Thursday as Parliament were debating the amnesty bill which the opponents believed that it would “whitewash” past abuses and allow ousted prime minister to return. Critics of the controversial legislation say it could unleash a fresh bout of political turmoil in a country rocked by a series of rival demonstrations since royalist generals toppled Thaksin in 2006. The opposition, Democrat Party, called for a mass rally against the planned amnesty outside a railway station in Bangkok on Thursday evening, thousands were predicted to attend.

By late afternoon, hundreds of people had already gathered at the site. Some were wearing bandanas reading “Fight” and waving clappers with the slogan “Stop the amnesty for corrupt people.” The ruling Puea Thai Party of Prime Minister Yingluck Shinawatra ordered all its lawmakers to support the bill which would cover crimes related to political unrest since 2004. While a vote was expected to take place in the next few days, the demonstration was still in unrest.

### **The People's Democratic Reform Committee (PDRC) Aims and Goals**

Protests in recent years are seen to take place as to achieve two main political goals. The first one is working toward the rejection of an amnesty bill. According to the Guardian's report (2013), Thailand's Senate convened a highly charged session to determine the fate of an amnesty bill, which could pave the way for the return of the self-exiled former leader, Thaksin Shinawatra. Thousands of protesters rallied across Bangkok, raising concerns of renewed political violence after three years of relative calm. Nearly 7,000 police officers were deployed around the parliament, near the main protest site.

Consequently, Bangkok Post (2013) reported that senators have rejected the blanket amnesty bill in a bid to defuse political and social tensions. Anti-amnesty bill demonstrators march from Asok intersection to converge with another protest group from the Silom area at the Royal Thai Police Headquarters near Ratchaprasong and headed to Ratchadamnoen Avenue altogether. After 12 hours of debate, the senators shot down the controversial bill by 140 votes to 0.

After the rejection of an amnesty bill, the protest had shifted their aim and goal to Yingluck Shinawatra's resignation and political reform. Burma News (2013) reported that the Thai people at the moment stood resolute in their goal of creating a better,

brighter future for future generations. To attain these goals, reformation before the next bout of elections was necessary. Laws must be fair and just, corruption must be abolished and electoral fraud and vote buying leading to endless vicious cycles of graft must be uprooted. However, the illegitimate government under Yingluck Shinawatra which defiantly maintained its invalid claim to office was the main impediment to these reforms.

### **The People’s Democratic Reform Committee (PDRC) Members and Support Group**

According to Bangkok Post (2014), although the Centre for Maintaining Peace and Order (CMPO) had decided to postpone revealing the names of 136 firms and individuals said to be funding anti-government protests, a list of 32 alleged financial backers has been leaked to the media. The reports identified 19 companies and 13 individuals who were allegedly funding People’s Democratic Reform Committee (PDRC) protests.

Post Today newspaper named the 19 companies as Saha Pathanapibul Plc, Gaysorn Plaza, Siam Paragon Department Store, King Power Group, Dusit Thani Hotel, Siam Intercontinental Hotel, Riverside Hotel, Mitr Phol Group, Wangkanai Group, Boon Rawd Brewery Co, Thai Beverage Plc, Yakult (Thailand) Co, Neptune Co, Thai Namthip Co, Muang Thai Life Assurance Co, Hello Bangkok Co and Metro Machinery Group. The 13 individuals were identified as Chumpol Suksai, Chalerm Yoovidhya, Pramon Suthiwong, Khunying Kallaya, Nuanphan Lamsam, Wimolphon Pitathawatcha, Dr Pichet Wiriyachitra, Taya Teepsuwan, Sakchai Guy, Krisana Mutitanant, Police General Kitti Rattanachaya, Chitpas Kridakorn and Issara Vongkusolkit.

However, PDRC secretary general, Suthep Thaugsuban, told supporters that none of the people on the list, except Sakchai Guy, had provided financial support to his political movement. Mr. Thaugsuban said Mr. Guy’s donation to PDRC was from T-shirts selling. Similarly, many companies and individuals who were named to support PDRC denied that they did not support PDRC. For example, Saha Pathanapibul chief executive officer, Boonchai Chokwatana, denied that he helped funding the anti-government movement, and Mr. Pramon, chairman of Toyota (Thailand), also denied any financial involvement with the PDRC. Moreover, Bangkok Post (2013) reported that former leader of the People’s Alliance for Democracy, Sondhi Limthongkul, was to join the rallies for the first time by starting a march from Ban Phra Arthit. Therefore, the yellow shirt group was to join PDRC to the massive rally against Yingluck Shinawatra’s government.

### **The People’s Democratic Reform Committee (PDRC) Mobilization and Reaction**

According to RT.com (2014), thousands of anti-government protesters marched through the streets of Bangkok to mobilize support for their campaign of shutting down the Thai capital on January 13 in their bid to topple Prime Minister Yingluck Shinawatra’s government. The march was the second in a series of marches planned to rally support for their goal. The protesters also claimed that early elections cannot be held until reforms had taken place. The Anti-government protesters began the “occupation” of Bangkok and the campaign called “shutdown Bangkok” by blocking major road intersections in the

center of the city. According to Asia Foundation survey report (2013), 98% of respondents participated in the PDRC organized Bangkok Shutdown campaign in an independent personal capacity, and 99% of respondents were reported that they made their own way to the demonstration sites and used the Internet, smart phones or social media to involve with the events.

According to Jakarta Post (2014) analysis, the People's Democratic Reform Committee (PDRC) has been extensively using social media to inform, invite and connect with supporters and the public. They are active in posting information, news and updates many times a day. They do this via facebook.com/PDRCThailand and Twitter at @CMDThai. The PRDC's Facebook page had 27,040 people talking about it and nearly 19,000 "friends" who liked it.

The PDRC's action is responded by two main groups namely the UDD, or the red shirts, and the caretaker government led by Yingluck Shinawatra. Both groups are against PDRC movements. Since PDRC seized of government buildings and public streets, the government considered the action to be threatening to the country, it thus declared a state of emergency. Consequently, the Centre for Maintaining Peace and Order (CMPO) was set up for dispersing the protesters.

Furthermore, The Nation (2014) reported that, on January 17, 2014, many red-shirt supporters arrived on motorcycles and in vans to challenge the anti-government protesters near the Chaeng Wattana rally site. Tension rose at the site at 11am when the red shirts arrived together with a sound truck. They announced through the public address system that that the rally at Chaeng Wattana was causing hardship to passenger van operators and local residents. Thai PBS (2014) also reported an attack in other areas. While the leader of anti-government groups were trying to campaign for the local people to support national reform to take place before an election, the crowd were harassed by red-shirt followers in Muang District of Chiang Mai.

## **Conclusion**

According to the political movements in Thailand which have persisted since 2005, it is shown that Thai people have become increasingly involved and highly participated in both public space and cyber space. Many Facebook pages, websites and blogs have allowed Thai people to share their opinions and feelings about politics. These activities on the Internet are seen to be used by the Thais for mobilizing people on the street, rallying and occupying government building or main streets in the downtown of capital city. This chapter examines three main people factions who demonstrate and make an impact to Thai politics. These three groups of people have some similarities and differences in terms of aims, goals and political perception.

First of all, this paper compares each organization by focusing on social movements, political participation and democracy perception. In regard with the People's Alliance for Democracy (PAD), they started protest the government because of "policy corruption" in Thaksin Shinawatra's government and monarchy scandals. Similarly to the People's

Democratic Reform Committee (PDRC), they also started protest government because of “policy corruption”, especially rice pledging scheme and bad public policy in Yingluck Shinawatra’s government. In contrast with the United Front for Democracy against Dictatorship (UDD), they started protest because of military coup and the rejection of Abhisit Vejjajiva’s government which they believe that the government was set up by military coup.

Moreover, each faction has similar strategies to mobilize political movements. All of them rally on the street especially in downtown Bangkok. The United Front for Democracy against Dictatorship (UDD) occupied luxury malls and was seen to use more violence than the People’s Alliance for Democracy (PAD) and People’s Democratic Reform Committee (PDRC). The PDRC, nevertheless, occupied government offices, asked bureaucrats to join their movements and seized main intersections around downtown Bangkok.

Furthermore, People’s Alliance for Democracy (PAD) and People’s Democratic Reform Committee (PDRC) have similar goals and aims which are: (1) to protect monarchy, (2) to oppose corruption, (3) to reform political system and (4) to eliminate Thaksin regime. On the other hand, objectives of the United Front for Democracy against Dictatorship (UDD) are: (1) to create economic equitability, (2) to end aristocratic interests and elite networks, (3) to bring the ousted Thaksin Shinawatra back to Thailand and (4) to revoke the 2007 Constitution.

The People’s Alliance for Democracy (PAD), People’s Democratic Reform Committee (PDRC) and United Front for Democracy against Dictatorship (UDD) are all supported by different political parties. Both the PAD and the PDRC have Democrat Party to support their political movements. The PAD receives a partial support from the Democrat Party while the PDRC has a full support from the Democrat Party evidenced by the fact that its core leaders are former Democrat Party members. Similarly, the United Front for Democracy against Dictatorship (UDD) has also been fully supported by the Pheu Thai Party on their activities and movements.

The People’s Alliance for Democracy (PAD) and the People’s Democratic Reform Committee (PDRC) have similar strategies to mobilize people. Both of them use social media. The PDRC successfully use social media as a tool to mobilize people. It is evident that the PDRC has used Facebook more extensively than the PAD and the UDD have. Meanwhile, United Front for Democracy against Dictatorship (UDD) uses its own networks and use social media less than the two other groups. In addition, the majority people who join the People’s Alliance for Democracy (PAD) and People’s Democratic Reform Committee (PDRC) are middle-class people, especially from Bangkok and the south, while the glass roots, who are mainly from the north and northeastern regions, join the United Front for Democracy against Dictatorship (UDD).

In regard with the social movement aspect, all of them inevitably accept new social movement’s ideology. The NSMs has created the network linking movements of individual, community, and others. In this context, the PAD and the PDRC share some

similarities which are their organization and the people who support the movements and have common political ideology. When compare to the PAD and PDRC, the UDD's political ideology is more liberal, particularly in an economic aspect. Moreover, the UDD has a strong relations and network with political party as they are homogeneous, and they are thus definitely different from PAD and PDRC. Therefore, all of movements do not fit in the classic social movements which concern only class inequality. It can be concluded that these movements go beyond the classic and are shifted into a complexity of political ideology.

Apart from a new social movement ideology, each movement has similar and different political movement typology. Both the PAD and the PDRC are political movement groups while the UDD is a political interest group. The main reasons making the PAD and the PDRC political groups are they have common aims and goals, and they are not a solid organization unlike UDD. On the other hand, UDD is a political interest group because they focus on public policy rather than the other two, and they settle and expand their networks by reaching out to friends, relatives, and people in their own villages and communities rather than the PAD and the PDRC which rely on social media such as Facebook, Line and website.

In political participation aspect, all of political movements have been shifted from the past in Thai context. As Phongpaichit (2002) points out, the movements in Thailand include a wide variety of social groups. However, the significant fact about the Thai political movement that it is the large participation by the "little people" (marginal people) who have traditionally been excluded from a political voice. Therefore, ongoing political movements clearly indicate that the people are no longer "little people", instead, people from every class and every interest group in Thai society are all included. However, the majority who support each movement can be distinguished. The majority who support or join in PAD is the middle class, the UDD supporter's base are among glass roots people, and the PDRC is backed by the middle class particularly in Bangkok and the south.

Finally, democracy perception can be one of the most paradoxical concepts in the Thai political movement context as each political faction uses "democracy" to represent their movement and title. Each movement is driven by different democracy perceptions. The goal of the People's Alliance for Democracy (PAD) is concerned with real democracy which has not been so far satisfied by the Thai representative democracy political system. This is evidenced by the fact that Thaksin Shinawatra can dominantly select the political party members to be his proxy. Although the People's Democratic Reform Committee (PDRC) also has a similar goal of overthrowing the Thaksin regime, it desires to go further than an elimination of Thaksin regime. The group wants the Thai political system to be reformed to be a more "green politics" and free from corruption. Meanwhile the aim of United Front for Democracy against Dictatorship (UDD) is equal economy and economic policies must be formulated directly by an elected government. Therefore, the difference of democracy perception is the bedrock that brings about political conflict and unrest political movement.

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***The Role of Political Party and Political Movement in Thailand:  
A Case Study on People's Alliance for Democracy (PAD) and People's Democratic  
Reform Committee (PDRC)***

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**Abstract**

This paper argues that there is an hidden factor which impacted on Thai political conflicts. Thus, the political party played the main role and had strongly relations with political movements in Thailand and it has been created a turbulence in Thai political history. In PAD and PDRC camps, the Democrat Party is a Thai political party and it is the oldest in Thailand, upholds a conservatively and classically liberal pro-market position. As well as, their political ideology shifted to pro-middle class and upper class level rather than labor class. Then, several Democrat Party leaders allied themselves with the PAD and PDRC camp. Yet, some of them became a leader to protest government and occupied government building. Therefore, without a doubt this Thai political turmoil since 2005 until present political party is highly dominated Thai political ideology to Thai people.

Keywords: Political Party, Political Movement in Thailand, People's Alliance for Democracy (PAD), People's Democratic Reform Committee (PDRC)

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## **Introduction**

This paper compares two political movements occurred in Thailand since 2005 to 2013. The political movements' scenario began with the People's Alliance for Democracy (PAD) and the People's Democratic Reform Committee (PDRC). The discussion on mentioned political movement covers background, timeline events, and political movement process in terms of how they are organized, generated, mobilized, reacted, and analyzed on political party factor that dominant political movements in Thailand.

### **The People's Alliance for Democracy (PAD)**

The People's Alliance for Democracy (PAD), which is also called the National Liberation Alliance, the National Liberation Party or the yellow shirts, is originally a coalition of protesters against Mr. Thaksin Shinawatra, the former prime minister of Thailand. The PAD has its source in weekly political talk show by Sondhi Limthongkul named "Muang Thai Rai Sapda" (Thailand Weekly). The PAD started rally against Thai Prime Minister Thaksin Shinawatra and his administration at the Royal Plaza and ended peacefully after midnight Saturday. The demonstrators set Feb. 26 as the day for their next gathering. This was the first PAD action in public space which was joined by people urging government to accept their demands.

### **The People's Alliance for Democracy (PAD) Aims and Goals**

The PAD aims to get rid of corruptions. Thaksin Shinawatra, the billionaire and civilian dictator has left Thailand with extensively high level of corruptions and proxy politicians. Having cheated the country while being in power, Mr. Shinawatra hid his corrupt billions of dollars' worth of assets overseas. When he was ousted, Mr. Shinawatra was subjected to numerous convictions. He, however, cowardly avoided imprisonment by fleeing overseas and pulled strings on politicians to sabotage his homeland. The PAD protects the monarchy. Thaksin Shinawatra desires to launder himself by amending the laws to favor him and his proxy politicians. He is trying to abolish the monarchy and make himself a president by arousing turmoil and changing Thailand from being a "Kingdom" to a "Republic" instead. As a permanent cure for Thailand, the PAD intends to establish real democracy for Thailand. At present, it is not genuine democracy with bad on-sale politicians. To achieve all above, 1-3, we have to get rid of Thaksin Shinawatra and his proxy politicians and punish them according to the laws.

### **The People's Alliance for Democracy (PAD) and Political Movement Timeline**

- The PAD started rally against Thai Prime Minister Thaksin Shinawatra and his administration at the Royal Plaza and ended peacefully after midnight Saturday. The demonstrators set Feb. 26 as the day for their next gathering. This was the first PAD action in public space which was joined by people urging government to accept their demands.

- After military coup toppled Mr. Shinawatra administration, the PAD was re-established in Thailand on March 28, 2008 at Thammasat University auditorium. Several issues were raised by the PAD, including the Prime Minister Samak Sundaravej's ties to Thaksin Shinawatra, ties between some People's Power Party members and the banned Thai Rak Thai party, alleged interference in the justice system and attempts to amend the 2007 Constitution. Demonstrations and street protests by the PAD restarted on May 25, 2008 at Democracy Monument on Ratchadamnoen Road. The PAD supporters amassed to protest against the proposed constitutional amendments. The rally attracted ten thousand supporters.
- On August 26, 2008: The PAD protesters invaded Government House, three ministries and headquarters of the NBT (National Broadcasting Services of Thailand). Little effort was made to remove the protesters from Government House although minor clashes between police and protesters were seen.
- On November 25, 2008: The PAD blockaded Don Mueang where the government held its temporary offices and occupied Suvarnabhumi International Airports, leaving thousands of tourists stranded and cutting off most of Thailand's international air connections. Several explosions and clashes occurred in the following days.

### **The People's Alliance for Democracy (PAD) Members and Support Group**

The PAD members are initially consisted of middle and upper-class residents of Bangkok and Southerners and supported by the conservative elite, factions of the Thai Army, and state-enterprise labor unions. These include prominent socialites and some little-known minor members of the Thai royal family. The PAD's support base has expanded to include civil servants, state enterprise labor unions, the urban middle-class of other cities and conservative Buddhist groups. Supporting Buddhist groups include the Santi Asoke sect and their "Dharma Army" (led by Thaksin Shinawatra's former mentor Chamlong Srimuang). Moreover, General Pathompong Kesornsuk, a close aid of Privy Council President Prem Tinsulanonda, appeared in full uniform at the PAD protests and urged his fellow soldiers to follow suit. As Bouckaert (2011) mentioned in early 2006 that growing discontent among many social sectors including intellectuals, NGOs, business elites, the upper-middle class, civil servants, employees of state-owned enterprises and opposition political parties, particularly the Democrat Party which could not compete with Mr. Shinawatra geographically nor financially, had coalesced into an organized protest movement.

### **The People's Alliance for Democracy (PAD) and Political Party**

According to The popularity of the populist Thai Rak Thai Party in Thai politics from 2001 to 2006 presented new challenges to the Democrat Party. The TRT championed populist policies with its focus on providing affordable and quality health care for all citizens, village-managed microcredit development funds, the government-sponsored One Tambon One Product program, and others. The populist policies earned

the TRT enormous support from rural constituencies, unprecedented in Thailand's history.

According to the Nation (2008) reported that the opposition to the TRT government rose in Bangkok after Thaksin's family announced their tax-free sale of their 49.6% stake in Shin Corp to Temasek for almost 73.3 billion Baht on January 23, 2006. The People's Alliance for Democracy began a series of anti-government protests. Several Democrat Party leaders also joined the PAD, which accused Thaksin of disloyalty to the throne and asked King Bhumibol to appoint a replacement Prime Minister. Thaksin Shinawatra dissolved the House of Representatives on February 24, 2006 and called for an election. As well as The nation (2006) reported that on March 24, 2006, Abhisit Vejjajiva publicly backed the People's Alliance for Democracy's call for a royally-appointed government. Bhumibol, in a speech on 26 April 2006, responded, "Asking for a Royally-appointed prime minister is undemocratic. It is, pardon me, a mess. It is irrational".

Moreover, as Straits Times (2008) pointed out that Abhisit and his allies of opposition parties boycotted the April 2006 elections, claiming it "diverted public attention" from Thaksin's corruption charges and his sale of Shin Corp. The boycott caused a constitutional crisis, prompting Thaksin to call another round of elections in October 2006, which the Democrats did not boycott. The Army seized power on 19 September and cancelled the upcoming election.

Furthermore, as Bloomberg (2008) mentioned that The People's Alliance for Democracy resurfaced to destabilize the People's Power Government, after having gone into dormancy following the 2006 coup. Several Democrat Party leaders allied themselves with the PAD in the subsequent 2008–2010 Thai political crisis. The PAD organized extended street protests and later led a months-long seizure of Government House, the seat of the Thai government. In November 2008, PAD forces seized and occupied Don Muang Airport and Suvarnabhumi Airport. The PAD declared that the only person they would accept as Premier was Abhisit of the Democrat Party. Abhisit disapproved of the sieges, but did not stop his deputies from their roles in the PAD.

### **The People's Alliance for Democracy (PAD) Mobilization and Reaction**

The PAD is supported by Sondhi Limthongkul, the founder of Manager Media Group and the affiliated companies of Manager Daily newspaper and the ASTV satellite television channel. Sondhi took his anti-Thaksin talk show on the road broadcasting via satellite through his NEWS1 ASTV channel based out of Hong Kong and webcasting via the website of his Manager Daily newspaper. Talk show sites, including Sanam Luang and the King Rama V equestrian statue, became magnets for the PAD crowds.

In terms of people mobilization, the PAD has allied webpages and Facebook pages which are used as a communicating tool to gather people. Paireepairit (2012) points out that when Manager Group started rallying against Thaksin Shinawatra, Manager.co.th became the best online source for political news, especially for the anti-Thaksin camp. Once Muang Thai Rai Supdah was dropped from TV, Sondhi continued his show at a public

park in Bangkok and broadcasted livestream versions of the show through Manager.co.th. The program was later on broadcasted via satellite TV station, ASTV. Manager Group utilized multi-medium media strategy effectively. Viewers who missed live events could watch archived clips online with full transcription within hours. Most articles on Manager.co.th were opened for discussion via a commenting system which has created a vibrant community among online politics followers.

The source of concerns by the opposition is from both government and anti-PAD groups. People daily (2006) reported that the organizer of the rally failed to meet the legal requirement and was fined by metropolitan police for disturbing other people's rights by using loud speakers and causing traffic problems when staging the demonstration. "The law is to be enforced now compromisingly after last Saturday's rally caused traffic congestion and disturbing noises in the area," Government Spokesman Surapong Suebwonglee was quoted by the Thai News Agency as saying after the demonstration began in late afternoon.

On the other hand, the UDD supporters have been opposing the PAD since the 2006 coup accusing the PAD of supporting the coup. Since then, clashes between supporters of the two groups have taken place from time to time. One example can be demonstrated by the clash in Udorn Thani in July 2008 where the red-shirt UDD supporters attacked the PAD rally injuring several PAD supporters. Moreover, the PAD meeting in Chiangmai, the bastion of Thaksin Shinawatra, was also disturbed.

### **The People's Democratic Reform Committee (PDRC)**

As Wikipedia (2014) puts it, The group was formed on 29 November 2013 by protest leader and former Democrat Party MP Suthep Thaugsuban, who appointed himself as secretary-general. The movement was supported by various organisations including the Democrat Party, the People's Alliance for Democracy (a coalition of opposition to Thaksin), student activist groups, state workers unions and pro-military groups. The PDRC's support stemmed mostly from affluent Bangkokians and Southerners. Whistle-blowing was a central symbol of the protests.

Moreover, according to Agence France Presse (2013), anti-government protesters returned to the streets of Bangkok on Thursday as Parliament were debating the amnesty bill which the opponents believed that it would "whitewash" past abuses and allow ousted prime minister to return. Critics of the controversial legislation say it could unleash a fresh bout of political turmoil in a country rocked by a series of rival demonstrations since royalist generals toppled Thaksin in 2006. The opposition, Democrat Party, called for a mass rally against the planned amnesty outside a railway station in Bangkok on Thursday evening, thousands were predicted to attend.

By late afternoon, hundreds of people had already gathered at the site. Some were wearing bandanas reading "Fight" and waving clappers with the slogan "Stop the amnesty for corrupt people." The ruling Puea Thai Party of Prime Minister Yingluck Shinawatra ordered all its lawmakers to support the bill which would cover crimes related

to political unrest since 2004. While a vote was expected to take place in the next few days, the demonstration was still in unrest.

### **The People's Democratic Reform Committee (PDRC) Aims and Goals**

Protests in recent years are seen to take place as to achieve two main political goals. The first one is working toward the rejection of an amnesty bill. According to the Guardian's report (2013), Thailand's Senate convened a highly charged session to determine the fate of an amnesty bill, which could pave the way for the return of the self-exiled former leader, Thaksin Shinawatra. Thousands of protesters rallied across Bangkok, raising concerns of renewed political violence after three years of relative calm. Nearly 7,000 police officers were deployed around the parliament, near the main protest site.

Consequently, Bangkok Post (2013) reported that senators have rejected the blanket amnesty bill in a bid to defuse political and social tensions. Anti-amnesty bill demonstrators march from Asok intersection to converge with another protest group from the Silom area at the Royal Thai Police Headquarters near Ratchaprasong and headed to Ratchadamnoen Avenue altogether. After 12 hours of debate, the senators shot down the controversial bill by 140 votes to 0.

After the rejection of an amnesty bill, the protest had shifted their aim and goal to Yingluck Shinawatra's resignation and political reform. Burma News (2013) reported that the Thai people at the moment stood resolute in their goal of creating a better, brighter future for future generations. To attain these goals, reformation before the next bout of elections was necessary. Laws must be fair and just, corruption must be abolished and electoral fraud and vote buying leading to endless vicious cycles of graft must be uprooted. However, the illegitimate government under Yingluck Shinawatra which defiantly maintained its invalid claim to office was the main impediment to these reforms.

### **The People's Democratic Reform Committee (PDRC) and Political Movements Timeline**

In November 25, 2013, the anti-government protesters led by Suthep caused the closure of several government offices without police intervention as the government feared that this could result in a repeat 2006 military coup. It was a first day of People's Democratic Reform Committee (PDRC) to be formed and demonstrated peacefully. Thirat News (2014), however, reported that within three months of demonstration of the People's Democratic Reform Committee (PDRC), there has been more than 50 times of violence between government and PDRC. There were approximately 628 people injured and 11 people killed since November 30, 2013 to February 12, 2014.

- November 25: Anti-government protesters began marching to several government offices forcing their way inside the Ministry of Finance, the Budget Bureau, the Ministry of Foreign Affairs and the Public Relations Department and urged for their closure. The prime minister, Yingluck Shinawatra, invoked the Internal

Security Act (ISA) in all districts of Bangkok, Nonthaburi Province, Bang Phli and Lat Lum Kaeo Districts of Samut Prakan Province and Pathum Thani Province to handle the crowd.

- November 27, 2013: The protesters continued their activities by rallying to another ten ministry offices, cutting the electricity supply and forcing the evacuation of the people who worked at Department of Special Investigation's headquarters and staging a sit-in at the Chaeng Watthana Government Complex. Protesters also rallied to twenty-four provincial halls which were mainly in the South, a traditional Democrat Party base of support.
- November 30, 2013: An Internet services had been disrupted for several hours in the evening and in the morning of the next day. Violence erupted between anti-government protesters and the red shirts near Rajamangala Stadium. With gunshots fired, the clash resulted in 4 people died and 57 people wounded. The UDD leaders subsequently ended their rally in the following morning.
- December 9, 2013: The protest was attended by 160,000 people in the “final battle”.
- December 8, 2013: All 153 minority Democrat MPs jointly resigned. The collective action was seen as an attempt to further pressure the government.
- December 17, 2013: The PDRC Secretary Suthep Thaugsuban called for rallies with demanding slogan: reform before election, immediate resignation of Ms. Shinawatra and the cabinet, establishment of a non-elected People’s Council to start a reform process within 12 to 18 months and election under newly reformed Constitutions and Election Laws.
- December 27, 2013: Mr. Thaugsuban announced in a speech at the Democracy Monument in Bangkok that the anti-government protesters planned to shut down the Thai capital city following the so called “shut down Bangkok” campaign.

### **The People’s Democratic Reform Committee (PDRC) Members and Support Group**

According to Bangkok Post (2014), although the Centre for Maintaining Peace and Order (CMPO) had decided to postpone revealing the names of 136 firms and individuals said to be funding anti-government protests, a list of 32 alleged financial backers has been leaked to the media. The reports identified 19 companies and 13 individuals who were allegedly funding People’s Democratic Reform Committee (PDRC) protests.

Post Today newspaper named the 19 companies as Saha Pathanapibul Plc, Gaysorn Plaza, Siam Paragon Department Store, King Power Group, Dusit Thani Hotel, Siam Intercontinental Hotel, Riverside Hotel, Mitr Phol Group, Wangkanai Group, Boon Rawd Brewery Co, Thai Beverage Plc, Yakult (Thailand) Co, Neptune Co, Thai Namthip Co, Muang Thai Life Assurance Co, Hello Bangkok Co and Metro Machinery Group. The 13

individuals were identified as Chumpol Suksai, Chalerm Yoovidhya, Pramon Suthiwong, Khunying Kallaya, Nuanphan Lamsam, Wimolphan Pitathawatcha, Dr Pichet Wiriyachitra, Taya Teepsuwan, Sakchai Guy, Krisana Mutitanant, Police General Kitti Rattanachaya, Chitpas Kridakorn and Issara Vongkusolkit.

However, PDRC secretary general, Suthep Thaugsuban, told supporters that none of the people on the list, except Sakchai Guy, had provided financial support to his political movement. Mr. Thaugsuban said Mr. Guy's donation to PDRC was from T-shirts selling. Similarly, many companies and individuals who were named to support PDRC denied that they did not support PDRC. For example, Saha Pathanapibul chief executive officer, Boonchai Chokwatana, denied that he helped funding the anti-government movement, and Mr. Pramon, chairman of Toyota (Thailand), also denied any financial involvement with the PDRC. Moreover, Bangkok Post (2013) reported that former leader of the People's Alliance for Democracy, Sondhi Limthongkul, was to join the rallies for the first time by starting a march from Ban Phra Arthit. Therefore, the yellow shirt group was to join PDRC to the massive rally against Yingluck Shinawatra's government.

### **The People's Democratic Reform Committee (PDRC) and Political Party**

According to Feigenblatt (2014) emphasized that it is important to understand the interests of the PDRC and its supporters. While the PDRC is a relatively diverse coalition they share some important interests. Many of the movement's leaders are disgruntled Democrat politicians who have found it increasingly difficult to have an impact on national policy due to the dwindling support for their party and the resulting weakness in the legislature.

In the same way, as Kongkirati (2015) stressed out that the urban middle class protesters and the southerners who were the staunch supporters of the Democrat Party, mobilized under the movement called the People's Democratic Reform Committee (PDRC) led by the then deputy head of the Democrat Party Suthep Thaugsuban, similarly as Sinpeng (2014) emphasized that the protest movement, the People's Democratic Reform Committee (PDRC), was largely led by the main opposition party in parliament, the Democrat Party. The Democrats, who have failed to win an election since 1992, decided to pursue street politics full-time and walked out of parliament to fight for power not through the ballot, but through the streets. Building on the frustration of the various groups that had been disaffected by the Shinawatra's rule, the Democrats saw an opportunity to mobilize their supporters to not only oust Pheu Thai, but also to put an end to electoral democracy.

Moreover, as Tiebtienrat (2015) pointed out that it is undeniable that among all PDRC leaders, Suthep Thaugsuban, former Secretary General of Democrat Party and Deputy Prime Minister of Democrat Administration, is most prominent. Similar to Chamlong, Suthep is an experienced politician as well as an exceptional orator. Referred to by supporters as "Uncle Kamnan" (District Headman), Suthep has been involved in national politics since 1979 as MP from Surat Thani. Throughout his long political career, he has been one of the most influential politicians as he was the

key informateur of many Democrat-led coalitions. Suthep nominated himself to the Secretary General of PDRC, which was well accepted by PDRC supporters. Beyond Suthep, the PDRC brought in a new generation of speakers. They may not be powerful enough to be considered leaders, but it is undeniable that these icons of a young generation have attracted significant numbers of young followers. Chitapas Birombhakdi Krisdakorn, who worked as deputy speaker of the Democrat Party, is among the most popular figures in social media. She has attracted large media attention in traditional and social media.

Furthermore, as Haller (2014) pointed out that The Democrat Party is the only serious opposition to Thaksin's Pheu Thai Party has not won an election since 1992. Knowing that the Democrats have little chance of gaining an upper hand in free and fair polls and frustrated by their regular defeats against the emerging political powers from the rural areas the Democrats and their Bangkok-based supporters are boycotting the February elections. "Democracy has not worked for the Democrats" is how The Economist described this phenomenon in an ironic remark. In a show of strong defiance, yellow-shirt protesters began to obstruct candidate registration by blocking access to temporary registration offices. It is still not clear if elections can proceed as planned.

In the same way, Thabchumpon, Sangkhamanee, Middleton, and Wongsatjachock analyzed that as within the Thai political situation in 2013, there were a lot of emerging political groups established as anti-government groups, not only in parliament but also outside of the formal government system. Although many groups had their own direction and strategy to oppose the government, they moved in general under the banner of the PDRC movement, which was also had informal links to the Democrat party.

### **The People's Democratic Reform Committee (PDRC) Mobilization and Reaction**

According to RT.com (2014), thousands of anti-government protesters marched through the streets of Bangkok to mobilize support for their campaign of shutting down the Thai capital on January 13 in their bid to topple Prime Minister Yingluck Shinawatra's government. The march was the second in a series of marches planned to rally support for their goal. The protesters also claimed that early elections cannot be held until reforms had taken place. The Anti-government protesters began the "occupation" of Bangkok and the campaign called "shutdown Bangkok" by blocking major road intersections in the center of the city. According to Asia Foundation survey report (2013), 98% of respondents participated in the PDRC organized Bangkok Shutdown campaign in an independent personal capacity, and 99% of respondents were reported that they made their own way to the demonstration sites and used the Internet, smart phones or social media to involve with the events.

According to Jakarta Post (2014) analysis, the People's Democratic Reform Committee (PDRC) has been extensively using social media to inform, invite and connect with supporters and the public. They are active in posting information, news and updates many times a day. They do this via facebook.com/PDRCThailand and Twitter at @CMDThai.

The PRDC's Facebook page had 27,040 people talking about it and nearly 19,000 "friends" who liked it.

The PDRC's action is responded by two main groups namely the UDD, or the red shirts, and the caretaker government led by Yingluck Shinawatra. Both groups are against PDRC movements. Since PDRC seized of government buildings and public streets, the government considered the action to be threatening to the country, it thus declared a state of emergency. Consequently, the Centre for Maintaining Peace and Order (CMPO) was set up for dispersing the protesters.

Furthermore, The Nation (2014) reported that, on January 17, 2014, many red-shirt supporters arrived on motorcycles and in vans to challenge the anti-government protesters near the Chaeng Wattana rally site. Tension rose at the site at 11am when the red shirts arrived together with a sound truck. They announced through the public address system that that the rally at Chaeng Wattana was causing hardship to passenger van operators and local residents. Thai PBS (2014) also reported an attack in other areas. While the leader of anti-government groups were trying to campaign for the local people to support national reform to take place before an election, the crowd were harassed by red-shirt followers in Muang District of Chiang Mai.

## **Conclusion**

As Tiebtienrat (2015) analyzed that the politicians having played prominent roles in civil movements can be discerned from the analysis presented here. Politicians such as Suthep are skilled orators who can influence a crowd. Politicians can provide an organizational structure and committed followers for a range of issues. As shown with the PAD and PDRC, new forms of technology can create a near-organizational structure: for the PAD/PDRC, the 4G internet network and social media, along with media organs including ASTV Manager, Bluesky Channel, and even RSU Wisdom TV. However, such structures do little to promote commitment to a cause.

It is easy to ignore a message over the internet, a Line message or phone call, but if one is a member of the Dharma Army or a politician's support network with one's friends and acquaintances, it is difficult to ignore a call for action. Furthermore, even well-organized civil society networks, such as state enterprise unions, may struggle to compete with political organizations. Because civil society networks are generally issue-oriented, they can have difficulty in maintaining loyalty, as seen in the defection of the NSCT and the Metropolitan Electricity Authority from the PAD/PDRC. On the other hand, political networks are loyal and committed to their leaders over the long term on a range of interests. This greater commitment seems to be the key to the role of politicians when civil society movements set out to overthrow a government. Therefore, without a doubt both PAD and PDRC camp. Are highly dominated and supported from Thai political party.

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***The Role of Political Party and Political Movement in Thailand: A Case Study on United Front for Democracy against Dictatorship (UDD camp)***

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**Abstract**

This paper aimed to analyze the role and relationship between political party and political movement. In this case, we will analyze the Thai Rak Thai Party and the Pheu Thai Party which are both of them dominated by Thaksin and Yingluck Shinawatra. Therefore, this paper found that both Thaksin who was a leader in Thai Rak Thai Party and Yingluck who was a member and leader in the Pheu Thai Party are influenced and had a main role to dominate United Front for Democracy against Dictatorship (UDD camp) in political conflict since 2005 to present. Also both political parties are a part of UDD camp which was demonstrated and occupied downtown Bangkok. Therefore, Thai political conflicts in 2005-2013 were a conflict between two big Thai political parties and demonstrators became as a tool for demanding against democracy rule.

Keywords: Political Party, Political Movement, United Front for Democracy against Dictatorship

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## Introduction

According to Global nonviolence action database (2010) explained on Thai political conflicts that although Thailand has had a constitution since 1932, the stability of the country's political structure is questionable. For instance, the country has had 17 different constitutions over this time period with government forms ranging from dictatorship to democracy. In addition, the country rarely has a prime minister who is able to serve a full term without being ousted, and corruption at the highest levels is a constant problem.

The 2010 protests stem from a military coup in 2006 that ousted former Prime Minister Thaksin Shinawatra and replaced him with current Prime Minister Abhisit Vejjajiva. This coup represented a larger dichotomy in the citizens of Thailand that manifested itself in two socio-political groups, the United Front for Democracy Against Dictatorship (UDD) and the Peoples' Alliance for Democracy (PAD). UDD, also called the red shirts, is comprised of poor, rural workers or farmers from North Thailand and supports former Prime Minister Thaksin. PAD, also called the yellow shirts, is comprised of elites, royalists, urban middle class, and the upper class, and supports current Prime Minister Abhisit. The main point of departure between the two parties was their economic policies; while Thaksin favored economic policies that helped the poorer class, Abhisit's policies focused mostly on helping urban business. This difference is the fundamental basis for the tension between the red shirts and the yellow shirts.

PAD is responsible for the 2006 coup that ousted Prime Minister Thaksin, banned his party, and planned new elections. Despite this, supporters of Thaksin reestablished their party for the 2007 elections and won, even though he was in exile. Within a year, the PAD protested again and succeeded in challenging the constitutionality of the pro-Thaksin party in the Thai courts. The PAD-friendly jurists ruled the party unconstitutional, which allowed Prime Minister Abhisit, a PAD candidate, to seize power.

In February 2010, Abhisit's administration seized almost 50 billion bahts worth of Thaksin's assets. This led Thaksin to appeal to his supporters directly and urge them to continue fighting for democracy. This was probably the most immediate cause of the UDD's decision to protest. Following this, red shirts from around the country converged upon Bangkok with strong urging from their leaders to remain nonviolent. Almost immediately, the government enacted the Internal Security Act that gave the military the power to impose curfews and limit peoples' movements within the country.

By March 12, around 50,000 red shirt protesters had arrived in Bangkok via trucks displaying large red flags and banners. The protesters were demanding the immediate dissolution of parliament and new elections. Within the week, 150,000 people had joined the protests in the streets and essentially shut down the financial district of the city because their sheer numbers prevented traffic from moving. The protesters gathered in the streets, listening to prominent leaders, playing music, and joining in chants. Also during this week, the leaders of the protests began collecting blood from the protesters

and promised to toss the blood on the grounds of the main government building if their demands were not immediately met.

The government refused to negotiate with the protesters or meet their demands, so the red shirts continued with their plans and, on March 16, tossed approximately 300 liters of blood on the lawn of Prime Minister Abhisit's house and on the grounds of other government buildings. The government allowed this action, but kept thousands of soldiers on stand-by in case they were needed. This symbolic action brought a great deal of international media attention to the protests as well as fears about health issues. However, this did not provoke the government to any action.

On March 21, the red shirts drove around Bangkok in a parade of approximately 65,000 motor vehicles. The following day, they gathered poems, pictures, and other artistic works to add to a large canvas that also featured blood from the protesters. Leaders suggest this was intended to boost morale within the red shirts and create a larger picture of what the movement was trying to accomplish.

Up to this point, Abhisit had remained mostly quiet in regards to the protesters, but he did mention that he was willing to consider some of the demands and meet with protest leaders to talk about the situation. However, some external commentators claimed that talks were unlikely to amount to any type of compromise because neither side could afford to be seen as giving in.

On March 25 and 26, several grenades exploded in different areas of Bangkok. Although it was never firmly established which side threw the grenades, it is likely that the protesters are to blame because, out of eight casualties from the blast, five were soldiers. This was the first violence of the protests, but because of their extremely isolated nature and immediate condemnation from red shirt leaders, they did not provoke the government to a more drastic response or undermine the red shirts.

As the protests continued into a third week, the government began to feel more and more pressure. The protests had shut down a large part of the city and prevented many business people (who would identify as yellow shirts) from working. This led to the yellow shirts announcing they would hold counter protests if the government did not deal with the situation soon. Additionally, tourism took a hit as international travel to Thailand dropped approximately thirty percent. These factors led the government to begin talks with leaders of the protests.

After two rounds of talks, nothing had been decided. Abhisit offered to hold an early election in nine months if the protesters stopped, but the protesters retorted with demands for the parliament to be dissolved within 15 days. The impasse continued and the yellow shirts only became angrier.

On April 7, the government declared a state of emergency and shut down a TV station that was paid for by red shirt sympathizers claiming that it was inciting violence on April 9. Rejecting the state of emergency, the red shirts broke through the police cordon, seized

the soldiers' weapons, and occupied the TV station for three hours on April 10. The issue was resolved after Abhisit promised the TV station would no longer be banned. However, this was the turning point for the protests.

Abhisit also promised he would return Thailand to "normalcy" as fast as possible and issued arrest warrants for the leaders of the red shirts. On April 11, the military, still operating under the Internal Security Act, attempted to forcibly retake parts of the city that the protesters occupied. Supposedly armed with only tear gas and rubber bullets, the military attempted to disperse the protesters, but eyewitnesses say that the military was using live rounds at times. In response, the protesters began using petrol bombs. That day, the death toll rose from 8 to 21 and more than 800 were injured.

The protesters continued to rally and began to build bunkers in the street to defend against attacks by the military. Adding to the chaos, the yellow shirts began their own protests against the government for not having stopped the red shirts. It is important to note that the yellow shirts were also protesting against the red shirts, though. The military again responded with violence, killing one and injuring a number of others.

On May 3, feeling pressure from both the red shirts and the yellow shirts to find a quick conclusion to the protests, Abhisit promised to hold elections by November 14 if the red shirts ended their protests. This compromise was accepted by the leaders of the red shirts the next day, but later rejected when they found out that the compromise also allowed legal exemption for government leaders that had been responsible for protesters' deaths.

With no end in sight and compromises seemingly unworkable, Abhisit took firmer military action on May 14. The military surrounded the protesters in their main camp in Bangkok and the clashes quickly turned violent. In the first day, the military killed ten people, including some foreign journalists, more than a hundred people were injured, and a sniper assassinated one of the red shirt leaders while he was giving an interview. The next day, the military killed fourteen more and injured approximately 200. Protests leaders threatened to actively change from nonviolent tactics to violent tactics. In response, the military created "live fire zones" and shot anybody who entered these areas upon sight. By the third day, the military had killed another nine. Of the 35 killed at this point, only one was a soldier.

On May 19, the military attacked the red shirt camp. Eleven more died, hundreds were injured, and many more were arrested. After this direct assault, the majority of the red shirt leaders either surrendered or fled. Although random acts of violence continued for weeks to come, the majority of the protests were broken up by May 20 and Thailand was returning to "normalcy."

Ultimately, the protesters did not meet any of their goals, but they did bring substantial international attention to class issues in Thailand. Additionally, the red shirts began discussing the possibility of further protests in early October 2010, so it is obvious that, while these campaigns are over, the red shirts' movement continues.

### **The United Front for Democracy against Dictatorship (UDD camp)**

According to Thai Red Shirt website (<http://thairedshirts.org>), the United Front for Democracy against Dictatorship (UDD), also known as the red shirts, is the biggest pro-democracy movement in Thailand's history. Red Shirts are social activists who believe that the people of Thailand deserve a political and judicial system that ensures their universal human rights and justice. Most red shirts are ordinary working-class Thais. They include unregistered laborers, farmers, the poor and those who are not qualified for any kind of welfare or pension. Red shirts also include employees in industries and other services such as restaurant and hotel. While it is difficult to give an exact total number of Red shirts, there are almost certainly in their millions, and their supporters are in their tens of millions.

The Red shirts roots are in the various groups who protest against the military coup in 2006, such as the Federation for Democracy back in 1992, the Saturday Voice against Dictatorship, 19th September Group, PTV Group and Ex-Thai Rak Thai members. These groups protest against the military coup of 19 September 2006 and have gradually grown from small gatherings to large protests. The Red color was first adopted in 2007 as a symbol against the 2007 constitution drafted by the 2006 coup makers.

The first name of UDD is "Democratic Alliance Against Dictatorship" (DAAD), and it was later on changed to "United Front for Democracy Against Dictatorship" (UDD). The UDD was first formed in 2006 to oppose the military government and the military coup, which overthrew Thaksin five weeks before the scheduled elections. UDD organized anti-government rallies during the military government's rule in 2006–2007 and opposed the military's 2007 constitution. UDD website points out that the Democrat Party represents Thailand's conservative forces who seek to hold power over the country both within and outside of the system and with no mandate from the people. These conservative forces rely on various state apparatus such as the army, judges, appointed senators and independent organizations which were, in fact, appointed by military coup maker. The red shirts have struggled against all these elements in order to return power to the people and nullify the effects of the 2006 coup.

### **Aim and Goal of United Front for Democracy against Dictatorship (UDD camp)**

According to the website of the red shirts or the UDD, the group has six objectives to achieve which are:

1. To attain true democracy and to ensure that sovereignty is truly in the hands of the people of Thailand with the King as the head of state.
2. To unify grassroots masses as the main social and cultural force together with people from every sector who seek democracy and justice and to resist "aristocratic" forces that obstruct equitable and democratic national development.
3. To promote non-violence as the modus operandi for all activities.

4. To fight against poverty by tying economic policies on poverty reduction through political strategies which stress that economic policy must be directly formulated by an elected government.
5. To reinstate the “Rule of Law” through ensuring equitable and transparent judicial process for all, along with putting an end to the “double standards” policies which are currently under control by aristocratic interests and elite networks.
6. To revoke the 2007 Constitution and its unjust laws that favor certain military and elite interest and to draw up a new democratic Constitution.

### **United Front for Democracy against Dictatorship’s people and political party**

The United Front for Democracy Against Dictatorship (UDD whose supporters are commonly called red shirts, is a political pressure group opposed to the People's Alliance for Democracy (PAD), the 2006 Thai coup d'état, and supporters of the coup. Notable UDD leaders include Jatuporn Prompan, Nattawut Saikua, Veera Musikapong, Charan Ditthapichai, and Weng Tojirakarn. The UDD allies itself with the Pheu Thai Party, which was deposed by the 2014 military coup. Before the July 2011 national elections, the UDD claimed that Abhisit Vejjajiva's government took power illegitimately, backed by the Thai Army and the judiciary. The UDD called for the Thai Parliament to be dissolved so that a general election could be held. UDD accused the country's extra-democratic elite the military, judiciary, certain members of the privy council, and other unelected officials of undermining democracy by interfering in politics. The UDD is composed of mostly rural citizens from northeast (Isan) and north Thailand, of urban lower classes from Bangkok, and of intellectuals. Although the movement seems to receive support from former prime minister-in-exile Thaksin Shinawatra, not all UDD members support the deposed prime minister. Also as Thabchumpon and Maccargo (2011) points out, the UDD has gathered people with a wide range of backgrounds, ranging from former communists to liberals and rightist hardliners. The lack of clear lines of command and accountability among the various core leaders of the UDD undermines the effectiveness of the movement. Overall, the red-shirt movement represents an extremely pragmatic alliance among groups ranging from idealistic post-leftists to others of a rather thuggish disposition, and the elements from the two sides that had fought one another in the 1970s were now collaborating. Also, Moreover, Paireepairit (2012) gives some examples on red-shirt used social media after the military coup which are collected from 19Sep.net, Saturdayvoice.com, Thai Free News and Thai E-news. Those are notable forums used by anti-coup and Thaksin Shinawatra supporters. The red-shirt website also provides links to their alliances, for example, 2 Bangkok.com, Asia Provocateur, BlogSpot, Chicago Red Shirts For Democracy (illinoisredshirts.blogspot.com), RED IN USA (redusala.blogspot.com), Robert Amsterdam Thailand, UDD Red, and UDD TODAY.

According to Thabchumpon and Mccargo (2011), it is shown that without denying the agency of the protesters themselves, it is also important to recognize that the red shirts are highly susceptible to politicization and mobilization by community leaders who are often linked to pro-Thaksin politicians. The red shirt movement is a loosely structured network organization rather than a hierarchical one. Members expand the network by reaching out

to friends, relatives, and people in their own villages and communities. Red shirt groups communicate through community radio stations, the distribution of CDs and hard-copy newsletters which are reproduced locally as color photocopies. The networks are organized in the way that the demonstration outside a provincial hall could be held within half an hour notice.

Moreover, the UDD in Northern and Northeastern part of Thailand gathered together and created a community which so called “Red-shirt villages” in the North and Northeast now number in the thousands, and their leaders are focused on expanding to the South. This proud show of grass-roots solidarity and political ideology concerns the group’s political rivals, and the military. The thousands of red-shirt villages were conferred by three groups; the Thai Federation of Red Shirt Villages for Democracy, the Democratic Front of Red Shirt Villages, and National United Front for Democracy against Dictatorship (UDD), which is closely linked to the ruling Pheu Thai Party.

According to The nation (2012) reported that in October 2011, the Thai Federation of Red Shirt Villages for Democracy was officially set up by Anon and other leaders of red-shirt villages at the urging of former PM Thaksin Shinawatra. It now has about 1,000 villages under its influence, with more than 400 of them in Udon and Khon Kaen. Another group, the Democratic Front of Red Shirt Villages, is led by Phetsak Kittidussadeekul, a prominent red-shirt in Udon Thani. The group controls about 200 villages in Udon and Roi Et.

In the Red-shirt villages under the three groups carry signs with messages like “Red-shirt villages for democracy” or “red-shirt villages love democracy”. But the key difference between them is that villages set up by Anon’s and Phetsak’s groups also have Thaksin’s picture beside the village sign

Yet, according to Thabchumpon and Maccargo (2011), the most prominent leaders or the “trio” include: Veera Musikaphong, a veteran politician, former Democrat Party secretary general and deputy interior minister in the 1980s; Jatuporn Phromphan, Member of Parliament (MP) from Pheu Thai Party; and Nattawut Saikua, former government spokesman.

Despite the image of the UDD as a group which is based in North and Northeast Thailand, all three members of the trio are Southerners. In contrast to these professional politicians, some other leading figures in the UDD have an academic or social-activist orientation. For example, Jaran Dithapichai is a former university lecturer and human rights commissioner, Waeng Tojirakan is a doctor and former leader of the May 1992 pro-democracy movement, Wisa Khantap is a singer, artist, and political campaigner and Woraphon Phrommikabut is a lecturer and former dean of the Faculty of Sociology and Anthropology at Thammasat University in Bangkok.

Other second-tier leaders are essentially populist agitator: For example, Arisman Phongruangrong is former pop singer and May 1992 activist, Kwanchai Phraiphana used to be a popular community radio host, Suphorn Atthawong is known as Rambo Isan and a

former Thai Rak Thai MP from Nakorn Ratchasima Province, and Yosawarit Chooklom is known as the comedian named Jaeng Dokjik. Apart from Mr. Phromphan, most of these leaders were supportive of a negotiated settlement in May 2010. However, the deal was blocked by three hard-line elements which are:

1. Members of Thaksin Shinawatra's family, including his sister Yingluck Shinawatra who was elected as a prime minister in August 2011.
2. A group known as "Red Siam," led by self-exiled former Prime Minister's Office Minister Jakkrapop Penkair, joined by a former member of Communist Party of Thailand (CPT), Surachai Danatthananusorn, and accused of having strong ties with Mr. Shinawatra by the authorities of republican leanings.
3. Maverick army General Khattiya Sawasdipol, best known as Seh Daeng. Seh Daeng was the chief trainer of a key element in the UDD security team called "King Taksin's warriors" (Nakrop Prachao Tak). He was widely seen as the leader of a shadowy group of "men in black" and was allegedly responsible for grenade launcher attacks on both military and civilian targets.

Furthermore, according to BBC (2012) analyzed that Mr Thaksin, a telecommunications magnate had governed Thailand for five years. He was very popular among the rural farmers and urban working class because he initiated policies that benefited them, such as funding for health-care and education.

When elections were held 18 months after the military coup, this rural support had not changed, even though Mr Thaksin was in overseas exile. Voters from Thailand's north and north-east returned his allies to power, only to see the government fall after a series of opposition protests and court rulings. So the red-shirts began protesting. Their first major protest began in March 2009 with a series of sit-ins outside government offices, but quickly escalated.

In April 2009 they forced the cancellation of a regional political summit after storming the venue in the seaside resort of Pattaya. Violence then erupted in Bangkok. Clashes involving troops, protesters and Bangkok residents left at least two people dead and dozens hurt. As troops massed, the red-shirts called off their protests. Leaders said they feared more loss of life. But their anger had not gone away and, in March 2010, they called fresh protests in Bangkok aimed at toppling the government. Tens of thousands of people occupied Bangkok's historic and commercial districts and at one point stormed parliament, forcing MPs to flee. Red-shirts also stormed a satellite transmission base, in a bid to restart a television station which had been shut down by the government.

The first bloodshed occurred on 10 April when at least four soldiers and 17 civilians were killed in clashes as the army tried to disperse the red-shirts from one of their two bases in Bangkok. The violence shocked the city - but the red-shirts consolidated their forces in one camp, closing down the city's commercial heart for several more weeks. On 19 May armed government troops moved into the red-shirt camp, smashing through barricades. By the end of the day, the camp had been cleared, several of the group's leaders arrested and dozens of people, including protesters and soldiers, killed. A year on, many of their

leaders have been released on bail. The red-shirts are now allies of the ruling Pheu Thai Party. Yingluck Shinawatra, Mr Thaksin's sister, led the party to a landslide victory in July 2011 and became Thailand's first woman prime minister.

Also, Walker (2008) analyzed that it seems hard to escape the conclusion that the Red Shirt protests of 2010 were a calculated coalition between two broad sets of interests. On one hand were the lower and middle-income peasantries of Thailand's north and northeast who believe with some justification that development in Thailand is avoiding them. On the other hand were Thaksin Shinawatra and his supporters who wish to oppose the current regime, unfreeze his assets, and even possibly allow Thaksin to return to power. In this sense, it seems both sides are using each other the peasants to gain funding and political visibility and Thaksin to mobilize people to destabilize the government. After all, this is a similar situation when Thai Rak Thai was elected in the early 2000s. Thaksin mobilized poorer voters to allow him to gain power. We should not be surprised if voters support him if he also provides them with benefits.

As Thabchumpon and Mccargo (2011) pointed out that overall, the redshirt movement was an extremely pragmatic alliance among groups ranging from idealistic post-leftists to others of a rather thuggish disposition: elements from the two sides that had fought one another in the 1970s were now collaborating. The ambiguous relationship between the self-exiled Thaksin and the redshirt leaders was a complicating factor in understanding the movement's decision-making process because it was unclear how far the hard-liners really represented the former prime minister's own stance. Yet, a focus on the leadership reveals relatively little about the movement itself, given the lack of direct connection between many of the UDD's leading figures and their grassroots supporters. Respected medical doctor, social activist, and elder statesman Prawase Wasi later appointed by the Abhisit government to chair a national reform committee argued after the April 10 violence that there were five types of redshirts.<sup>15</sup> These he classified as (1) Thaksin himself; (2) those hired by Thaksin; (3) "idealistic" reds; (4) violent extremists; and (5) the poor and their sympathizers, from both urban and rural areas. Prawase was entirely correct to highlight the diverse nature of the redshirt movement, and there is ample evidence that Thaksin, idealists, and extremists were all involved.

## **Conclusion**

Without a doubt, Thailand has been experience politics unstable since 2005 until present. It was begin since Thaksin Shinawatra took his position as Prime Minister of Thailand in 2001, until now his sister Yingluck Shinnawatra took control Thai government and ran country under "populist policy". However, under populist policy, Thaksinomic, and governed by Thaksin regime have been created political tension between supporters and protesters. The supports as UDD group or RED camp empirically that both Thanksin who was a leader in Thai Rak Thai Party and Yinkluck who was a member and leader in the Pheu Thai Party are influenced and had a main role to dominated United Front for Democracy against Dictatorship (UDD camp) in political conflict since 2005 to present. Also both political parties is a part of UDD camp whose was demonstrated and occupied downtown Bangkok. Therefore, Thai political conflicts in 2005-2013 was a conflict

between two big Thai political parties and demonstrators became as a tools for demanded against democracy rule.

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## ***Feedback in the EFL Writing Classroom: Effectiveness and Students' Perceptions***

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### **Abstract**

In EFL writing classes, teachers give feedback with the assumption that it will help students improve. In contrast, Truscott (1996) argues that feedback has little to no value to students. This presentation, using data gathered from a first-year university liberal arts reading course, seeks to document and measure the potential effectiveness of two forms of feedback (explicit commentary and coded feedback) and the pros and cons of both forms. This research project examines two classes of 25 students each who wrote seven 400-500 word papers on a variety of topics. One class was given explicit commentary feedback while the second class received coded feedback. Over the course of one term, grades were recorded and compared to examine any differences between the two classes while receiving different methods of feedback. The data does not exhibit any significant variation, perhaps indicating that the type of feedback used is not so important. In fact, over the course of the term, there was no significant improvement in the students' writing. Secondly, this presentation will present students' perceptions of teacher feedback, as recorded by a 6-point Likert scale questionnaire. Interestingly, the vast majority of the students indicated that they wanted feedback from the teacher, even though feedback did not appear to have much impact on their writing. One interpretation is that students simply want feedback from the teacher in the same way children seek attention from parents: simply for emotional rather than practical reasons.

Keywords: writing, teacher feedback, student perception, effectiveness of feedback

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## Introduction

Feedback allows students to review their own work and prepare for the next task under the guidance of the teacher (Hattie & Timperley, 2007). Writing teachers have options as to which feedback technique they will use in evaluating students' work. Determining which is the most effective technique is the source of much debate and research and may in some ways be dependent on the teacher's goals and students' needs.

Commentary, or explicit direct feedback, takes the form of the teacher correcting student mistakes and providing a correct form (Hyland, 1996). The advantage of explicit feedback is that students will know the correct or more natural form. Possible disadvantages include students not being able to apply the correct grammatical in future tasks and students not having to engage in self-correction (Makino, 1993).

Coded feedback relies on a pre-determined series of abbreviations for various errors (GR=grammatical error, O=omit this word, etc.). The advantage of this form of feedback is that it highlights the form or type of error a student has made (Hyland, 1996). This allows a student to self-correct and then apply that knowledge to future writing tasks. A disadvantage is students may struggle to self-correct and then the two-step process mentioned previously will not occur.

## Methods

This study was conducted on a first-year Liberal Arts reading course consisting of two classes of 25 students. The students read articles and summaries on a variety of topics, including literature, history and art of various Western nations. The first period class received explicit, direct feedback while the second period class received coded feedback. The second, experimental group was given a handout at the beginning of the term that explained the various abbreviations and their meanings (the code). In previous research of a similar nature, Ferris and Roberts (2001) included a third feedback condition: no feedback at all. This option was not utilized as the author only taught the course to two classes and it was thought to be unfair to the students to not receive feedback at all.

The course consisted of seven graded articles which were accompanied by vocabulary lists and related exercises as well as a paragraph-by-paragraph list of questions that summarized the main points and details of each paragraph. Each article/topic was covered in two weekly class sessions. Homework was assigned at the end of the second week, completing the unit. Time was sometimes given in class for writing, but the bulk of the students' writing time was outside of the classroom.

At the beginning of the course, a "perfect" paper was presented to the two classes in order to explain to students what was expected of their writing. This paper was actually prepared by a former lecturer but presented a thorough and comprehensive introduction, body and conclusion. This gave the students a model of what to strive for in their writing and how the lecturer would assess their writing. The grading system consisted of 50% for content, 30% for structure and 20% for grammar and vocabulary.

At the end of the course term, students were given a questionnaire containing ten questions regarding their perceptions of feedback. Their answers were placed along a 6-point Likert scale and then compared to students' grades. A representative sample of the questionnaire will be shown in the following section.

## Results

The class that received explicit feedback had slightly higher average scores for the first five writing assignments than the class that received correctives codes, with equal average grades for the sixth and seventh assignments (see Figure 1). This could indicate that explicit feedback is slightly better suited to students' needs in writing and helps them learn to write better on future writing assignments. The higher scores could also indicate students who are simply better at writing, regardless of feedback. Likewise, the second class with lower average scores could be less motivated students.



Figure 1: Class Average Scores Over Seven Assignments

However, it should be noted that both classes showed some improvement throughout the term, with the first class exhibiting a more erratic, unsteady pattern while the second class had a steadier arc. This could indicate that these first-year students were improving their writing independent of the feedback given. Also, as students progress through their first term, they will generally become more acclimated to the university environment in general and to the learning rather than teaching environment of their courses specifically.

Nor do these results invalidate the use of feedback. In the questionnaire (see Table 1) given to students at the end of the term, students expressed a desire for feedback (“I like receiving feedback on my writing.”) and communicated an understanding of the purpose of feedback (“Feedback helps me improve my writing.”). A mild preference for explicit over coded feedback was expressed in questions 2 and 3 (see Table 1). While the students' responses are self-reporting (a weaker form of data), the students'

slightly improved grades correspond to their stated desires for feedback and reasons for it.

Table 1: Questionnaire Regarding Students' Perception of Feedback

Sample Question	1=Agree, 6=Disagree
1. I like receiving feedback on my writing.	1.91
2. Feedback helps me improve my writing.	1.71
3. Direct feedback is more helpful.	1.67
4. I like coded feedback.	2.46
5. I prefer to correct my own mistakes.	2.38
6. I would prefer no feedback.	5.08

### Conclusions

There are limitations to this study which need to be explained. This study examined first-year university students, who may not have had extensive L2 writing experience. The assignments examined were single draft papers, as opposed to the more conventional three-draft process writing. The class examined was a reading class and assignments were to be reflections of students' comprehension of material read rather than developments of persuasive arguments or independent research.

As the differences between the two classes were slight, but not very significant, a teacher may wonder if there is any real difference in effectiveness in feedback techniques. The corrective code is far easier and quicker for the teacher, who may be marking 50+ papers per assignment. On the other hand, explicit feedback may be preferable simply because the students prefer it and view it as more beneficial than the corrective code. Many students observed in this project stated that explicit feedback taught them correct forms to be used in future assignments. It also represents a greater investment on the teacher's part in students' progress.

Teacher investment in monitoring students' writing may be the key issue. Even if feedback does not always lead to improved performance, students still indicate a strong preference for teacher feedback. Speaking speculatively, this may be due to students wanting attention from teachers. Comparable to children wanting attention from their parents, students may simply want teachers to read and comment on their writing.

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***A Development of Science Activity Packages learning on Ecosystem and Environment for Mathayomsuksa 1. Students***

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**Abstract**

There were three Purposes of the study: 1) to development and identify educational quality of science activity packages learning on “Ecosystem and Environment”. 2) to study learning outcomes; knowledge and science process skills of Mathayomsuksa 1. Students by science activity packages learning on “Ecosystem and Environment” and 3) to study attitude toward environment of Mathayomsuksa 1. Students by science activity packages learning on “Ecosystem and Environment”. The study was accomplished through two stages of operation; 1) development and quality evaluation of science activity packages learning by the experts and conducting a teaching experimentation with a group of three students and nine students successively. 2) performing experimental teaching by employing the science activity packages learning with the sampling coming up with a group in one class (from 10 class of 40 MS.1 (grade 7) of Sriboonyanon school ) for 14 periods (50 minutes a period)for the experimental teaching. The results were as follows:

1. The science activity packages learning were at higher educational quality good level.
2. Learning outcomes of students exposed to instruction utilizing the developed science activity packages learning were found positive: 1) students’ post-test scores on knowledge were significantly higher than their pre-test scores. 2) students’ post-test scores on science process skills were significantly higher than their pre-test scores.
3. Students’ post-test scores on attitude toward Environment designated as “good level”.

Keywords: science activity packages learning, ecosystem and environment for secondary school, attitude toward environment

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## Introduction

At present, environmental problems in Thailand were intensifying, especially the problem of ecological balance, water pollution, air pollution and global warming. [ 1 ] Therefore, teaching science should focus on allowing teachers to create the right learning media. To give students a deep understanding of nature and the environment as well as the relationship between organisms and the environment and ecosystem, as well as the proper use of knowledge to solve such environmental problems. [ 2 ] The teacher was the only person who encourages the student to do the activity as instructed by the teacher. Students will learn by themselves and act. The success achieved will bring a sense of self-esteem that will inspire students to strive for truth, resulting in knowledge, thought skills, scientific process skills, and attitudes to conservation coupled with the environment. [ 3 ] For good instructional media, students should be prepared for science activity packages learning as a means of helping students to learn by themselves. The learning materials were provided in a systematic way to promote students' learning to change their learning behaviors by allowing students to study and follow the series by themselves. It also results in independent learning, interest, not bored in learning. Encourage students to be creative in their development of knowledge, skills, scientific processes and attitudes towards environmental conservation at the same time. [4 ]

So in science teaching for Mathayomsuksa 1. Students, the researcher developed of a science activity packages learning on “Ecosystem and Environment” were divided into 5 units as follows: 1) Ecosystems and environment in the garden of school 2) Ecosystems and environment in the pond of school 3) Ecosystems and environment in the Basketball court of school 4) Drainage ecosystems in densely populated communities 5) Brainstorm, improve the problematic environment. The researcher expects a science activity packages learning on “Ecosystem and Environment” will encourage students to have an understanding of ecosystems and the relationship between ecosystems and the environment. Students will have more scientific process skills and attitudes towards higher environmental conservation. This will result in sustainable solutions to environmental problems in the community. [ 5 ]

Research goals:

- 1) To development and identify educational quality of science activity packages learning on “Ecosystem and Environment”.
- 2) To study learning outcomes; knowledge and science process skills of Mathayomsuksa 1. Students by science activity packages learning on “Ecosystem and Environment”.
- 3) To study attitude toward environment of Mathayomsuksa 1. Students by science activity Packages learning on “Ecosystem and Environment”.

## Methods

The study was accomplished in 7 steps:

- 1) Development of the science activity packages learning on “Ecosystem and Environment” were divided into 5 units: 1) Ecosystems and environment in the garden of school 2) Ecosystems and environment in the pond of school 3) Ecosystems

and environment in the Basketball court of school 4) Drainage ecosystems in densely populated communities 5) Brainstorm, improve the problematic environment.

2) Determination of the quality of the science activity packages learning on “Ecosystem and Environment”, by specialist science teachers. A total of 5 people evaluated five areas: 1) contents, 2) using language and illustrations, 3) learning activities, 4) experimental kit and 5) post-test. Each area was evaluated with one of the following ratings: [ 6 ]

1.00 -1.50 = very low

1.51-2.50 = low

2.51- 3.50 = medium

3.51-4.50 = good

4.51-5.00 = Very good

3) Evaluation of the science activity packages learning by specialist science teachers, by conducting a teaching experimentation with a group of three students and nine students successively, before the real trial.

4) Performance of experimental teaching by inviting a single sample group (sampled from 10 classes of 40 Mathayom 1 (grade 7) students, from Sriboonyanoon school, Nonthaburi, Thailand) for 14 periods (50 minutes a period) of experimental teaching.

5) Evaluation of the students’ knowledge gained from learning in science activity packages learning on “Ecosystem and Environment”.

6) Evaluation of the students’ science process skills gained from learning in science activity packages learning on “Ecosystem and Environment”.

7) Evaluation of attitude toward environment, through learning in science activity packages learning on “Ecosystem and Environment”. Tests to measure attitudes toward environment used three levels as follows: 0 = low, 1 = medium, 2 = good. The evaluation criteria was set at 2.00 (good level) or higher.

## Results

The results of the research were as follows:

1. The quality of the science activity packages learning on “Ecosystem and Environment” were divided into five units: 1) Ecosystems and environment in the garden of school 2) Ecosystems and environment in the pond of school 3) Ecosystems and environment in the Basketball court of school 4) Drainage ecosystems in densely populated communities 5) Brainstorm improve the problematic environment, by a total of five specialist science teachers, who evaluated five areas: 1) contents, 2) using language and illustrations, 3) learning activities, 4) experimental kit and 5) post-test. The details are shown in Table 1.

Table 1: The quality of the science activity packages learning on “Ecosystem and Environment”, evaluated by a total of five specialist science teachers.

<b>Areas</b> <b>Units</b>	contents	using language and illustrations	learning activities	experimental kit	post-test	$\bar{X}$	Levels
Ecosystems and environment in the garden of school	4.60	4.40	4.80	4.40	4.20	4.48	good
Ecosystems and environment in the pond of school	4.80	4.40	4.60	4.60	4.40	4.56	very good
Ecosystems and environment in the Basketball court of school	4.40	4.40	4.40	4.60	4.20	4.40	good
Drainage ecosystems in densely populated communities.	4.40	4.40	4.60	4.40	4.40	4.44	good
Brainstorm improve the problematic environment	4.80	4.40	4.60	4.40	4.40	4.52	very good
<b>Total average</b>	very good 4.60	good 4.40	very good 4.60	good 4.48	Good 4.32	<b>4.48</b>	<b>good</b>

Table 1 Shows the average quality of the science activity packages learning on “Ecosystem and Environment” evaluated by specialist science teachers. Quality was evaluated across five areas: contents, using language and illustrations, learning activities, experimental kit and post-test. The respective averages of each area were as follows: 4.60 very good, 4.40 good, 4.60 very good, 4.48 good, 4.32 good, while the total average across all areas was 4.48 good.

2. Achievement of learning outcomes among students who used the science activity packages learning on “Ecosystem and Environment” was assessed using the average pretest and posttest scores. The details of the results are shown in Table 2.

Table 2: The comparison of the achievement of learning outcomes among students who used the science activity packages learning on “Ecosystem and Environment”, assessed by pre-test and post-test.

average score	n	$\bar{X}$	SD	df	t
pre-test	40	28.14	3.72		
				39	20.25 *
post-test	40	32.48	3.10		

Table 2 Compares the average achievement of knowledge learning outcomes among students who used the science activity packages learning on “Ecosystem and Environment” assessed by pre-test and post-test. The increase in post-test scores on pre-test scores was statistically significant .05.

3. The achievement of learning outcomes with regard to science process skills in the science activity packages learning on “Ecosystem and Environment” was assessed by comparing the average pretest and posttest scores. The details are shown in Table 3.

Table 3: The comparison of the average achievement of learning outcomes, with regard to science process skills, among students in the science activity packages learning on “Ecosystem and Environment”. This was assessed using pre-test and post-test.

average score	n	$\bar{X}$	SD	df	t
pre-test	40	23.25	1.12		
				39	8.36*
post-test	40	29.45	3.25		

Table 3 compares the average student achievement of learning outcomes, with regard to science process skills, the science activity packages learning on “Ecosystem and Environment”, using pre-test and post-test scores. The increase in post-test scores on pre-test scores was statistically significant .05.

4. Evaluation of attitudes toward water resources among students learning in the science activity packages learning on “Ecosystem and Environment”. The details are shown in Table 4.

Table 4: The average post-test score on attitude toward Environment among students learning in the science activity packages learning on “Ecosystem and Environment”.

average score	n	$\bar{X}$	SD	$\mu=2$	df	t
post-test	40	2.87	0.42	2	39	2.12*

Table 4 Shows the average post-test score of on attitude toward Environment among students learning the science activity packages learning on “Ecosystem and Environment”. The average value of 2.87 (good level) was higher than the criteria set at 2.00, and was statistically significant .05.

### **Conclusions**

The results were as follows:

- 1) The science activity packages learning on “Ecosystem and Environment” were of a high educational quality (good level).
- 2) Learning outcome achievement among students exposed to instruction utilizing the developed the science activity packages learning on “Ecosystem and Environment” was found to be positive: 1) Students’ post-test scores on knowledge were significantly higher than their pre-test scores. 2) Students’ post-test scores on science process skills were significantly higher than their pre-test scores.
- 3) Students’ post-test scores on attitude toward environment, among students learning in the science activity packages learning on “Ecosystem and Environment”, were designated as at a “good level.”

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## ***Innovative Methods of Teaching of Radiology to Undergraduate (MBBS) Medical Students***

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### **Abstract**

Main objective was to introduce radiology to medical students in their formative years itself. To start with radiological anatomy and then extend it to applied anatomy. We have tried an innovative and unique method of teaching radiology to undergraduate (MBBS) medical students. 28 medical students in their IX semester were included in this study. The study was divided into two module-Module-I-CHEST X-RAY; Module-2-CARDIAC X-RAY. Each module had specific structures, in the given x-ray, for learning. Each module lasted 6 days, each day devoted to particular structure of the day. Initially the students were given lecture-demonstration of chest x-ray. Later students were taken around for a mini-exhibition of chest x-rays in the same venue. At the end, students were asked to answer a questionnaire based on the topic of the day. On the last day there was interactive session during which correct answers were given, discussion on what mistakes the student had made; any doubts were cleared. On the last day of each module, students were asked to identify structures marked in normal chest x-rays for a practical orientation. A post-survey done at the end of both modules. The students felt that more time should be devoted to radiology and that the study should be extended to other x-rays and other radiological modalities. In the post-test survey 76% and 62% from module-1 and module-2 respectively wrote positive comments encouraging more such studies.

Keywords: Medical (MBBS) Undergraduate-innovative radiology teaching.

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## Introduction

In most medical schools all over the world, anatomy and medical imaging are not taught to a level to prepare undergraduate medical students for future entry into specialist training programmes (1). In the modern day clinical practice the importance of radiology is enormous. An ideal doctor should know how best to utilise radiology during his medical career as well when he starts practicing. Further the current generation of doctors have become very much dependant on radiology for making a diagnosis. Therefore it is imperative that the medical student learns radiology at the undergraduate level itself. A good clinician is one who has adequate radiological knowledge. To make good clinicians radiology should be taught at doctor –formative years itself, i.e in the undergraduate study years itself.

There is no specific teaching method yet available for introducing radiological anatomy (2). At present, during MBBS undergraduate study radiology is almost neglected. In some schools radiology theory classes are held during the first clinical year itself, where student is not in a position to appreciate the value of radiology subject, for he is a novice to even clinical medicine. The ideal time to introduce radiology to medical students would be in the final clinical years where the student has some clinical exposure and he is able to understand and utilise radiology best, not only for improving his examination performance but also to bring out a better clinician in himself (3). The current generation of doctors have become very much dependant on radiology for making a diagnosis. Therefore it is imperative that the medical student learns radiology at the undergraduate level itself.

Most students are motivated for learning basic radiology not only for their examination purpose but also to make them better physicians. We have taken up radiological anatomy in our first phase of study. Chest x-ray was taken up initially as there can be better radio-anatomical correlation.

We have devised an innovative and unique method of teaching radiology to undergraduate medical students. This method was very successful in our initial pilot study period, wherein chest x-ray interpretation was taken up. We hope and trust that this method could be extended to other x-rays like abdomen, limbs, spine, etc as well to other radiological modalities like ultrasonography, CT scan, etc. To the best of my knowledgement no such study has been made in the past in our part of the country. In every study, living anatomy could be combined with applied anatomy.

## Methods

28 medical students in their IX (final year MBBS) semester during their routine radiology posting were included in this study. The hospital ethics committee approval was obtained. The students were briefed about the pilot study. Initially we took the chest x-ray interpretation for our pilotstudy modality. Chest x-ray is one which any doctor would come across in his day-to-day practic/career. The study was divided into two module-Module-I-CHEST X-RAY; Module-2 CARDIAC X-RAY. Each module lasted 6 days (Table-1) with a post-survey done at the end. The schedule for each module is shown below. The details of teaching activities for each module is given in Table-2.

**Table-1 Overview of Two Modules**

	<b>MODULE-1</b>	<b>MODULE-2</b>
DAY 1	Introduction To CXR	Introduction To Cardiac- X-Ray
DAY 2	Bony Cage & Diaphragm	Cardiac Situs, Shape, Size
DAY 3	Lungs	Cardiac Silhouette, Specific Chambers
DAY 4	Pleural Covering	Pericardium
DAY 5	Mediastinum	Great Vessels & Pulmonary Vasculature
DAY6	Practicals, Intreactive Session, Discussion, Post-Test Survey	Practicals, Intreactive Session, Discussion, Post-Test Survey

**Table-2 Details of Teaching Activities in Each Module**

<b>DAYS</b>	<b>MODULE-1</b>	<b>MODULE-2</b>
1	Introduction to x-rays; common views; AP view vs PA views; radiographic density; Good quality CXR; What to look for ?	Common views; AP vs PA view; Cardiac silhouette Good quality Cardiac x-ray; What to look for ?
2	Bones seen in CXR; Radiographic landmarks; Common eg. of altered density, contour	Normal cardiac situs, shape, size. How to measure cardiac size. Common eg of abnormal cardiac situs, shape, size.
3	Lungs-lobes, zones; Broncho-pulmonary segments; Fissures; Hilum. Common eg. of altered density, hilar, fissural positions.	Normal cardiac silhouette, components of it, Normal cardiac chambers. Common eg of abnormal cardiac silhouette, chamber enlargement.
4	Pleural layers; divisions. Costo-phrenic angles. Common eg. of altered density	Normal pericardial layers; divisions; cardio-phrenic angles. Common eg. of altered density
5	Mediastinum definition; divisions; normal major structures in each; Common eg. of altered density, masses.	Great vessels- aorta, PA- normal size, shape. Normal pulmonary vasculature- arterial and venous. Common eg. of altered size, vasculature
6	Discussion, open session, Post test survey	Discussion, open session, Post test survey

This pilot programme had a six-step study for each module.

1. Initially the students were given lecture-demonstration of chest x-ray. The lecture part consisted of power-point presentation of chosen topic for about 45 minutes.

2. The students were taken around for a mini-exhibition of chest x-rays in the same venue. There were ten x-ray view boxes, each having two chest x-rays (x-rays displayed according to the topic covered that day). Totally twenty x-rays were displayed with labels on them. Oral demonstration was also given simultaneously.
3. At the end of the lecture–demonstration students were asked to answer a questionnaire based on the topic of the day. There were ten one- word answer questions specific for each day. Students were asked to answer what they heard, what they saw and what they learnt.
4. Later students were asked to identify structures marked in normal chest x-rays. Each student had to identify 20 structures, in the twenty normal x-rays displayed on view boxes, in twenty minutes.
5. On the last day there was interactive session in which correct answers were given, discussion on what mistakes the student had made, any doubts were cleared.
6. Finally each student was asked to give his candid comments on the feed-back forms given to them.

Total time spent in radiology department by each student everyday of the study was 75 minutes.

Each student had to answer fifty specific questions and ten post-survey general questions in each module.

## **Results**

Of the 28 students posted in the radiology department only 24 regularly attended the pilot study on all the days. Other four students were absent on any one day or other. The students who were present showed much interest attended the class regularly and took active part in interactive session.

In the written test 38% in module-1 and 26% in module wrote all ten questions correctly. The percentage of students who scored between 7-9 was 58 and 50 for module-1 and module-2 respectively (TABLE-3).

In the practicals 22% from module-1 and 18% module-2 scored more than fifteen of twenty correct answers. The percentage of students who scored between 10-15 was 62 and 50 for module-1 and module-2 respectively (TABLE-4).

Overall the results were encouraging. The students felt that more time should be devoted to radiology and that the study should be extended to other x-rays and other radiological modalities.

In the post-test survey 66% and 52% from module-1 and module-2 respectively wrote positive comments encouraging more such studies (TABLE-5).

**Table-3 Marks Obtained in Written Test N=24 X5 for each Module**

marks	Module 1	Module-2
10	46/120 (38% )	32/120 (26% )
7-9	70/120 (58% )	60/120 (50% )
< 7	4/120 (3% )	28/120 (23% )

**Table- 4 Marks Obtained in Practicals N=24 X20 for each Module**

MARK	MODULE-1	MODULE-2
>15	110/480 ( 22 % )	90/480 ( 18 % )
10-15	300/480 ( 62 % )	240/480 ( 50 % )
< 10	70/480 ( 14 % )	150/480 ( 31 % )

**Table-5 Post-test survey**

PARAMETER	MODULE-1	%	MODULE-2	%
TOTAL NO. ANSWERED	23/28	82	26/28	85
ONLY 9 Q ANS.	18/23	78	20/26	76
COMMEN NOT ANS.	5/23	21	6/23	26
NO COMMENTS SUGGE.	6/18	33	6/23	26
POSITIVE COMMEN.	12/18	66	11/23	52

## Conclusion

Radiology can be integrated into medical curriculum in a phased manner, for making them better future clinicians. This is only a qualitative, student perception, feedback study. Since it is teacher-oriented study. His teaching calibre and charisma plays a major role in attracting students. However the response from the students were very encouraging. We plan to introduce subject of radiology-oriented towards basic clinical studies, in a phased manner, in order to make better physicians of tomorrow. Radiology could be integrated into medical curriculum in a phased manner. During the 12 (6 DAYS FOR EACH MODULE) days of this course, students will develop on-going skills through self-evaluation as well as receive informal feedback from assigned radiologists. A pre-test is conducted at the start of the course to gauge the students' abilities in x-ray interpretation. Following the completion of the course, there was a formal post-test covering content discussed in the modules.

## Discussion

The medical student(s) of present generation should continually seek to improve their knowledge and skills by multiple means, be able to self-evaluate and apply new knowledge to his or her practice. Radiology has the ability to provide in vivo 2D, cross sectional, 3D and 4D views of the living body in health and disease. This ability to view living anatomy and pathology, as well as normal physiology and pathophysiology makes radiology images compelling to support and augment undergraduate teaching in anatomy, physiology and pathology. Radiology truly provides a link between undergraduate and postgraduate medical practice, as well as between classical undergraduate disciplines and day to day clinical practice.

The introduction of modern imaging techniques, especially ultrasound, computed tomography (CT) and magnetic resonance imaging (MRI) has enormously expanded the already considerable importance of sectional anatomy. The radiologist, neurologist, internist, chest physician and oncologist, as well as specialists in the various fields of surgery, have had to re-educate themselves in the appearances and relationships of anatomical structures in transverse and vertical section.

Over the last few years there has been a proliferation in the growth, development and utilization of imaging technology. Radiology has become central to confirming clinical diagnosis.

Indeed, precise diagnosis, as well as the detailed planning of therapy (for example, the ablative surgery of extensive cancer) and of interventional radiology, often depends on the cross-sectional anatomical approach. Therefore introducing the subject of radiology to medical students has become a necessity. There are several reports about how each medical college adapts itself to this new challenge.

In 2007, the University of Sydney, Sydney Medical School, reviewed its curriculum, with 23 anatomy and six imaging recommendations for improvement [2]. In 2008, a new integrated anatomy and imaging curriculum was implemented, with total teaching hours changing from 50 to 170 hours.

Key points for the medical imaging component were: improving spatial and 3-dimensional imaging anatomy comprehension, recognition of key imaging anatomy structures and the use of medical imaging in clinical practise. The total medical course runs for four years, the first two based at the University campus, the last two based at clinical sites.

The Cleveland Clinic Lerner College of Medicine of Case Western Reserve University (CCLCM), developed (4) an innovative and unique approach to anatomy education. The challenge was to create a human anatomy course in the context of a problem-based, organ-systems-oriented curriculum stressing small-group, interactive learning, with no lectures and no traditional tests or grades. The available class time for this program in the first year was one morning a week for 1 hour 50 minutes for approximately 30 weeks.

In an integrated method of education, medical students were introduced to radiology in their preclinical years, a study in Pakistan. Their study aimed to document and

compare the current level of teaching duties, teaching methodologies, and teaching rewards among radiologists and residents in private and public teaching hospitals in Karachi, Pakistan (5).

In order to make the radiology study effective I have the following suggestions;

1. Radiological anatomy should be taught during first year itself. This would make the student understand better the cross-sectional anatomy, understand in depth the anatomy of complicated organs/regions. Knowledge of cross sectional anatomy would help the students during his surgical training and clinical examination. A live, in-vivo anatomy by real time images would be a boon to young doctors.
2. Students should be exposed to radio-pathological correlation as often as possible.
3. During clinical posting, radiological interpretation of common diseases should be encouraged, during rounds and class discussions.
4. This method of radiology teaching should be extended to other x-ray studies (like abdomen, spine, barium studies, etc.) and other radiological modalities (ultrasonography, CT scan etc).

The medical student(s) of present generation should continually seek to improve their knowledge and skills by multiple means, be able to self-evaluate and apply new knowledge to his or her practice.

Radiology has the ability to provide in vivo 2D, cross sectional, 3D and 4D views of the living body in health and disease.

This ability to view living anatomy and pathology, as well as normal physiology and pathophysiology makes radiology images compelling to support and augment undergraduate teaching in anatomy, physiology and pathology.

Radiology truly provides a link between undergraduate and postgraduate medical practice, as well as between classical undergraduate disciplines and day to day clinical practice.

In many ways the skills needed to look at diagnostic radiographs are the same ones used for performing physical examinations on patients. For example, careful observation of findings coupled with a systematic review of systems are the same in both. Actually, review of radiographic images could be called an "internal physical examination. The current generation of doctors have become very much dependant on radiology for making a diagnosis. Therefore it is imperative that the medical student learns radiology at the undergraduate level itself. Most students are motivated for learning basic radiology not only for their examination purpose but also to make them better physicians.

In most medical schools all over the world, anatomy and medical imaging are not taught to a level to prepare undergraduate medical students for future entry into specialist training programmes.

There is no specific teaching method yet available for introducing radiological anatomy. Hence our innovative, unique technique is formulated.

Therefore introducing the subject of radiology to medical students has become a necessity. There are several reports about how each medical college adapts itself to this new challenge. The University of Sydney, Sydney Medical School, reviewed its curriculum, with 23 anatomy and six imaging recommendations for improvement. Now a new integrated anatomy and imaging curriculum was implemented, with total teaching hours changing from 50 to 170 hours.

Key points for the medical imaging component were: improving spatial and 3-dimensional imaging anatomy comprehension, recognition of key imaging anatomy structures and the use of medical imaging in clinical practice.

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***The Effectiveness of Child Centered Play Therapy to Improve Joint Attention Skills  
in Children with Autism Spectrum Disorder***

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**Abstract**

Children with Autism Spectrum Disorder (ASD) have difficulties in building and developing social and emotional skills in the same pattern with their peers. Deficit in joint attention is a core problem that presented by children with Autism Spectrum Disorder in DSM IV criteria (APA, 1994). Some expert in the field of ASD have proposed play-base interventions for working with children with ASD, providing support for using play therapy as a method of treatment (Gallo-Lopez & Rubin; Greenspan & Weider; Layne in Balch & Ray, 2015). Child Centered Play Therapy (CCPT) is a therapy that has one of the purpose involve joint attention. The previous research mentioned that CCPT is effective to increase the joint attention skills, so it can increase social interaction skills for children with Autism Spectrum Disorder (ASD). The purpose of this research is to know the effectiveness of CCPT in improving joint attention skills for children with Autism Spectrum Disorder (ASD). This research's design is qualitative method with single case pre-test-post-test design, by measuring the score of joint attention skills, including Initiative Joint Attention (IJA) and Response Joint Attention (RJA) in three years old ASD children before and after CCPT. The CCPT conducted in twenty sessions for four weeks. The result has shown that Child Centered Play Therapy (CCPT) is effective to increase Initiative Joint Attention (IJA) with skor comparison in post-test is higher (77,56) than pres-test (38,12).

Keywords : Autism Spectrum Disorder, Joint Attention, Child Centered Play Therapy.

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## Introduction

Based on DSM 5 (APA, 2013), children with Autism Spectrum Disorder (ASD) has persistent deficits in social interaction, deficits in social communication, and restricted or repetitive patterns of behavior. Director of Mental Health of Indonesia's Ministry of Health, Diah Setia, stated the estimation about the numbers of Indonesian's children that diagnosed with Autism Spectrum Disorder, there are around 112.000 children, in the age range of 5-19 years old. When assumed with autism prevalence 1.68 per 1000 for children under 15 years, where the numbers of children aged 5-19 years in Indonesia reached 66.000.805 people (based on data BPS in 2010), so it is estimated that there are more than 112.000 children with ASD in the range of 5-19 years old (Republika, 9 April 2013).

Deficits in nonverbal communicative behaviors used for social interaction; ranging from poorly integrated-verbal and nonverbal communication, through abnormalities in eye contact and body-language, or deficits in understanding and use of nonverbal communication, to total lack of facial expression or gestures (APA, 2013). Overall, the beginning of the delays in social behavior arises at least in 5 social behavior areas: social stimuli, joint attention, emotion, imitation, and face processing (Dawson & Faja in Nelson & Israel, 2015). The core problem has been shown by the child with ASD is the deficits of joint attention (Kerig, Ludlow & Wenar, 2012). Deficits in joint attention is the core that has been shown by the child with ASD, according to DSM 4 criteria (APA, 1994), including difficulties in sharing interest spontaneously, or doing something with other children.

Joint attention is often discussed as one of the first shape from visible communication (Schertz & Odom in Rudy et al., 2014). Joint attention refers to the child's capacity to coordinate attention with a social partner around an object or event and is observed when the child is showing overt skills such as alternating gaze between an object and a person, pointing, showing or giving, to share or to show (Mundy & Sigman; Scaife & Bruner in Kaale, Smith, & Sponheim, 2012).

Based on the function, joint attention identified into two types: to response and to initiate. The child follows others that try to coordinate the attention to an object or particular events, by showing or changing the gaze, it is known as the response of joint attention (Naai et al. in Jeyabalan, 2012). The second types of joint attention is initiative to seek, to give, to show, and to point something (Rudy et.al, 2014; Kaale, Smith, & Sponheim, 2012). The recent research stated that enhancement of response joint attention closely related with development of social cognition, it is a beginning to build social competences (Schietecatte, Roeyer, & Warreyn; Tomasello in Sealter, Beamis, & Davies, 2016).

Some of the experts who handle children with ASD have suggested to do intervention with a play-based (Gallo-Lopez & Rubin; Greenspan & Weider; Layne in Balch & Ray, 2015). They gave support to the implementation of play therapy as a method of treatment for children with ASD (Balch & Ray, 2015). In the study conducted by Kasari (2006), it has been examined the ability of intervention with joint attention and symbolic play as the target. The result of this research showed that the child who got joint attention intervention significantly show and express more joint attention in joint

attention structured measurement, and the child initiated joint attention in the interaction between mother and child (Kasari, 2006).

In the previous research, conducted by Kaale, Smith, and Spoheim (2012) that focused to the enhancement of initiative from higher order joint attention: showing, pointing, and giving; they gave a chance to the children in initiating joint attention used interesting toys or objects by showing or hiding the toys to stimulate initiative joint attention.

Play is a way of children with autism to communicate (Kerig, Ludlow, & Wenar, 2012). When they are playing, they have an opportunity to form a sense from their experiences and feel the sense of control from their world, which that is important to develop their emotion. Play therapy can be one of treatment method that effective to children with autism spectrum disorder, who have difficulties in verbal communication and deficits in cognitive skills. Through child-centered perspective, children with ASD got a challenge to have a relationship (Ray, Sullivan, & Carlson dalam Balch & Ray, 2015).

Child-Centered Play Therapy (CCPT) is a relationship-based intervention in which ASD children can have the opportunity to feel fully accepted by the counselor, a condition that is mostly not available to them (Ray et al. in Balch & Ray, 2015). Josefi and Ryan (in Salter, Beamish, & Davies, 2016), have specifically identified four purposes areas from Child-Centered Play Therapy. They are joint attention, imitating response, theory of mind, functional and symbolic skills in playing. The role of joint attention in the language development is one of the important reason to make it as an intervention targets in the early development. Engagement in joint attention also predicted is going to make social response in the future (Clifford & Dissanayake, 2009; Gillespie-Lynch et al. dalam Schertz et al., 2013).

There was an intervention research with control randomization that measure joint attention and symbolic play that conducted by Kasari, Stephany, and Paparella (2005) onto 58 children with ASD in aged 3 and 4 years old. The result of the research indicated that the children who got joint attention and symbolic play interventions showed more initiative and response joint attention when the joint attention was measured.

In the development of CCPT, according to Salter, Beamish. & Davies (2016), individual therapy areas using CCPT are under-researched. A comprehensive literature study states that there are only four studies that have been done nowadays.

### **Research Objective**

The aims of this research was to examine the effectiveness of Child Centered Play Therapy (CCPT) in improving joint attention skills for children with Autism Spectrum Disorder (ASD) to have joint attention, so the children can give response and engage in social community.

## Literature Review

Children with autism have many serious problem with social world (Dawson et al., 2004 dalam Kring, Johnson, Davison, & Neale, 2010). Children with autism show severe deficit in the development of gesture communication (Kerig, Ludlow, & Wenar, 2012). Deficit joint attention is core problem in child with autism, this is one of criteria of DSM IV (APA, 1994). There may be a lack of spontaneous seeking to share enjoyment, interests, or achievements with other people (e.g., not showing, bringing, or pointing out objects they find interesting).

However, a broader definition of joint attention is the capacity of a person to use gestures and eye contact to co-ordinate attention with another person in order to share the experience of an interesting object or event (Mundy, Sigman & Kasari dalam Jeyabalan, 2012). There are two types of joint attention (JA), initiating joint attention (IJA) and responding joint attention (RJA). Initiating Joint Attention (IJA) refers to the frequency with which a child uses eye contact, pointing and showing to initiate shared attention to objects or events. Responding to Joint Attention (RJA) refers to the child's skill in following the tester's line of regard and pointing gestures (Mundy, 2003).

This review of the literature suggests that both response to joint attention and initiation of joint attention are central to development in autism spectrum disorder (Lynch, 2013). Pattern of deficit Joint attention emerge as an autism typographic. Child with autism has deficit in shift their gaze, spending less time for joint to other people, and has difficulty to follow someone else gaze atau point (Sigman et al.; Stone, Ousley, Yoder et al. dalam Charman & Wendy, 2006).

Leekam, Lopez, dan Moore (Charman & Wendy, 2006) have some reseach for tested attention function in difficulty through ASD for responding joint attention compered with child with developmental delay, using mental age of their nonverbal ability. Result of this research indicate that ASD have no difficulty to exchange their attention in primary stimulation (object) dan object around them, but they have difficulty to someone else attention request and follow their shift gaze, and move head for give attention for another target around people.

Deficit in initiating and responding joint attention will become a long list of language development because language learning proses can occur through modeling from caregiver that pointed to object or circumstances that involve "joint: between child and cavegiver. Joint attention shaped during child and caregiver share interest in several ways, variative as far as child and caregiver decide shared attention : (1) caregiver gaze to child's focus (2) child gaze to place where caregiver's focus to (3) child shift gaze between place and caregiver to make sure caregiver's focus to (4) child follow caregiver's gaze focus to, (5) child used communicative gesture or vocalism for describe caregiver's attention to place where child focus to.

Play is another modality through children with autism to communicate. However, unlike other child, there are deficit in social and symbolic system in autism playing behavior. For example, when given blocks to play with, a typically developing preschooler might use them to represent a car ('vroom ! vroom!) or create an airport landing strip. The child with autism, in contrast, is more likely to become fixated on

lining the blocks up in a precisely straight row or, if they are striped or brightly coloured, spinning them and staring as they whirl (Kerig, Ludlow, & Wenar, 2012). Play is commonly recognized to have a cognitive organizational function, reflecting differing stages of development (Piaget, Wilson & Ryan dalam Salter, Beamish, & Davies, 2016).

Areas of input have been identified that support broader development in social and emotional domains (Lai, Lombardo, & Baron-Cohen, 2014). Hence, CCPT interventions can provide the child with developmentally appropriate self-paced input across these four pivotal areas using the support of a skilled therapist. However, despite the general growth in CCPT intervention, the area of individual therapy with CCPT and children with autism has been poorly researched. A comprehensive search of the literature revealed that only four CCPT intervention studies have been conducted to date. (Salter, Beamish, & Davies, 2016).

## **Methodology**

### **Subject**

The subject in this research is a boy, who has been diagnosed with Autism Spectrum Disorder (ASD) in 2016. Subject has been diagnosed with autism based on DSM 5, as the result of observations from the team in the therapy center. The observation was a procedure before subject started his therapy. Subject has joined sensory integration therapy, occupational therapy, and speech therapy from 2016 until now. Non-verbal abilities that subject has shown are lack of eye-contact to the objects and to other people, but he still has not shown alternative gaze between object and other people. Subject only can understand simple instructions, such as shake hand and high-five. Subject has never participated in Child Centered Play Therapy anywhere.

### **Research Method**

This research's method is qualitative method with single case-experiment pre-test-post-test design. This research was using that method because this research only has one subject. Independence variable in this research was manipulated systematically only for one subject (Shaughnessy, Zechmeister, & Zechmeister, 2015).

### **Research Design**

The design in this single case-experimental is A-B-A. The first stage in this research is baseline stage (A). Researcher will record and report subject's behavior, including the frequency of target behavior in certain time. After baseline stage, subject will get treatment (B), CCPT intervention. Then, after the intervention, subject will have baseline stage (A) again.

### **Measurement**

Researcher will use Childhood Autism Rating Scale (CARS) in assessment process to identify and to classify subject's condition related with the autism spectrum disorder. Then, Denver Developmental Screening Test (DDST) to identify motoric skills, language and personal-social. After that, researcher will use Early Social

Communication Scale (ESCS) made by Mundy et al. (2003) to measure subject's joint attention ability, as pre-test and post-test.

### Research Procedures

There are three stages in this research, baseline stages, treatment stages, and evaluation stages. Baseline stage (A) is using The Early Social Communication Scales (ESCS). Joint attention observation used ESCS by ESCS rater through technical record by using video.

Treatment stage is using CCPT, intervention strategy based on the combination of CCPT stage and the purpose to initiate subject's joint attention. CCPT will be conducted in 20 sessions, which are five times a week for 4 weeks. CCPT is given individually for 60 minutes/ session/ day by the researchers using the procedures and structures from Mullen and Rickli (2014).

Evaluation stage (A) is using The Early Social Communication Scales (ESCS). Joint attention observation used ESCS by ESCS rater through technical record by using video.

### Results

In the baseline stage, comparison of subject abilities in Joint Attention (JA), Behavior Request (BR), and Social Interaction (SI) as measured by ESCS are as follows:

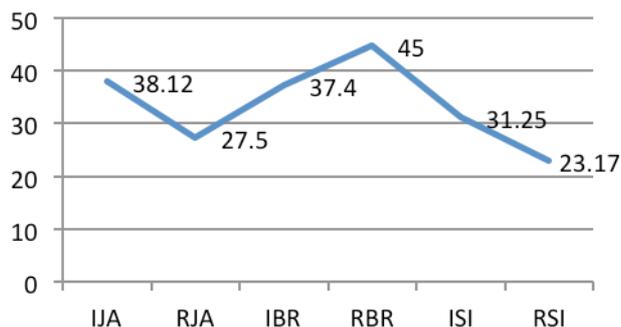
Table 1: ESCS Baseline Measurement Results

No	Abilities	Average results	Average Score	Abilities Comparison
1	IJA	38.12	33.74	> 33.74
2	RJA	27.5	33.74	< 33.74
3	IBR	37.4	33.74	> 33.74
4	RBR	45	33.74	> 33.74
5	ISI	31.25	33.74	< 33.74
6	RSI	23.17	33.74	< 33.74

Information:

- IJA : Initiative Joint Attention
- RJA : Responding Joint Attention
- IBR : Initiative Behavior Request
- RBR : Responding Behavior Request
- ISI : Initiative Social Interaction
- RSI : Responding Social Interaction

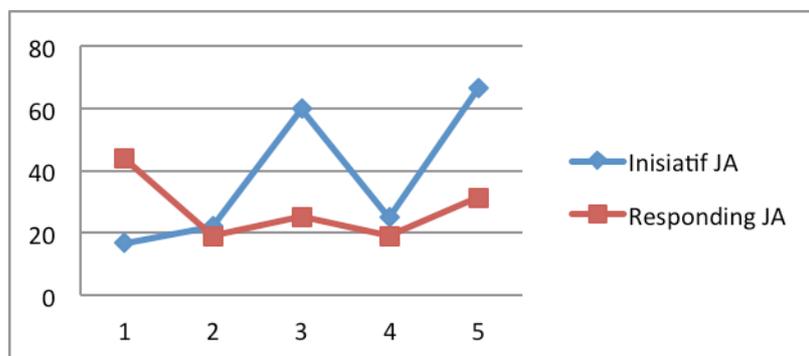
IJA, IBR, and RBR abilities are higher than the average of social communication ability that measured by ESCS, and RJA, ISI, and RSI are lower than the average of social communication ability that measured by ESCS.



Picture 1: Graph of ESCS measurement in pretest.

Table 2: Comparison of IJA and RJA abilities

Day	Joint Attention			
	IJA Score	Mean IJA = 38.12	RJA Score	Median RJA = 27.5
1	16.7	< 38.12	43.75	> 27.5
2	22.2	< 38.12	18.75	< 27.5
3	60	> 38.12	25	< 27.5
4	25	< 38.12	18.75	< 27.5
5	66.7	> 38.12	31.25	> 27.5
<b>Average</b>	<b>38.12</b>		<b>27.5</b>	

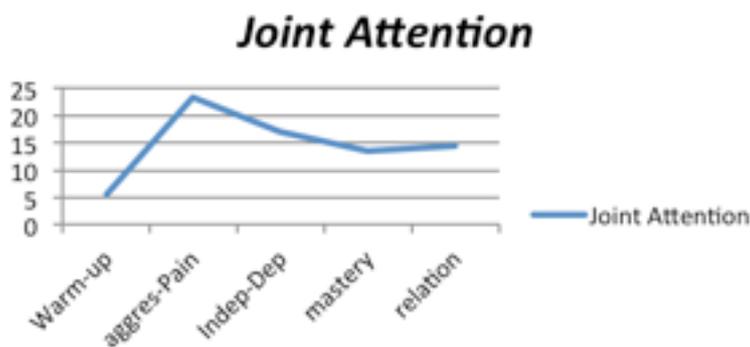


Picture 2: Graph of IJA and RJA abilities comparison.

Table 3: Result of all the CCPT Stages

Warm-up		Aggression and pain		Dependence and independence		Mastery		Relationship building	
Total	Mean	Total	Mean	Total	Mean	Total	Mean	Total	Mean
22	5,5	116	23,2	67	16,75	53	13,25	43	14,3

From the table, can be concluded that Joint Attention capabilities that displayed by subjects during the therapeutic process, do not have a consistent pattern. JA capability increased at the aggression and pain stage, and then decreased until the mastery stage and started to increase slightly in the relationship building stage.



Picture 3: Graph of Joint Attention Capability in CCPT application.

**Evaluation Result (Post-test)**

Evaluation as a post-test that conducted in this research was using *Early Social Community Scales* (ESCS). The result of post-test are as follows:

Comparison of Subject’s ability in *Joint Attention* (JA), *Behavior Request* (BR), and *Social Interaction* (SI).

Table 4: ESCS Measurement Result

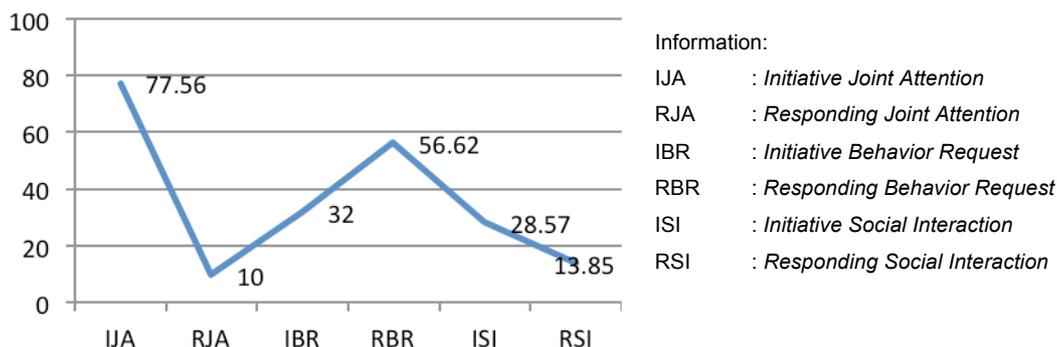
No	Abilities	Average Score	Mean	Ability comparison
1	IJA	77.56	36.4	>36.4
2	RJA	10	36.4	<36.4
3	IBR	32	36.4	<36.4
4	RBR	56.62	36.4	>36.4
5	ISI	28.57	36.4	<36.4
6	RSI	13.85	36.4	<36.4

Information:

- IJA : *Initiative Joint Attention*
- RJA : *Responding Joint Attention*
- IBR : *Initiative Behavior Request*
- RBR : *Responding Behavior Request*
- ISI : *Initiative Social Interaction*
- RSI : *Responding Social Interaction*

From the post-test result is known that IJA and RBR abilities are higher from the average of social communication which is measured through ESCS, it means that subject’s ability to initiate attention with researcher and subject’s ability to response the researcher’s request are higher than the average of other abilities which is measured in ESCS.

RJA, IBR, ISI, and RSI abilities is lower than the average of social communication which measured by ESCS, means that subject’s ability to response attention from the researcher, subject’s ability to initiate in requesting something to the researcher, subject’s ability to initiate in doing social interactions with the researcher, and subject’s ability to response social interactions from the researcher are lower than the average of other abilities which measured by ESCS.

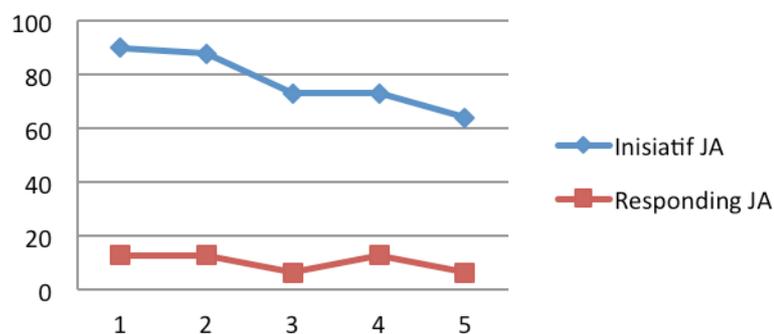


Picture 4: Graph of ESCS result.

The main ability that become the focus in this research is Joint Attention (JA). From the table and the graph is known that subject's ability in initiative joint attention (IJA) is higher than responding joint attention (RJA), *initiative behavior request* (IBR), *responding behavior request* (RBR), *initiative social interaction* (ISI), and *responding social interaction* (RSI). *Response joint attention* (RJA) is the lowest from all of the abilities measured. RJA includes following line regard and following proximal. Comparison in JA ability specifically is subject's IJA ability is higher (Score= 77.56) than RJA ability (score= 10). It means that subject's ability to initiate all of attention with interactive partner (researcher) is higher that the ability to response attention from interactive partner (researcher), as can be seen in this following table and graph:

Table 5: Comparison between IJA and RJA abilities

Day	Joint Attention			
	IJA score	Mean of IJA = 77,56	RJA score	Median of RJA=10
1	90	>77,56	12,5	>10
2	87.8	>77,56	12,5	>10
3	73	< 77,56	6,25	<10
4	73	< 77,56	12,5	>10
5	64	< 77,56	6,25	<10
<b>Average</b>	<b>77,56</b>		<b>10</b>	



Picture 5: Graph of Comparison between IJA and RJA abilities

## Discussion

There are two abilities that can be discussed from the result of this research, these are IJA ability (*Initiative Joint Attention*) of the subject which experienced the highest score increase was the ability to show. The operational definition of the show ability, according to the Early Social Communication Scale (ESCS) is subject is able to wave an object to the researcher and or able to refuse when the researcher tries to retrieve the object held by the subject. During the measurement (post-test) that conducted by giving some tasks in ESCS, show ability which shown by the subject was refused when the researcher tried to take an object held by subject.

The subject will persistently defend the object (toy) that he likes by refusing to give the toy to the researcher, and the toy he likes is a handheld mechanical toy (such as pop-up toy, squeeze toy, and some toys that can move by rotating the play button) and inflatable mechanical toys (like windmill, whistle with mill, and straw whistle). Mechanical toy is the most preferred toys because they can move or be moved and can make sound.

In CCPT, joint attention has been explored as an area where the child can share his interest with the therapist. The ability to show studied by subject while undergoing the treatment, because subjects were given the freedom to determine the game that he wanted to play and the researchers did not give directions, limitations and any instructions about the toy choices.

Besides it, the researcher is involved in the game with subject, so that the subject feels able to share their interests without being hindered by the researcher.

One approach of CCPT is spontaneity. Inside the CCPT the child is the controller of each session, so the structure builder in CCPT is the child. The toys and activities used are child's choice during the therapy session (Mullen & Rickli, 2014).

In the CCPT process, therapist (in this study is the researcher) worked to create an environment where children can feel secure, providing an opportunity to express themselves in the most comfortable way for the child and meeting the personal level of their development (Mullen & Rickli, 2014).

When the child feels secure, the child's secure area can be widened and the child can engage in a wider range of activities and increase interaction with the therapist (Salter.K, Beamish. W, and Davies.M, 2016). Social behavior that is able to be learn by subject was to show his interest to the researcher by preserving a toy that he likes and refuses if being prohibited by the researcher.

The ability to show his desire and decide what does he want to do are the ability that appeared at two years old, that known as *autonomy versus shame and doubt* stage. Two years old children tend to hold when they want and push or throw when they don't want. The children train their desire, their sense for autonomy, they often use "me, mine (Crain.W, 2011).

Beside of Joint Attention (JA) ability, found other things related to the social interaction's ability. These social interaction behaviors include (a) initiative and social interaction responses, and (b) developing attachments with the researcher.

Subject was able to initiate social interaction by inviting the researcher to play 'cilukba', asked the researcher to carry him, sat back to the body of the researcher, held the researcher's hand, forbade the researcher to play balloons by taking the balloon from the researcher's hands. Subjects respond to social interaction requests, such as responding to laughter when tickled, smiling, and chattering (like making a "aaa..hmmm..ei" sound) when the researcher gave comment to the subject's behavior, responding to reciprocal games and responding to pretend games, and the subject has been able to join in playing guitar together.

Subject can develop close relationships with researcher in the form of collaboration while playing with the researcher, imitating the game conducted by researcher, want to do the instructions from the researcher and give the toy to the researcher when asked, ask the researcher to help.

On the other side of this research, also there was a decrease. Subject has decreased ability to follow the line of regard during the post test. Before undergoing the CCPT process, subject was able to respond to the direction of the researcher's hand pointing at various posters in the test room. But when the post-test was given, subject showed more refused to respond by closing his eyes and whining when the researcher pointed to the posters.

This subject's behavior pattern was same as the behavior pattern in the emergence of the ability to show and to maintain in IJA ability. Subject tried to show that he didn't like the researcher's instruction and refused because that instructions didn't match with what he wanted. Subject didn't want to do JA when being directed by the researcher during the session, and this pattern also happened during the post-test. The ability to follow the line of regard which is done during the CCPT session was done spontaneously, so in the post-test subject also did it spontaneously and refused if he has known that he was being directed.

## **Conclusion**

According to the result of the research conducted, found that Child Centered Play Therapy (CCPT) can improve the target, Initiative Joint Attention (IJA), with score comparison in the post-test was higher (77.56) than the score in the pre-test (38.12). IJA target in this research was including eye contact, alternate gaze, to point, to point and eye contact, and to show.

On the other side, this research also found that the Responding Joint Attention (RJA) target decreased. RJA decreased in 17.5, the post-test score was lower than the pre-test score. RJA target in this research was including ability to follow the line of regard and ability to follow the gestures of pointing by the researcher and directing his head and eyes in the right direction in the book.

## **Recommendations**

The next researchers are expected to examine the improvement of verbal communication skills in children with ASD cases using CCPT interventions. The children who get freedom to express will improve their understanding by using language in the more flexible way and reduce formal intonations which is conducted by most of the children with ASD. The next researchers are expected to review the Joint Attention ability in children with ASD for different ages. Autistic children who are more than 3 years old with the same severity have different developmental tasks of both physical, cognitive, and social development.

The clinic that concerned in this research is being recommended to use CCPT as an alternative therapy, because CCPT can effectively improve the ability of Joint Attention and other social interaction abilities in three years old children with ASD.

Parents are advised to give opportunity for the children to have this play therapy further. One of the ability that can be improve through CCPT is eye contact, parents can give time twenty to thirty minutes for each day to do CCPT at home with the kids, at least three months for a cycle. CCPT can continue to be done more than one cycle, according to the development of each child.

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***OBOR: China's Challenge to Western Hegemony in Higher Education and Implications for Malaysia Universities***

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Official Conference Proceedings

**Abstract**

The One Belt One Road initiative is seen as China's challenge to Western hegemony in higher education. The strength of OBOR is that it has no formal institutional structure. Projects are negotiated on a bilateral arrangement between government entities at all levels and also between government and private sectors. OBOR is multifold, encompassing economic, political and social aspects of cooperation. As such, a multi-pronged approach is needed to reap the full benefits of education cooperation within the framework agreement on OBOR. The promotion of educational exchanges will be further deepened with the opening of Chinese universities branch campuses or provision of scholarships to international students. The deepening of educational exchanges between China and participating countries can be viewed as a threat to Western universities interests in Asia despite China's assurance that it adopted the attitude of no challenges to the existing world system. This paper covers the efforts of China to internationalize its educational system, with an emphasis on collaboration with Malaysian universities. It concludes that Malaysian universities have much to gain from the OBOR initiative, not only in terms of academic exchanges, investments, co-operations in projects but also in the influence of Confucian value systems.

Keywords: OBOR, Western hegemony, China, world-class universities

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## Introduction

The Chinese government introduced Project 21-1 in 1993 to elevate the educational and scientific levels of 100 universities to global standards. These universities were provided with extra financial support with the investment of approximately USD2.2 billion between 1996 and 2000 to enhance their competitiveness in the world. The Chinese government started another project in 1998 to accelerate the building of a few famous universities to be world-class universities. “Project 98-5” was introduced by President Jiang Zemin on May 4, 1998. A total of 34 universities were selected for Project 98-5 and they were given greater autonomy, including new levels of academic freedom and quality control processes. In November 2015, China State Council released a statement to “Coordinate Development of World Class Universities and First Class Disciplines Construction Overall Plan” to improve the status and international competitiveness of China’s universities. This statement set the direction for China to develop six top universities in the world by 2020 and fifteen top universities by 2030 under the “World Class 2.0” project. This latest project is a continuation of Project 98-5 and Project 21-1.

The One Belt One Road initiative is seen as China’s challenge to Western hegemony in higher education. The strength of OBOR is that it has no formal institutional structure. Projects are negotiated on a bilateral arrangement between different levels of government as well as both state and private sector players. OBOR is multifold, encompassing economic, political and social aspects of cooperation. As such, a multi-pronged approach is needed to reap the full benefits of education cooperation within the framework agreement on OBOR. The combination of foreign investments in setting up overseas branch campuses together with academic partnerships will lead to a broader level of bilateral relations between China and its partners, spanning academic, research, and cultural ties.

Under its “One Belt, One Road” initiative, China seeks closer student and faculty exchanges with countries along the proposed route. Another strategy which China has adopted is establishing educational institutions overseas to promote its programme abroad. The establishments of Xiamen University’s campus in Malaysia and Soochow University campus in Laos are examples of China’s universities growing presence overseas.

The establishment of the Global Business College of Australia by the Huashang Education Group of China is an attempt to capture a share of the large Chinese student population in Australia. Federal government data showed that there were 148,689 Chinese students enrolled in Australia in February, 2017. Chinese students constitute almost 30% of total foreign students studying in Australia. The Huasheng Group also owns the Guangdong University of Finance and Economics, a private institution based in Foshan, Guangdong.

Ningbo University opened a branch campus in Florence, Italy, in 2012. However, the campus does not have the Italian ministerial authorization as official campus is regulated under Italian higher education rules. Despite this, Italy is an important country as it is located strategically at the intersection of the Silk Road Economic Belt and the Maritime Economic Belt.

Another Chinese university, Shanghai Tonji University, has also established a Sino-Italian campus in Florence and is cooperating with famous universities such as Politecnico di Milano, Politecnico di Torino, University of Bologna, Venice International University, University of Florence, and University of Roma La Sapienza. Other Chinese universities which have expanded their operations overseas include Zhejiang University's establishment of a Joint Lab for Applied Data Science with Imperial College London, Tsinghua University partnering University of Washington to create a Global Innovation Exchange research institute in Seattle, Beijing Language and Culture University campus in Tokyo and Tanjin University of Traditional Chinese Medicine campus in Kobe.

### **Massification of Higher Education**

The massification of higher education in Asia has generated high unemployment rates among universities graduates. The quest for world class university status has led to a stratification of universities. Many critics have argued that universities have forgotten the purpose of higher education in their quest for world class status and that they lack the soul and humanistic value.

World class universities call for world class management. Although China's universities may have adequate education funding, they are in need of first class management who understand advanced management concepts and systems. Universities leaders have to struggle between pledging allegiance to the Chinese Communist Party and promoting academic freedom and free speech which may at times be critical of government policies. The degree of transformations in the education landscape varies among countries in Asia due to their differing economic and social developments.

China's education reforms have transformed the higher education system in China from one that emphasises elitism to one that promotes mass education. However, this process also results in higher unemployment among university graduates (Bradenburg & Zhu, 2007; Bickenburg & Liu, 2011). Many Chinese students prefer an overseas degree, especially from an English speaking country, as they believe there may be better employment opportunities for them. The Chinese Ministry of Education reported that over 523,700 Chinese students went overseas to study in 2015. Chinese students accounted for 31 percent of international students in the United States and 20 percent in the United Kingdom in 2015. In Australia, the figure was 27 percent in the same year.

Inbound students into China amounted to 212,836 in 2015. Of this figure, 131,227 were studying undergraduate degrees and 53,562 were pursuing postgraduate degrees. The interests in Chinese education signal the growing internationalisation of China's higher education. A number of universities from Europe, United States, Australia and Singapore have established branch campuses and research institutes in China. For example, University of Nottingham set up a foreign campus in Ningbo with cooperation from Zhejiang Wanli Education Group. New York University has a Shanghai campus in partnership with East China Normal University. Liverpool University is cooperating with Xian Jiatong University while Duke University is collaborating with Wuhan University. For these collaborations to be sustainable, it is

important that the partners understand the intended benefits and outcomes, and recognizing that the each partner brings different resources to the joint venture.

### **Influence of Confucianism in Higher Education**

The teachings and value systems of Confucianism is the key to China's challenge to Western hegemonism in higher education. Confucianism emphasises an orderly society and stresses loyalty, duty and public service (Figure 1).

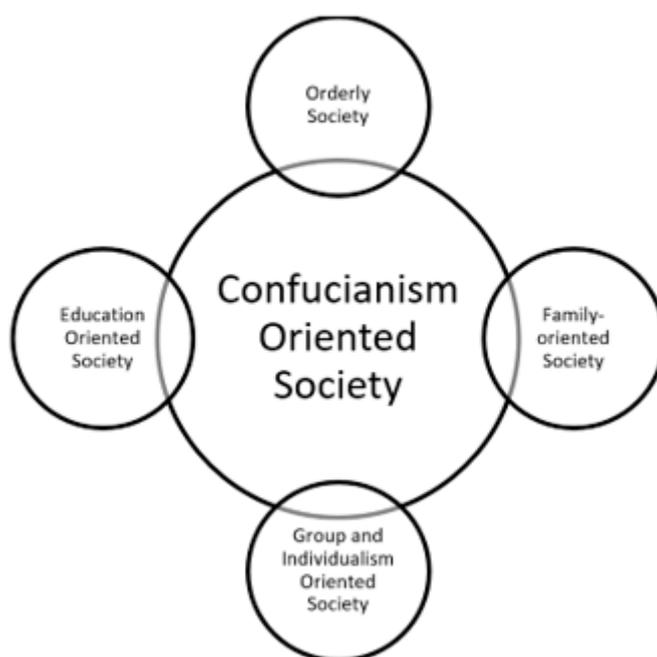


Figure 1: Confucianism Oriented Society

To achieve an orderly society, one needs to be aware of his position in the society. Confucius believed that an orderly society could be achieved by example. Leaders will have to lead by example and be role models for others to follow. A key element of Confucius teaching stresses on the goodness of human nature and it is the leaders' fault that made his people bad.

Confucius also stressed the importance of filial piety to respect one's parents, superiors and siblings. Being honest and caring for others is one way to bring order to society. This will lead to harmonious relationships among group members. Society could have a stable and enduring social order if people conform to proper standards of behaviour or social mores.

To achieve an education oriented society, Confucius maintained that education should be made available to all, irrespective of social class. With good knowledge and education, one is able to achieve self-cultivation first. Only when character is cultivated can harmony in family exists. Only when families are harmonised, can a state be regulated orderly. The role of education is important to produce good and capable men to serve in government.

The role of higher education in projecting China's soft power is receiving a lot of attention as the country raises its economic and political clout. Values espoused by Confucius such as humility, trust, honesty, respect and openness have impacted Chinese society and gained the attention of Westerners. These values are reflected in the behaviours of students as well as staff and leaders of higher education institutions. The Confucian moral philosophy, primarily the Analects, provide a guide to managers to regulate their own behaviour and to maintain a high moral and ethical standard. Self-regulation is a continuous process towards self-cultivation and refinement of one's character.

Confucius would explain to his students how virtuous actions bring success and happiness to one's life. Self-control of desire is a key virtue and through recognizing the values of the virtue, one can improve the quality of one's life. Wisdom for Confucius includes goodness, friendship, self-control and propriety. The people we associate with will have a significant impact on our personal development.

The six Confucian virtues that contribute to self-regulation include benevolence (*ren*), righteousness (*yi*), ritual propriety (*li*), wisdom (*zhi*), trustworthiness (*xin*), and filial piety (*xiao*).

Globalisation has transformed the learning environment of China's higher education institutions. As Chinese universities seek to compete with Western institutions, they have to adopt the best practices according to international standards. The new Confucian model for Chinese universities incorporates Western modernization and characterized by improving quality of teaching, research and institutional governance.

### **Potential benefits to Malaysian universities**

Malaysian universities can benefit from the internationalisation of Chinese universities. The competition for admission into Chinese universities is so high that many families decide to send their children overseas for education. Culturally, Malaysia with its diverse ethnicity, is more attractive to Chinese students than some Western countries. The proximity of Malaysia compared to the United States or Australia is another advantage. In addition, there are at least 70 Malaysian universities and universities colleges recognised by China's Ministry of Education. The affordability of a Malaysian education as compared to a United States or Australian education is another incentive for Chinese parents.

Many Chinese universities are willing to collaborate with Malaysian universities in academic mobility through student and faculty exchange, cooperative program offerings and research projects. The Chinese Ministry of Education recognises the need to reform curricula, teaching methods and assessment tools by incorporating international approaches to teaching.

The Malaysia government could consider supporting a small number of private universities that have the potential to become world-class universities. Smaller institutions could be encouraged to merge and transform into larger universities with more abundant resources. While there may be challenges in assimilating the cultures of different institutions in a merger exercise, there are also opportunities in creating a new culture of excellence in a newly merged institution. For example, in China, the

merger of Beijing Medical University with Beijing University in 2000 and the merger of four universities to create Zhejiang University in 1998, have created stronger institutions with teaching and research capabilities.

Malaysia universities could ride the OBOR wave and develop a few world class private universities through closer collaboration with their Chinese counterparts. Collaboration in “talent”, faculty and staff mobility will encourage more knowledge exchanges between the institutions. There could also be more recognition of course credits taken by students in partner institutions. International collaboration of research projects is not without challenges. Researchers have to overcome the cultural differences and bureaucracies of the participants in the projects. However, international collaboration of research projects propels the researchers into a much larger global community. To achieve world class status, universities have to successfully encourage their academic staff to maximise their research capabilities. Globalisation brings the academic community closer through collaboration of research activities. At the same time, it also encourages institutions to be more competitive and develop the aspirations to become world class universities.

Malaysian universities have moved up in the global ranking of world’s top universities. In the latest 2018 ranking by QS World University, five Malaysian universities are among the top 300 best universities. This is an encouraging sign as it signifies the improvements made by Malaysian universities in terms of academic and employer reputation as well as research outputs (Table 1).

Table 1: QS World University Rankings 2018

<b>2018 Ranking</b>	<b>Institution Name</b>
114	Universiti Malaya
229	Universiti Putra Malaysia
230	Universiti Kebangsaan Malaysia
253	Universiti Teknologi Malaysia
264	Universiti Sains Malaysia

Visionary leadership is critical in creating world class universities. The environment has to foster creativity, innovation and academic freedom. University leaders need to have a strong strategic vision and practice a philosophy of excellence. Effective leadership is important in setting strategic goals and policies in higher education institutions (Bennette et al., 2003, Jonese et al. 2014). In today’s competitive environment, university leaders must also possess good commercial sense to address the demands of various stakeholders and be financially prudent in the management of their institutions. They have to reassess the 4Ps of higher education: policies, programmes, pedagogy and partnerships. With globalisation and increased student and staff mobility, education policies need to be reviewed for universities to overcome the various challenges they face.

Globalisation has also created awareness for Malaysian and Chinese universities to benchmark their best practices with each other partners. These include areas of teaching pedagogy, course curriculum, quality assurance, quality of faculty, facilities and academic support. While they collaborate on one hand, they also compete on the other. Chinese universities are competing with Malaysian universities to attract

international students. Governments have realised that globalisation of education creates national wealth and attract foreign exchange.

The trend of tertiary-level international students worldwide is expected to continue to increase over the next few years as student mobility remains strong. Data from the UNESCO Institute for Statistics showed the number of international students increased from 2.8 million in 2005 to 4.1 million in 2013. As at end 2014, Malaysia hosted around 135,000 international students studying in higher education institutions as well as international high schools. The most popular countries of origin were Bangladesh, China, Indonesia, Nigeria, India, Pakistan and Yemen. With the establishment of EduCity Iskandar and Kuala Lumpur Education City, together with the various education hubs in Nilai and Cyberjaya, Malaysia is well poised to be a strong competitor to Singapore and Taiwan. International universities such as Monash University, Curtin University, Swinburne University, University of Nottingham, Herriot-Watt University, University of Reading, Newcastle University, Manipal International University, Raffles University and Xiamen University, have opened branch campuses in the country.

The Malaysian government hopes to place at least one Malaysian university in the world's top 50 by 2020. The highest ranked Malaysian university, Universiti Malaya, is ranked 114 in the 2018 QS World University Ranking. China produced the most number of rising stars among universities in Asia with three universities in the top 50. Tsinghua University, Peking University and Fudan University were ranked 25, 38 and 40 respectively by QS in its 2018 Ranking.

### **Resources for building world class status**

The management styles of university leaders have been widely researched. Leadership styles influence employees' well-being (Nyberg et al., 2011; Tafvelin et al., 2011) and job satisfaction, organisational commitment and turnover intention (Aydin et al., 2013). University leaders, therefore, have to explore the effects of their leadership styles and the organisational outcomes. World class universities are cradles for nurturing creativity and innovation. University leaders need to recognise the professional development needs of professors through research projects and not overburden them with administrative or teaching tasks. They have to understand that the purpose of educational development is to help create learning environments that enhance educational quality.

For private universities to achieve world class status, they must have abundant financial resources to fund their operational expenditures as well as research projects. The institutions have to be successful in their fund-raising exercises which could come from endowments and government research funding. Faculty members of private universities often have to compete for government research funding to supplement the resources provided by the universities. Private universities have more difficulties attracting professors with PhDs as they may lack the resources to support professors' research activities and the environment to champion academic freedom.

Technology is a game changer. The use of technology in e-learning addresses some concerns related to budget cuts in universities. E-learning is shifting the paradigm of higher education and the way we understand the system. The technological resources

must be aligned with the university goals if universities wish to maximise the potential of technology. The higher education environment is characterised by growing Volatility, Uncertainty, Complexity and Ambiguity (VUCA). Universities are facing challenges on how to deal with changes and disruptions. New technologies can disrupt the manner of traditional course delivery and make teaching more challenging to instructors who have to learn to deliver content online. A gradual adoption of blended program offerings may reduce the disruptions of delivery modes and lessen the negative learning outcomes which may result from a rapid implementation of fully online delivery of programs. Blended learning allows students to reduce trips to campus while still have access to face-to-face instructions. Institutions can also use classroom space more effectively and to reduce costs.

In the 2016 Malaysia-China Digital Economy Forum, Malaysian Prime Minister Datuk Seri Najib Tun Razak encouraged Malaysian companies to learn from China's advancement in internet technology. Mobile learning is gaining popularity in China with education providers such as Education First and Huijiang investing heavily in mobile applications for teaching. The latter provides over 20,000 courses to over 110 million users, and in cooperation with over 500 schools and organizations. Online education is unlikely to totally replace traditional teaching methods but will be mutually complementary.

University lecturers need to be equipped with the 4Cs of 21<sup>st</sup> century learning skills. At the same time, they have to be able to impart the 4Cs to their students. The essential elements are *Critical Thinking*, *Creativity*, *Collaboration*, and *Communication* (Figure 2). They have to be lifelong learners themselves and be provided with opportunities and support from universities to upgrade their professional development. Enhancing lecturers' *critical thinking* include developing their *systemic thinking* skills to gain a better understanding of challenging situations and developing effective interventions for transforming them through collaboration and open communication with colleagues. Systematic thinking involves combining *analytical thinking* with *synthetical thinking*. *Analytical thinking* involves thinking about the parts or elements of a situation while *synthetical thinking* refers to thinking about how these parts or elements work together. Lecturers are role models to students and they have to exemplify the collaborative learning styles to their students who in turn are able to demonstrate their ability to collaborate and make their own contributions.



Figure 2: 21<sup>st</sup> Century learning skills

Systemic thinking has a powerful influence on organisational improvement. It offers strategies that can help in restructuring the way we think about organisational change. Systemic thinking focuses on the interconnectedness of all things and sees change as a natural process. Fullan (1993) noted that the problem in public education is not resistance to change, but the presence of too much innovations and the fragmented nature of these innovations. System thinking in education encourages a coordinated change effort in the entire education system: curriculum development, instructions, assessment and professional development.

In systemic curriculum evaluation plan, universities should aim to design high quality curriculum which respond to the needs of students and which reflect the best educational practices. Very often, there are gaps between the written curriculum and what is actually taught by teachers in the classrooms. The implementation monitoring process should give attention to learners' outcomes to determine the curriculum effectiveness. Students need to develop the mindset that promotes logical reasoning and problem solving instead of pure memorisation of text materials. In the context of internationalisation, universities have to develop curriculum with intercultural perspectives to prepare students in an increasingly interdependent world (Francis, 1993; Chichon & Scarino, 2007).

Non-classroom learning is as important as classroom learning. Student learning is not bounded by the classroom but by the whole institutional environment which is referred to as the "hidden curriculum" (Palmer, 1981). The hidden curriculum encompasses the way the institution functions, the social engagement and the students' experience within the university environment (Figure 3).

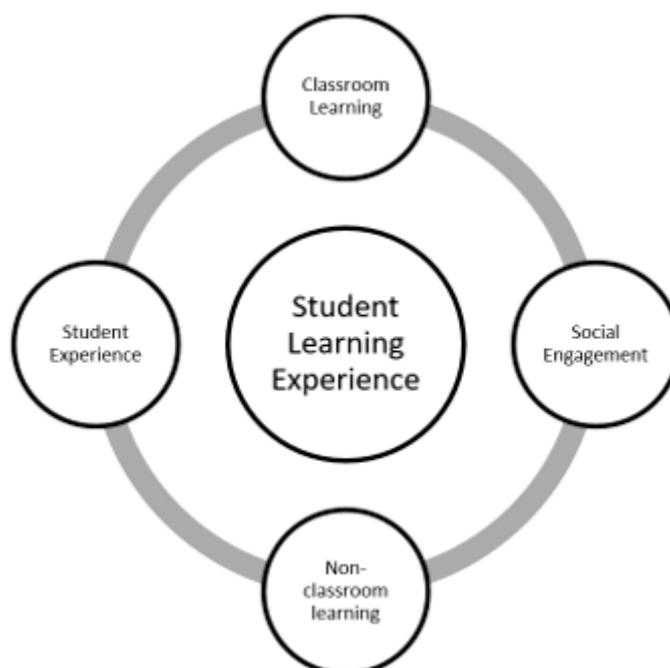


Figure 3: Student Learning Experience

Globalisation pushes universities into a borderless network. Globalisation leads to real and virtual mobility of people and also leads to tension between national and international forces (van Damme, 2001). Marginson (2004) noted that the development of e-distance learning is driven by technological changes rather than educational changes or changes in government policies. Technology has facilitated the offering of distance learning courses across borders. In Malaysia, 20 public universities have launched more than 60 Massive Open Online Courses (MOCCs) for free and are open to students and members of the public. The hegemony of higher education by Western institutions is being challenged (Daniel, Kanwar & Uvalic-Trumbic, 2006), prompting Western universities to look at new partnership strategies. Liyanagunawardena et al. (2013) defined MOCCs as online courses which have a wide appeal to people interested in learning about specific subjects. These courses are guided by facilitators who are experts in the various subjects offered. McAuley et al. (2010) and Waard et al. (2011) defined these courses as both open and online and may be free.

The MOCC courses in Malaysia cover a wide range of topics and are free on OpenLearning.com. They are delivered in Malay language, English or Arabic, depending on the subject. To coordinate the implementation of online learning for public universities, the Malaysian government set up the Malaysian e-Learning Council for Public Universities (MEIPTA). With MOCCs, Malaysia hopes to increase the quality and accessibility of higher education to the larger population. The real value of universities will be realised when they are able to build creative solutions. Leveraging on big data networks through multi-communication channels, universities are in a position to facilitate a deeper understanding of human needs and promote social capital.

Malaysian universities could partner with top Chinese universities to develop MOCC courses in multiple languages to overcome cultural barriers in various ASEAN countries. MOOC movement needs to be aware of the value of cultural and linguistic diversity and not focusing on excessive profits if they wish to widen their access to a larger learner base. The increasing academic link between China and Malaysia in the form of joint programs will become part of a broader pattern of collaboration in the OBOR initiative. Figure 4 illustrates the elements of a world class university in 4 broad categories: Talent; Favourable Governance; Resources; and Openness.

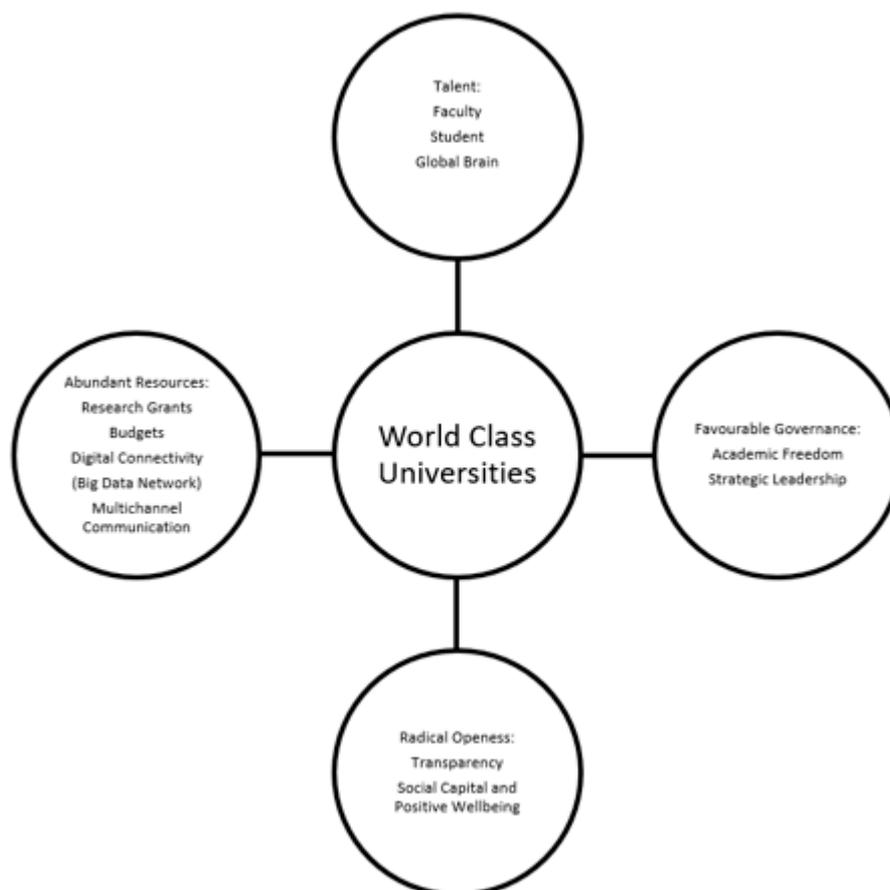


Figure 4: World Class University

With increased Chinese investments into Malaysia, there is a possibility that other Chinese universities may follow Xiamen University's decision to open a branch campus in Malaysia. The massive residential and commercial development projects by Chinese conglomerates will attract more Chinese nationals into the country. The RM100 billion Forest City Project by Country Garden in Johor and the proposed RM160 – RM200 billion Bandar Malaysia Project in Kuala Lumpur are just examples of China's interests in property projects in the country. Any future move by Chinese universities to establish branch campuses in Malaysia is likely to be a foreign-policy move rather than based on pure economic reasons as most Chinese universities received their funding from the state government. Due to the relative similarities of Chinese and Malaysian cultures as compared to Western culture, Chinese students may find Malaysia a more hospitable destination for pursuing their higher education. Western academics often stereotype Asian students as lacking critical thinking and obeying authority (Kumaravadivelu, 2003; Ha, 2006). As such, many Chinese students may choose to study in Malaysia.

## Conclusion

The OBOR initiative brings many opportunities for Chinese universities to expand overseas. Universities in Malaysia and the rest of South East Asia could tap into the myriad of opportunities by collaborating with their Chinese counterparts. It is important to consider the geopolitical implications of OBOR apart from the higher education implication. China is using OBR as a foreign policy tool to strengthen its influence and cooperation with the international community. International faculty has to be realistic in their expectations about new education settings and challenges that are frustrating due to different cultural forms. On the other hand, international collaboration brings about knowledge transfers, intellectual friendships and management improvements. The pursuit for excellence requires universities to adopt multidimensional approaches to teaching and research which include localisation of foreign programs to suit the needs of the local education system.

Globalisation also aggravates the brain drain situation of a country when students decide to stay in the host countries instead of going home and contributing the knowledge gained to their own countries. The influx of Asian students into the United States, United Kingdom and Australia also raises xenophobic feelings towards foreigners. Malaysia may benefit from this prejudice against students from Muslim countries as the Western world grapples with fear of terrorist threats. At the same time, Malaysia continues to be an attractive destination for students from Asia due to the affordability and quality of its education system. With the increase in trade and investments between Malaysia and China, both countries have formed a special relationship in the areas of educational and cultural exchanges. The interaction of Malaysian students with Chinese students opens up opportunities in research collaboration as well as future business and cultural relationships when the Chinese students return home to their country.

Malaysia continues to attract foreign direct investments in education with the establishments of foreign branch campuses. While many Malaysian private universities aspire to achieve world class status, they may be far from their goals without some participation or collaboration from other high ranking universities or the government. While China offers many examples of developing world class universities, its universities are mainly publicly funded and receive special support from the central government as evidenced in the Project 985 and Project 211 universities.

China is using OBOR as a soft diplomatic tool to strengthen its influence with countries along the Belt and Road region. Economic development is also achieved by boosting exports, enhancing access to natural resources and supporting local industries. This strategy complements the formal political and trade relationships between China and other countries. Malaysia is an important node for China along the OBOR route. While most discussions of collaborative projects are infrastructure related such as ports and railroads, collaboration in higher education in the form of investments to date have been limited to the establishment of Xiamen University branch campus. Malaysia universities should consider forming formal strategic partnerships with Chinese universities to nurture research and innovation. Both parties could benefit from the sharing of advanced technology, knowledge and experience.

For Malaysian private universities to become world-class universities, they have to implement a number of strategies including investing in quality teaching and research faculty, offering quality and industry relevant programs, recruiting qualified students, promoting academic freedom, improving corporate governance and attracting inspiring university leaders. Perhaps the best model for Malaysia private universities is a private-public partnership with government budget funding for research and consultancy. Policy makers have to decide to what extent they will invest in a small number of private universities to make them world class. It is important for Malaysia to develop a few world class private universities which are at the forefront of science and technology research. The outreach of a world class university to international faculty and students will position Malaysia as an education hub. Smaller private universities could also explore the possibility of merger with other institutions to become more formidable as seen in the formation of Zhejiang University. Mergers of universities will enhance the breadth and depth of academic disciplines, develop critical mass of researchers, and improve efficiencies in non-academic areas. Alongside growing competition in the higher education sector, there is also a growing tendency of cooperation between universities. There is much to gain for Malaysian private universities to collaborate with their Chinese counterparts.

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*A Development of Science Laboratories on “The Basic of Wastewater Management for Students Living Along Saen Saeb Canal”*

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**Abstract**

There were four purposes of the study: 1) to develop and identify the educational qualities of science laboratories “The Basic of wastewater management for students living along Saen Saeb canal”. 2) to study learning outcomes with regard to the knowledge of Mathayom 1(grad 7) in science laboratories 3) to study the Mathayom 1 students’ attitudes toward water resources in the science laboratories and 4) to study the Mathayom 1 students’ toward satisfaction in the science laboratories.

The study was accomplished through two stages of operation: 1) The development and quality evaluation of science laboratories by teaching experimentation with a group of three students and nine students successively, and 2) the performance of experimental teaching by inviting a single sample group (sampled from 4 classes of 40 Mathayom 1 students, from Kasemphitaya school, Bangkok, Thailand) for 16 periods (50 minutes a period) of experimental teaching.

The results were as follows:

1) The science laboratories were of a high educational quality (very good level). 2) Learning outcomes of students exposed to instruction utilizing the developed science laboratories were found to be positive: the students’ post-test scores on knowledge were significantly higher than their pre-test scores, 3) Students’ post-test scores with regard to attitude toward water resources were designated as at a “good level”. 4) The students’ toward satisfaction in the science laboratories were of a highly level.

Keywords: science laboratories, attitude toward water resources, basic of wastewater management for students

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## Introduction

The Saen Saeb canal was built by the order of King Rama III during the conflict between Siam and Annam about Cambodia to establish a water transport for soldiers and weapons to Cambodia. The construction started in 1837 and was completed three years after. [1] Saen Saeb canal was once filled with an abundance of lotus, King Rama IV in his 4th reign (1851-1868) built Sra Pathum Palace (Lotus Pond Palace) in Siam District. The Saen Saep starts from Mahanak canal or Khlong Mahanak around Mahakan Fortress in Bangkok, and terminates into the Bang Pa Kong River in Chachoengsao province. [1]

In the past, canals in Bangkok had an important role in the boat transport, commerce, agriculture and domestic consumption, and there were many communities along the canals. At present, the current social and economic situations are changing as an urban society is expanding from inside to outside. In the metropolitan area, buildings are congested along the canals where have become residential and business areas as well as are a key route for the water transportation. Such rapid changes have made the water quality in any canal including Saen Saeb canal poor. [2]

There are various factors affecting the water quality in Saen Saeb canal and the following factors contribute to the problems: 1) excessive organic inputs from tributaries, households, businesses and industries, point- and non-point sources; 2) too much sediments in the water and at the bottom of the canal which generate a high oxygen demand for the water; 3) resuspended sediments due to the shallow depth and turbulence from the boats; and 4) waves from the boats which are not dissipated due to the fast speed of boats and the vertical nature of the walls; as a result the waves last for excessively long time and exacerbate the sediment resuspension. [3]

The water quality data from research found that the amount of dissolved oxygen (Dissolved Oxygen: DO) is between 0.3 to 3.1 milligrams per liter Which is somewhat lower than the standard four types of surface water, which was set to 2 milligrams per liter. While the impurities in the form of BOD (BOD: Biochemical Oxygen Demand), the average is between 4.3 to 15.3 milligrams per liter. Which is higher than the standard four types of surface water, which is equal to 4 mg per liter for the polluted water. [4] Caused by the buildings along the canal, very keen to have a proper waste water management systems. Some buildings are equipped with septic - water seepage. Which is sufficient to treat wastewater to meet regulatory standards related to the sewage plant of some kind. As well as some of the measures to control the discharge of effluent from land. Gasoline service station. The community wastewater treatment system to discharge wastewater into public waterways. If the people do not realize the importance of the canal was not then aware of the development and rehabilitation. In the coming years will be very keen to ditch the crisis. Affect the quality of water that can not be utilized. [5]

Therefore, the two ways to solve the problems and reduce the impact are: 1) to encourage all office buildings in Bangkok to effectively operate sewage system in the entire area; and 2) to educate people, residents and students about maintaining the water quality in the canal, generating enthusiasm for the long-term canal conservation. [6]

So in science teaching for students living along Saen Saeb canal, the researcher developed of the science laboratories on “The Basic of wastewater management for students living along Saen Saeb canal”, were divided into 6 laboratories directions: 1) Basic Investigation of Water Quality, 2) How to make a home grease trap, 3) How to make the water clear by sedimentation, 4) How to make a simple water filter, 5) Biological wastewater treatment and 6) Let's find out how to improve water quality. The researcher expects the science laboratories on “The Basic of wastewater management for students living along Saen Saeb canal” will encourage students to have an understanding of the basic of wastewater management. Students will have more attitudes towards water resources higher environmental conservation. This will result in sustainable solutions to environmental problems in the community. [ 7 ]

### **Research goals:**

1. to develop and identify the educational qualities of science laboratories “The Basic of wastewater management for students living along Saen Saeb canal”.
2. to study learning outcomes with regard to the knowledge of Mathayom 1 (grad 7) in science laboratories.
3. to study the Mathayom 1 students’ attitudes toward water resources in the science laboratories.
4. to study the Mathayom 1 students’ toward satisfaction in the science laboratories.

### **Methods**

The study was accomplished in 8 steps:

1) Development of the science laboratories on “The Basic of wastewater management for students living along Saen Saeb canal” into 6 laboratory directions : 1) Basic Investigation of Water Quality, 2) How to make a home grease trap, 3) How to make the water clear by sedimentation, 4) How to make a simple water filter, 5) Biological wastewater treatment and 6) Let's find out how to improve water quality.

2) Determination of the quality of the science laboratories on “The Basic of wastewater management for students living along Saen Saeb canal”, by specialist science teachers. A total of 5 people evaluated five areas: 1) Objectives, 2) Content, 3) Experimental method, 4) Experimental equipment and 5) Post-Test. Each area was evaluated with one of the following ratings: [ 8 ]

- 1.00 -1.50 = very low
- 1.51-2.50 = low
- 2.51- 3.50 = medium
- 3.51-4.50 = good
- 4.51-5.00 = Very good

3) Evaluation of the science laboratories on “The basic of wastewater management for students living along Saen Saeb canal”,by conducting a teaching experimentation with a group of three students and nine students successively, before the real trial.

4) Performance of experimental teaching by inviting a single sample group (sampled from 4 classes of 40 Mathayom 1 students, from Kasemphitaya school, Bangkok, Thailand) for 16 periods (50 minutes a period) of experimental teaching.

5) Evaluation of the students' learning outcomes with regard to the knowledge in science laboratories on "The basic of wastewater management for students living along Saen Saeb canal".

6) Evaluation of attitude toward water resources in the science laboratories on "The Basic of wastewater management for students living along Saen Saeb canal". Tests to measure attitudes toward environment used three levels as follows: 0 = low, 1 = medium, 2 = good. The evaluation criteria was set at 2.00 (good level) or higher.

7) Evaluation of students' toward satisfaction in the science laboratories, through studying the in the science laboratories on "The Basic of wastewater management for students living along Saen Saeb canal". Tests to measure toward satisfaction of the science laboratories used five levels, as follows:

1.00 -1.50 = very low

1.51- 2.50 = low

2.51- 3.50 = medium

3.51-4.50 = high

4.51-5.00 = highest

The evaluation criteria was set at 4.00 high.

## Results

The results of the research were as follows:

1. The quality of the science laboratories on "The basic of wastewater management for students living along Saen Saeb canal" was divided into 6 laboratory directions: 1) Basic investigation of water quality, 2) How to make a home grease trap, 3) How to make the water clear by sedimentation, 4) How to make a simple water filter, 5) Biological wastewater treatment and 6) Let's find out how to improve water quality, by a total of five specialist science teachers, who evaluated five areas: 1) Objectives, 2) Content, 3) Experimental method, 4) Experimental equipment and 5) Post-Test. The details reshown in Table 1.

Table 1: The quality of the science laboratories on “The basic of wastewater management for students living along Saen Saeb canal”, evaluated by a total of five specialist science teachers.

<b>Areas</b> Laboratory	Objectives	Content	Experimental methods	Experimental equipment	Post-Test	$\bar{X}$	Levels
1) Basic Investigation of Water Quality	4.40	4.60	4.40	4.40	4.40	4.44	good
2) How to make a home grease trap	4.60	4.40	4.40	4.60	4.40	4.48	good
3) How to make the water clear by sedimentation	4.40	4.60	4.40	4.40	4.60	4.48	good
4) How to make a simple water Filter	4.60	4.40	4.60	4.40	4.40	4.48	good
5) Biological wastewater treatment	4.40	4.40	4.60	4.20	4.40	4.40	good
6) Let's find out how to improve water quality	4.40	4.80	4.40	4.60	4.60	4.56	very good
<b>Total Average</b>	good 4.46	very good 4.53	good 4.46	good 4.43	good 4.46	good 4.47	<b>good</b>

Table 1 Shows the quality of the science laboratories on “The basic of wastewater management for students living along Saen Saeb canal” evaluated by specialist science teachers. Quality was evaluated across five areas: 1) Objectives, 2) Content, 3) Experimental method, 4) Experimental equipment and 5) Post-Test. The respective averages of each area were as follows: 4.46 good, 4.53 very good, 4.46 good, 4.43 good, 4.46 good, while the total average across all areas was 4.47 good.

2. Achievement of knowledge learning outcomes, among students who used knowledge in science laboratories on “The basic of wastewater management for students living along Saen Saeb canal”, was assessed using the average pretest and posttest scores. The details of the results are shown in Table 2.

Table 2: The comparison of the achievement of knowledge learning outcomes among students who used the, assessed by pretest and posttest.

average score	n	$\bar{X}$	SD	df	t
pre-test	40	20.28	1.49		
				39	4.32*
post-test.	40	29.55	1.32		

Table 2 compares the average achievement of knowledge learning outcomes among students who used the science laboratories on “The basic of wastewater management for students living along Saen Saeb canal”, assessed by pretest and posttest. The increase in posttest scores on pretest scores was statistically significant .05.

3. Evaluation of attitudes toward water resources among students learning in science laboratories on “The basic of wastewater management for students living along Saen Saeb canal”. The details are shown in Table 3.

Table 3: The average post-test score on attitude toward water resources among students learning in science laboratories on “The basic of wastewater management for students living along Saen Saeb canal”

average score	n	$\bar{X}$	SD	$\mu=2$	df	t
post-test	40	2.78	0.47	2	39	2.25*

Table 3 Shows the average post-test score of attitudes toward water resources among students learning in science laboratories on “The basic of wastewater management for students living along Saen Saeb canal”. The average value of 2.78 (good level) was higher than the criteria set at 2.00, and was statistically significant .05.

4. Evaluation of students’ toward satisfaction in the science laboratories, through studying the in the science laboratories on “The basic of wastewater management for students living along Saen Saeb canal”. The details were shown in Table 3.

Table 3: The average posttest score of students' toward satisfaction in the science laboratories, through studying in the science laboratories on "The basic of wastewater management for students living along Saen Saeb canal"

average score	n	$\bar{x}$	SD	$\mu=4$	df	t
post-test	40	4.23	0.30	4	39	4.28*

Table 3 Shows the average post-test score of students' toward satisfaction in the science laboratories, through studying in the science laboratories on "The basic of wastewater management for students living along Saen Saeb canal". The average value of 4.28 (high level) was on the same level as the criteria set at 4.00, and was statistically significant .05.

### Conclusions

The results were as follows:

- 1) The science laboratories were of a high educational quality (very good level). Since the development of the science laboratories on "The basic of wastewater management for students living along Saen Saeb canal" has developed a systematic and through evaluation by experts in the various fields fully and improve the efficiency in the standard reliable prior to the actual trial.
- 2) Learning outcomes of students exposed to instruction utilizing the developed science laboratories were found to be positive: the students' post-test scores on knowledge were significantly higher than their pre-test scores.
- 3) Students' post-test scores with regard to attitude toward water resources were designated as at a "good level".
- 4) The students' toward satisfaction in the science laboratories were of a highly level.

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***The Usage Television Media That Taking Main Information From Trf Researches Focused on Cultural Tourism in Nakhonthai District, Phitsanulok Province<sup>1</sup>***

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**Abstract**

This research aims at using Television media that taking main information from TRF researches focused on cultural tourism in amphoe Nakhon Thai, Phitsanulok province to disseminate knowledge to the youths. The media has been developed from two TRF researches. Its scope has been on 3 groups: 1) secondary school students in amphoe Nakhon Thai, Phitsanulok province 2) secondary school students from outside and 3) foreign exchanged students. It is found from the research that this use of researches for creating media to disseminate knowledge to the youths leads to these learning outcomes: Group 1: secondary school students in amphoe Nakhon Thai, Phitsanulok province: documents which were gathered from three schools in tambon Neaun Pheum express that the evaluation rate of learning outcome is at highest level (4.53). Group 2: secondary school students from outside: documents which were gathered from three schools in Phitsanulok, Nontaburi and Samut Prakan express that the evaluation rate of learning outcome is at highest level (4.51). Group 3: foreign exchanged students: documents which were gathered from Chinese students in three universities express that the evaluation rate of learning outcome is at highest level (4.53). The use of these researches has been widely broadcasted to local administrations; for example, the office of Phu Hin Rong Kla National park, Ban Mai Rong Kla organization, mass media (e.g. Tourist Authority of Thailand, Phitsanulok office and The National Television Service of Thailand, Phitsanulok office, etc.) academic networks (e.g. Institute of Mekong-Salween Studies, Naresuan University, etc.) and social media.

Keyword : Television Media, to take advantage of TRF Researches, Cultural Tourism, Phitsanulok Province

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## **Introduction**

In Thai society, television is the most popular media that Thai people widely access. Every single house which is able to apply the electricity has a television set as well. Television has become one necessity for Thai families. So, people are mostly updated with news and any knowledge by watching television rather than by through other media. Television media, like a window to the world, can directly present worldwide events to most people. Watchers have consequently grasped and got ideas or experiences through this efficient media. Being aware of the potential of television media, the researchers had got the idea of publicizing the knowledge of TRF researches to related public through television broadcast media. By this way, it would help in increasing the awareness of the stakeholders of the knowledge or researches.

This research applied contents of TRF researches about communities and area studies to publicize to public through television broadcast media created by students majoring in Technological and Communicative Education. Publicizing research findings to public is an essential step of making use of researches, which in fact they are key devices of solving problems and developing the country. Researches could increase the competitiveness in commerce aspect and strengthen the economy of Thailand to its goal of sustainably developed country. Consequently, the welfare of Thai citizens could be widely improved along with the changing climate and the world (Suthiporn Jitmittraphap, 2013: 9).

The TRF researches on communities and area studies had been broadly conducted in many fields, including agriculture; economy; social science; environment; art and culture; and tourism. Researches on cultural tourism in Phitsanulok province were selected as the data for being produced as television broadcast media by students majoring in Technological and Communicative Education, since this area is closed to and would be advantage on their living.

The researchers have been interested in developing learning techniques of broadcast media production as well as making use of researches related to cultural tourism in Phitsanulok province. So, this research aims to find out the quality of television broadcast media produced by students after the processes of studying and interpreting the contents; and the effectiveness of publicizing television broadcast media, based on research-contents, to public audience.

## **Research objectives**

This research aims to publicizing knowledge based on TRF researches on cultural tourism in Nakhonthai district, Phitsanulok province through television broadcast media to the youths.

## Research processes

This research is a practical research. Elements and steps of working are as followed:

**1. Data** – Two TRF researches on cultural tourism in Nuean Pueam sub-district, Phitsanulok province were adapted into 4 episodes of television broadcast media, which are:

1.1 *Tourism Network Building by Local Community to Develop the Traveling Routes in Nuean Pueam Sub-district, Phitsanulok Province* by Pichet Phumpanit, 2012.

1.2 *Guidelines for Developing Tourism Potential Arranged by Ban Rong Kla Community in Nuean Pueam Sub-district, Nakhonthai District, Phitsanulok province* by Po Wachirawongworakun, 2010.

## Research population and sample groups

### 2.1 Population

2.1.1 Youths inside the studied area, which are students in three secondary schools in Nuean Pueam sub-district, Nakhonthai district, Phitsanulok province.

2.1.2 Youths outside the studied area, which are students in 29 secondary schools that are not in Nakhonthai district, Phitsanulok province.

2.1.3 Oversea youths in university level, which are Chinese students of Thai language program from 3 universities in Thailand.

### 2.2 Sample groups

The researchers chose specific sample groups from students in schools that agreed to participate in the program of publicizing the TRF researches through television broadcast media, which are:

2.2.1 Youths inside the studied area, including 123 students from Nakhonthai School; 138 students from Sriinrathitpitayakom School; and 93 students from Rachaprachanukro 23<sup>rd</sup> School.

2.2.2 Youths outside the studied area, including 87 students from Theysabarn 5<sup>th</sup> School (Wat Punpee) in Phitsanulok province; 64 students from Ratanathibeth School in Nontaburi province; and 79 students from Rachawinit Suwanabhumi School in Samutprakarn province.

2.2.3 Oversea youths in university level, including 61 students from Huachiew Chalermprakiet University; 30 students from Phranakhon Rajabhat University; and 34 students from Chandrakasam Rajabhat University.

## Research Tools

3. An evaluation form on the television broadcast media based on research contents, evaluated by the youth audience

## Specific Terms

**4.1 Television broadcast media** refers to the broadcast media which contents based on TRF researches on cultural tourism, as mentioned as data in this research, and produced by the students majoring in Technological and Communicative Education. Data were analyzed, interpreted and rearranged before the production. The complete broadcast media was presented to audience through television and radio channels.

**4.2 Cultural tourism** refers to the tourism that focuses on promoting the local culture of tourist attractions aiming to inspire new and broad worldviews to the tourists.

**4.3 Learning in the site and community context** refers to the learning of students, majoring in Technological and Communicative Education, who produced the broadcast media, along with people in communities in Phitsanulok province. The learning brought forth the cooperation in solving the communities' problems by the knowledge based on TRF researches. The process of learning had developed the close relationships and local patriotic awareness, as well.

**4.4 Publicizing researches application** refers to the development of television broadcast media for solving the communities' problems by applying knowledge based on TRF researches on cultural tourism. Contents for publicizing or the broadcast media were interpreted and produced by students, majoring in Technological and communicative Education of Education Faculty, Naresuan University. The publicizing made the public aware of the findings of TRF researches on cultural tourism and applied the knowledge for the communities' benefits.

## Research findings

### **Part 1 Publicizing of knowledge based on TRF researches on cultural tourism in Nakhonthai District, Phitsanulok Province through television broadcast media to the youths**

Two TRF researches on cultural tourism in Nuean Pueam sub-district, Nakhonthai district, Phitsanulok province were discussed and interpreted by the researches and students. Participants concluded the contents for being produced as the broadcast media into 4 episodes, as these:

- Episode 1 Phu Hin Rong Kla National Park
- Episode 2 Ways of life in Moo Bann Rong Kla
- Episode 3 Hmong culture in Moo Bann Rong Kla
- Episode 4 Ways of life in Bann Huay Nam Sai (Harmonic living of Hmong people in Moo 15, 16, and Thai people in Moo 17)

The researchers and students collected information and filmed places and people in Nuean Pueam sub-district, Nakhonthai district, Phitsanulok province, according to the

assigned plan. The four episodes of broadcast media were produced and publicized to the target youths through television and radio channels. Games and Q&A activities relating to cultural tourism in Nuean Pueam sub-district, Nakhonchai district, Phitsanulok province were added to all four episodes of the broadcast media. Results of the evaluation on the broadcast media by the target youths, sorting out according to the sample groups, are as followed:

**Group 1** Youths inside the studied area, including students in three secondary schools. Evaluation results were:

(1) Students from Nakhonchai School rated level of perception at the Highest (4.69)

(2) Students from Sriinrathitpitayakom School rated level of perception at the Highest (4.63)

(3) Students from Rachaprachanukro 23<sup>rd</sup> School rated level of perception at High (4.16)

**Group 2** Youths outside the studied area, including students in three secondary schools in Phitsanulok province, in Nontaburi province, and in Samutprakarn province. Evaluation results were:

(1) Students from Theysabarn 5<sup>th</sup> School (Wat Punpee) in Phitsanulok province rated level of perception at the Highest (4.60)

(2) Students from Ratanathibeth School in Nontaburi province rated level of perception at High (4.16)

(3) Students from Rachawinit Suwanabhumi School in Samutprakarn province rated level of perception at the Highest (4.70)

**Group 3** Oversea youths in university level, which were Chinese students studying Thai language programs in three universities. Evaluation results were:

(1) Students from Huachiew Chalermprakiet University rated level of perception at the Highest (4.58)

(2) Students from Phranakhon Rajabhat University rated level of perception at High (4.14)

(3) Students from Chandrakasam Rajabhat University rated level of perception at the Highest (4.77)

### Summary of Evaluation by the Sample Groups on Contents of the Broadcast Media

Table 1 Summary of evaluation on Contents of the Broadcast Media

Item	Evaluation of Perception of Audience	Number of Evaluator	Rate / Number of Evaluator / Percentage					Average Rating
			5	4	3	2	1	
1	Perception about cultural tourism in Moo Bann Rong Kla in Nuean Pueam sub-district, Nakhonthai district, Phitsanulok province	709	527	263	38	3	2	4.55
			74.33 %	37.09 %	5.36%	0.42%	0.28%	
2	Perception about tourism in Phu Hin Rong Kla National Park in Nuean Pueam sub-district, Nakhonthai district, Phitsanulok province	709	505	288	38	2	0	4.56
			71.23 %	40.62 %	5.36%	0.28%	0.00%	
3	Perception about agricultural tourism in Moo Bann Rong Kla of Nuean Pueam sub-district, Nakhonthai district, Phitsanulok province	709	498	273	58	2	2	4.51
			70.24 %	38.50 %	8.18%	0.28%	0.28%	
4	Perception about cultural tourism in Moo Bann Nam Sai of Nuean Pueam sub-district, Nakhonthai district, Phitsanulok province	709	471	274	79	7	2	4.41
			66.43 %	38.65 %	11.14 %	0.99%	0.28%	
5	Positive attitude toward cultural tourism in communities of Nuean Pueam sub-district, Nakhonthai district, Phitsanulok province	709	546	233	43	11	0	4.57
			77.01 %	32.86 %	6.06%	1.55%	0.00%	
6	Appreciation and concern in local culture in communities in Nuean Pueam sub-district, Nakhonthai district, Phitsanulok province	709	486	262	75	6	4	4.46
			68.55 %	36.95 %	10.58 %	0.85%	0.56%	
7	Awareness of cultural value, relating to tourism, of communities in Nuean Pueam sub-district, Nakhonthai district,	709	487	283	59	4	0	4.51
			68.69 %	39.92 %	8.32%	0.56%	0.00%	

	Phitsanulok province							
8	Possession of Ideas of participating in promoting and publicizing cultures of communities in Nuean Pueam sub-district, Nakhonthai district, Phitsanulok province	709	515	259	49	6	4	4.52
			72.64 %	36.53 %	6.91%	0.85%	0.56%	
9	Requirement of participating with the public in promoting and publicizing hometown cultures to national level	709	529	248	52	4	0	4.58
			74.61 %	34.98 %	7.33%	0.56%	0.00%	
10	Requirement of participating with the public in promoting and publicizing Thai culture to international level	709	520	266	45	2	0	4.58
			73.34 %	37.52 %	6.35%	0.28%	0.00%	
<b>Average rating of evaluation by the sample groups</b>								<b>4.53</b>

According to the above table, an analysis is as followed: All three sample groups, which are youths inside the studied area, Nuean Pueam sub-district, Nakhonthai district; youths outside the studied area, in other district in Phitsanulok province, in Nontaburi province, and in Samutprakarn province; and oversea youths in university level who studied Thai language program in Thailand, rated their perception on all four episodes, which were based on researches on cultural tourism, at the Highest level (4.53). For minor topics, item 9 Requirement of participating with the public in promoting and publicizing hometown cultures to national level and item 10 Requirement of participating with the public in promoting and publicizing Thai culture to international level, were rated at the High level (4.58). The three figures showed that the television broadcast media, games and Q&A activities increased the youths' perception on and promoted positive attitude toward cultural tourism in Nuean Pueam sub-district, Nakhonthai district, Phitsanulok province. As a result, the youths were willing to participate with the public to promote and publicize Thai culture to national and international levels.

## **Part 2 Publicizing the television broadcast media**

After the completion of the research, the researchers publicized the television broadcast media in the DVD form to other related sectors for creating wilder awareness, which are:

3.1 The community and local sector, including Phu Hin Rong Kla National Park, Bann Mai Rong Kla, and Bann Huay Nam Sai.

3.2 The mass communication sector, including the Phitsanulok province branch of Tourism Authority of Thailand, and the Phitsanulok province branch of the National Broadcasting Services of Thailand.

3.3 The academic network sector, including the Institute of Mekong-Salween Civilization Studies Naresuan University.

3.4 The social network sector, including Facebook, and Youtube, which all four episodes of the broadcast media were uploaded for worldwide appreciation.

### **Discussion on research findings**

After studying the evaluation forms on the television broadcast media based on research contents on cultural tourism in Nakhonchai district, Phitsanulok province, evaluated by the youth audience, the researchers found significant issues should be discussed as followed:

1) All three sample groups of youths evaluated the effectiveness of publicizing the broadcast media at the Highest level. 2) The second high level of the evaluation focused on item 9 (the sample groups were inspired and willing to participate in promoting cultures in their hometown communities) and item 10 (evaluators wanted to participate in publicizing Thai culture to the international level. These two evaluation results reflected that the television broadcast media was efficient and could publicize knowledge based on TRF researches to the sample groups and created positive attitude toward cultural tourism in Nuean Pueam sub-district, Nakhonchai district, Phitsanulok province. They also proved that procedure according to processes of this research was effective for publicizing knowledge based on TRF researches to public.

The research showed the results agreeing with conclusions of Suthiporn Jitmittraphab (2013: 9) stated that publicizing knowledge based on researches needs more attentions and development, especially relating to the social application, and the welfare development, or the commercial application. Researches are key devices of getting knowledge for developing the country properly and sustainably. The achievement in publicizing would enhance the potential of the country in commerce aspect and strengthen the economy of Thailand in order to achieve its goal. Consequently, the welfare of Thai citizens could be widely improved along with the changing climate and the world.

Also, Piyatus Tusanawiwat and team (2005) found in their research of *Development of Research Application System* that ways of applying research findings started from the research fund providers who should prioritize the systematical research. Management of the research fund should be practical and encouraging researchers to conduct researches. Regulations, the follow up system, research publishing, and clinical application of the research results should proceed systematically. Moreover, the staff should be trained and encouraged to realize the importance of research application.

## **Suggestions**

1. As it was found in this research that television broadcast media is an effective way of publicizing knowledge, so we propose that TRF researches on cultural tourism of other areas should be produced as television broadcast media and publicize to three groups of youths, inside, outside the studied area and oversea.
2. Television broadcast media related to cultural tourism should be evaluated, and the results should be publicized.

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***An Action Research on the Development of Special Education Propagation Activities***

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**Abstract**

In the trend of inclusive education, guiding students appreciating individual differences is vital. In Taiwan, it is common to utilize special education propagation activities to facilitate students' appreciation of individual differences. This action research was to explore the planning process and outcomes of special education propagation activities through the circulating process of plan-act-observe-reflect.

The teachers and students in the elementary school where the researcher serve were the participants in this study. The researcher planned school-wide and grade-wide special education propagation activities, and these activities were carried out in multiple forms, including posters, special education films, the theater performances and other forms. The common types of disabilities, the ways to assistant students with disabilities and the assistive devices they need are suitable topics to cover in special education propagation activities. In the five-year period study, the researcher found that reflection is critical when planning special education propagation activities. In addition, a variety of activities increased students' participation. The results of this study can be used as a reference for practitioners when planning special education propagation activities.

Keywords: special educational, propagation activities, inclusive education

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## Introduction

Under the trend of inclusion, general education and special education have been placed in the same system for mutual development(Niu, 2015). Inclusive education includes the tangible, physical environment and the intangible, psychological environment; it is intended to provide all students with adaptive learning experience. Special education teachers and general education teachers should be used to design curricula that satisfy student needs. The diversity created by individual differences lies in the value of inclusion. In classrooms, what instructors care most about is how to respect individual differences among students and to accommodate their needs.

From my observations on the teaching scene, inclusion find that although students with special needs are placed in the normal class, they may not be accepted by general education students or become acclimated to the class. According to Niu(2008), the practice of intervention programs in the middle of the semester can help promote general education students' understanding and acceptance of students with special needs. One of the special education teachers' mission is to help special education students acclimate to the class. Hence, in elementary schools, special education propagation activities as well as a series of activities and campaigns are arranged each semester to promote the awareness of special education.

The collaboration of general education and special education benefits more students with the same needs and encourages acceptance of differences for the realization of inclusion. A survey of domestic special education propagation activities-related research(Tan, 2009 ; Chuang, 2010 ; Liou, 2013 ; Chen, 2014 ; Chien · Huang & Chen , 2014 ; Lai, 2015 ; Liu & Yang, 2016)indicates that special education propagation activities can improve the understanding of special education students and peer acceptance, decrease conflicts and misunderstandings, and facilitate positive peer relationships.

As general education teachers present higher needs for special education propagation activities(Tan, 2009), the activities has become an important annual event. In the school where I teach, special education propagation activities has been in place for years. From August to December each year, activities is organized and hosted. An after-event survey is conducted to collect homeroom teachers' feedback to gauge how well the event was held. It was found that the results of the survey are not quite acceptable, with respondents representing only 60% for the communication effect of the event. Further interviews with the homeroom teachers found that the teachers would love to see more categories and richer content in the promotional activities. In their opinion, the special education propagation activities was not organized in a way that would attract students' participation. In other words, the effect of these promotion events on special education did not reflect what is found in the relevant literature and was below expectation. This provides motive for this research, which aims to provide solutions for the practical problems and for the development of special education propagation activities programs which better fit the needs of the students.

Action research refers to research imitated to solve problems encountered in practical work scenes(Tsai, 2000). The purposes of the action research are to deliver practical results through a series of actions, evaluations, and reflections to help teachers improve teaching quality by modifying classroom activities, and also to help students

learn better(Koshy, 2010). Through new actions brought about by reflections, teachers can advance their professional development and expand their knowledge and expertise(Altrichter, Feldman, Posch, & Somekh, 2008). In action research, teachers are simultaneously workers and researchers; they identify problems at the scenarios and design action plans. Through reflections and problem-solving actions, they can apply their experience to the work situations.

This paper employs action research to design and implement action plans. Through reflections, modifications, and re-implementation, this research aims to improve the performance of special education propagation activities at the actual education scene. The word *development* used in this research refers to the process of reflections, modifications, and implementation.

### **Purposes and Questions**

The focus of this research is special education propagation activities. By interviewing homeroom teachers, I collected their opinions and suggestions about the events; the results can be used for the development of special education propagation activities. A questionnaire survey was conducted after the event for evaluation. The research objectives and problems are as follows:

1. Discussion of appropriate special education propagation activities
  - 1-1 What problems were encountered during the development activities?
  - 1-2 How is activities developing?
  - 1-3 What modifications have been made in response to the problems encountered?
2. Analysis of the effect of special education propagation activities implementation
  - 2-1 Did the modified activities fulfill the advertised purpose?
  - 2-2 How did homeroom teachers view the modified activities?
3. Reflections on and growth of activity development of resource teacher
  - 3-1 What are the reflections and lessons of resource teacher throughout the special education propagation activities development?

### **Literature Review**

#### Special Education Propagation Activities and Its Effect

Positive peer relationship is the key factor for children to develop social adaptive skills(Mathur, & Rutherford, 1991). Many scholars have recruited students with various special needs as research participants(Chan, Lang, Rispoli, O'Reilly, Sigafos, & Cole, 2009 ; Gus, 2000 ; Mathur & Rutherford, 1991 ; Wallace, 2010 ; Watkins, O'Reilly, Kuhn, Gevarter, Lancioni, Sigafos, & Lang, 2015). By using peer mediated intervention(PMI) as the special education propagation activities, participants' target behaviors are modified in a way to improve peer acceptance and social adaptation.

PMI can be divided into direct and indirect types(Mathur & Rutherford, 1991). The indirect type refers to the intervention in the target behavior by indirect means of experience sharing, demonstration, role play, support skill training, and problem solving. The direct type refers to the use of direct means, whereby peers give reminders, enhancements, and guidance to the participants in order to change the

target behavior. The number of peers can be one or more(Mathur & Rutherford, 1991). For the multi-peer PMI, participants can have more chances of practice and the generalization effect can be enhanced.

The literature with different types of special education students participants, including students with emotional and behavioral disturbance(EBD)(Mathur, Rutherford, 1991), students with autism spectrum disorders(ASD)(Chan, Lang, Rispoli, O'Reilly, Sigafos, & Cole, 2009 ; Watkins, O'Reilly, Kuhn, Gevarter, Lancioni, Sigafos, & Lang, 2015), and students with attention deficit/hyperactivity disorder(ADHD)(Wallace, 2010), indicates that PMI can help children to develop social skills, decrease participants' improper behaviors, and provide more chances to practice getting along with others.

In Gus's study(2000), ASD students were the research participants and PMI was implemented in the class. By introducing what ASD is like to the class, the researcher successfully bonded the participants with the peers, changed the peers' attitudes and behaviors towards the participants, and thereby improved participants' social adaptation in the classroom.

Research has shown that PMI is a fitting and effective way in teaching social skills for the following reasons(Mathur, Rutherford, 1991):

1. Convenience: there are already many peers in the school environment;
2. PMI concept corresponding to the core spirit of inclusion;
3. PMI providing more chances for practice.

In Taiwan, PMI is often practiced through the form of special education propagation activities. In the implementation of activities in schools, characteristics of students with special needs are introduced to all teachers and students, in an attempt to promote the understanding of the students with special needs among teachers and students in normal classes, change their attitudes and behaviors, and help students with special needs acclimate themselves to the class.

## **Methods**

This paper employs action research, in which problems are identified in the research field. Both qualitative and quantitative data are analyzed in order to design action plans. Through the implementation of the action plans, post-implementation reflections, and re-implementation, the performance of special education propagation activities is improved.

## **Research Field and Participants**

The purpose of this research is to track the development of special education propagation activities. The participants in the study are all teachers and students in the school. The researcher is the school's resource teacher. The research field is the elementary school where the researcher works and where the activities are organized every August and held between September and December.

## Process

This research is divided into five phases: 1. Problem identification; 2. Action plan development; 3. Implementation, reflections, and modification; 4. Re-implementation; and 5. Report creation. See Table 3.1 for the research phases, details, and schedule.

Table 3.1 Research phases, details, and schedule

Research phase	Details	Schedule
Problem identification	Finding the original special education propagation activities that does not fit Collecting literature and data Identifying problems <ul style="list-style-type: none"> <li>) Not enough categories are covered</li> <li>) Not enough information is provided to assist and deal with students with special needs</li> <li>) Students show lack of interest in participating in these activities</li> </ul>	August 2012
Action plan development	Referencing the literature and data collected Designing action plans	August 2012
Implementation, reflections, and modification	Implementing the action plans Reflecting based on the data collected Modifying activities	September 2012 to December 2016
Re-implementation	Implementing the modified activities	
Report creation	Compiling data and writing reports	January 2017 to June 2017

This research spans a five-year period, from August 2012 to December 2016, during which five special education propagation activities events were held. The annual activities is organized between August and December and will be modified for implementation in the coming year.

## Tools

### 1. Researcher

In this research, the researcher collected the data, designed and implemented special education propagation activities, reflected upon and modified the activities, and re-implemented the modified activities.

### 2. Supplemental tools

Supplemental tools used in this research included the after-event feedback questionnaires for homeroom teachers and the minutes of interviews with the homeroom teachers.

To gather data on how well home teachers understood the students with special needs, giving assistance and dealing with students, the students' acceptance level, and class management, a questionnaire survey was conducted. Interviews with the homeroom teachers were also conducted to gather their opinions and suggestions about activities.

## Data Collection and Processing

Through interviews with the homeroom teachers and a questionnaire survey, both qualitative and quantitative data were collected.

### A. Qualitative data processing

The qualitative data were based on the minutes of interviews with the homeroom teachers. The coding rule was specified in the first place. See Table 3.2 for data coding explanation. After the interviews, minutes were compiled and sorted in the coding step. Suggestions as to how the activities should be modified were brought up after the data were analyzed and reflected upon.

Table 3.2 Explanation of the data coding

Coding examples	Explanation
Int.2012	2012 teacher interview minutes
Post-Int.2012	2012 post-interview reflections

### B. Quantitative data processing

The quantitative data were derived from the questionnaire surveys among the homeroom teachers. The data were analyzed through the excel software.

## Results

This paper employs the action research method and spans a five-year period. Though the annual special education propagation activities, the research tracks the development of activities and discusses the following issues.

### 1. Appropriate special education propagation activities

#### 1-1 Problems encountered during the development of special education propagation activities

The original activities practiced at the school where the researcher works was fixed in regard to its contents: (1) Third graders' PMI; (2) Challenge games for fifth and sixth graders; and (3) Exhibition of students with special needs works. See Table 4.1.

Table 4.1 The original special education propagation activities

Scale	Event name	Details
Grade-wide	Third graders' PMI	A PowerPoint presentation for third graders : The resource class environments and teaching staff The provision of instruction service Common types of students with special needs in classrooms: Learning disabilities, Physical disabilities, Hearing impairment
Grade-wide	Challenge games for fifth and sixth graders	Experience activities
School-wide	Exhibition of students with special needs works	Public display of student works on the resource class wall

Results of the post-event questionnaire survey:

- (1) 70% of the homeroom teachers thought normal class students developed a better understanding about students with special needs;
- (2) 60% thought normal class students knew better how to assist students with special needs;
- (3) 60% expressed an increased acceptance level of students with special needs by normal class students;
- (4) 64% expressed experiencing less trouble in class management;
- (5) 60% expressed an increased understanding of how to assist students with special needs.

Excerpts from the interview minutes:

*"We have an ASD in class but ASD is covered in the promotion materials."* (Int.2012-2)

*"I'd like to see more information on how to assist and deal with EBD in detail and with examples. That will help students to know how to get along (with classmates with special needs), and the homeroom teachers with class management."* (Int.2012-3)

*"I suggest more easy-to-understand footage or pictures, or examples be included. That will make it easier for the students to understand."* (Int.2013-1)

*"There were too much lecture-based activities. I suggest the event include quiz games or film watching sessions to attract students' interest."* (Int.2013-5)

*"Students liked the experience activities pretty much. They provided a chance for the students to feel how others feel."*(Int.2013-9)

Based on the interview minutes, the research found that under the trend of inclusion, ASD students were placed in the normal class; because of the practice of EBD identification that students with EBD and ADHD were placed in the normal class. As ASD, EBD, and ADHD have become the most common types of students with special needs in schools, the homeroom teachers would like to see more information on the three types being covered in promotion materials as well as ways to assist students with these disorders.

Interviews with the homeroom teacher found that the experience activities were

popular with the fifth and sixth graders and that these activities encouraged participation and were effective as means of promotion. These activities created more interactions than did other forms of special education propagation activities, which tended to be more lecture-oriented. Hence, activities which involve more interactions are more likely to result in higher levels of participation.

From the questionnaire survey and interview minutes, the researcher found the following problems:

- (1) Not enough categories are covered;
- (2) Not enough information is provided for assisting and dealing with students with special needs;
- (3) Students show a lack of interest in participating in these activities

#### 1-2 The development of special education propagation activities

- (1) More disability types should be included.

As classrooms see more students with ASD, EBD, and ADHD, homeroom teachers would like to see more information provided on these disorders. In response to the suggestions made by the responding homeroom teachers, the researcher included information on ASD, EBD, and ADHD.

- (2) More information should be provided as to how to assist and get along with students with these disorders.

According to Gus(2000), before the introduction of types of students with special needs and traits was given to the students, the normal class students knew little about the behaviors and needs of the students with special needs. After the introduction, students was able to be more understanding and show more empathy and tolerance. While the original special education propagation activities focused on the traits of each disorder type, the modified activities includes information on providing assistance and dealing with students with these disorders.

As pictures can help students learn quickly and well (Tsai, 1999) the researcher included explanatory pictures in the modified activities materials to explain to everyone, and used video clips to further explain the traits of each of the disorders. There was also detailed information on what types of aid was needed by people with special needs and how to provide support and assistance.

According to Chaung(2005), the inclusion of positive model messages in the design of an affective curriculum can better respond to the meaning of positivity, which is the focus in positive psychology. Hence, the researcher included the positive model of the particular disability type to convey positive messages of needs and assistance as a modified PMI.

In the post-activity interview with homeroom teachers, the teachers mentioned that students were not familiar with the models introduced. The reason could be that the models were from the past so even though positive messages were sent, students could not relate(Post-Int.2015-1).

*“Students are unfamiliar with the famous disabled people mentioned in the program so they don’t know how great these people were.”(Int.2015-1)*

The researcher (Tsai, 1999) found that it would be better to use models of people with disabilities with whom students are more familiar in order to increase their identification with disabled people. Based on the literature and interview minutes, the researcher made a few changes by using pop singers and sports athletes the students were more familiar with as examples to highlight the positivity and strengths of people with the disorders.

### (3) Increased level of participation

Interview minutes show that students felt uninterested in lecture-oriented special education propagation activities (Int.2012-7).

*“I’d suggest spending more time on Q&As with the students than long lectures.”*  
(Int.2012-7)

*“More plush toys and puppets may be used to warm up the audience.”*  
(Int.2013-10)

Therefore, the researcher enriched the special education propagation activities by replacing the lecture-oriented plan with one that had different activities (Post-Int.2012-7).

As for the school-wide activities, apart from the original work exhibition, there were poster displays, interactive bulletins, films, seminars, and audiobook appreciation activities. Public-interest groups were also invited to come to schools to promote awareness and understanding about people with disabilities. As for the grade-wide activities, more puppet shows were given to cater to the first and second grade audience. For the third and fourth grade audience, the PMI was aided with pictures, film clips, and quiz challenges. While the fifth and sixth graders still had access to experience activities, they could express what had been learned by painting and writing after the events.

The researcher’s design of school-wide and grade-wide activities aimed to encourage student participation through diverse activities.

### 1-3 Modifications made in response to the problems

Action plans were devised to solve problems encountered at the actual education scene. Table 4.2 shows the field-related problems, the corresponding action plans, and the modified activities.

Table 4.2 Field-related problems and the corresponding action plans

Field-related problems	The original activities	Modified activities
Not enough categories are covered.	Only learning disabilities, hearing impairment, and physical disabilities was covered.	Inclusion of information about ASD, EBD, ADHD, and visual impairment
Not enough information is provided to assist and deal with students with special needs.	Only the specific types are covered.	Inclusion of information about giving assistance and being with them, what aid would be needed, positive models
Students show a lack of interest in participating in these activities.	Too lecture-oriented	Expanding school-wide and grade-wide activities School-wide: printed promotion materials, films, seminars, and audiobook appreciation, promotion activities in public-interest groups Grade-wide: Puppet shows for first and second graders, more pictures and videos for third and fourth graders, experience and painting activities for fifth and six graders

## 2. Analysis of the effect of special education propagation activities implementation

### 2-1 The advertising effect of the modified activities

The advertising effect is represented in percentage based on the data collected from the questionnaire survey. Table 4.3 shows the percentage before and after activities were modified.

Table 4.3 Percentages

Topic	Percentage before modification	Percentage after modification
Improving the understanding of normal class students about characteristics of students with special needs	70%	83%
Helping normal class students to know how to assist SES	60%	83%
Increasing the acceptable level of SES by normal class students	60%	83%
Decreasing teachers' trouble in class management	64%	83%
Helping homeroom teachers to know how to assist SES	60%	83%

The table shows an increase in the percentage for each topic. In other words, homeroom teachers thought that the modified activities was more effective in introducing characteristics, explaining ways to assist, and improving peer acceptance; they also knew better about the students with special needs and encountered less trouble in class management. Hence, the modified activities proved to be more effective in the promotion of special education than the pre-modified activities.

#### 2-2 How homeroom teachers view the modified special education propagation activities

Based on the interview minutes, it was found that homeroom teachers gave positive feedback about the modified activities and considered it as a practical and effective means of promotion. Some mentioned that the promotion materials were easy to understand with pictures and words. Some said the activities helped to develop empathy in normal class students and that the students could apply what had been learned to help their classmates with special needs. More positive feedbacks were received for the puppet show activity for first and second graders.

*“Through the activities, students can better understand the lectures. The purpose of promotion has been met.”*(Int.2016-3)

*“Children become more empathetic. They now understand that some classmates do not mean to disrupt classes, and they are willing to help those classmates through some kind reminders.”* (Int.2015-1)

*“The words and pictures in the briefing material make it easy for students to understand. Very explanative and to the point!”* (Int.2015-2)

*“The material is easy to understand with the pictures. Students can grasp the ideas quickly.”* (Int.2014-1)

*“With pictures and the employment of progressive difficulty levels, the lectures are easy to understand and effective promotion.”* (Int.2014-2)

*“Children can form tangible ideas through the footage, which is effective as a means of promotion.”* (Int.2013-3)

*“It received positive feedback from the students. Very effective as promotion!”* (Int.2015-4)

*“The example of a tadpole turning into a frog is cool. Students can grasp the idea of*

*coming of age.*” (Int.2013-2)

*“The lecturers’ wording is close to students’ needs. The ideas are very clearly expressed”* (Int.2016-1)

*“The activities are very well designed. A very practical program!”* (Int.2015-7)

### 3. Reflections and growth of resource teachers

3-1 The reflections and lessons of resource teachers throughout the special education propagation activities development

From the personal experiences of implementation and reflections, the researcher found that the design of activities requires the input of teachers, and should consider the actual situations and needs, rather than repeating the same activities.

By including information on common types of students with special needs, ways to assist and deal with them, and aid needed in the promotion, students can form a better understanding of the characteristics and needs, including how to provide assistance and be with them. The activities should be designed in a way that is easier for the students to relate to their experiences, or including familiar personalities to resonate among the students. The activities should be more diversified to keep students interested and encourage student participation.

### **Suggestions**

Systematic special education propagation activities can benefit both students with special needs and normal class students. Positive peer relationships are the key for children to develop social adaptation (Mathur & Rutherford, 1991). In addition to diversified promotion contents and forms, frontline educators can work on how to develop systematic activities based on what grade the student is in to allow activities to deepen as the grade level increases.

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*A Narrative Exploration into the Experience of one Mother Raising a Twice-exceptional Child*

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**Abstract**

"Self-narrative" is about the story of their own life experience. This study seeks to describe the researcher's experience of raising a twice-exceptional child in Taiwan. The researcher's first child was identified with developmental delay at the age of 2.5, and he was identified as an intellectually gifted child at the age of 7.5. The researcher states her motherhood experience of accompanying her first child through various developmental stages, including identifying her child's uniqueness, overcoming her concerns and allowing her child to take the placement examination, handling her struggles and anxiety for the child's early enrolment, and reflecting on the overall process after the child was identified as an intellectually gifted student. Finally, this study observes that the keys to rearing twice exceptional children successfully are early identification and treatment, recognition of and respect for their uniqueness, promoting their weaknesses with their strengths, cooperation between parents, and the guidance of some important others, or "mentors."

Keywords: twice-exceptional, motherhood experience, self-narrative

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## Introduction

In special education, talents and mental/physical disabilities are two major subjects, and each is generally considered taking up the end of spectrum of learning needs without any overlapping. Recently, scholars and educators have drawn attention to so-called “twice-exceptional learners,” who are identified not only as specially talented, but also as mentally/physically disabled. Their particular educational needs pose a great challenge to the pedagogy realm: their potential talents need to be realized on the one hand, and their maladjustment caused by mental/physical disabilities requires different assistance on the other hand. Adequate identification and education for these special learners has been one of significant issues in the domain of special education in that they deserve equal share of educational resources to realize their potentials (Zhe-liang Wu, Qiu-juan Xiao, & Mei-ni Xiao, 2016; Gui-fang Cai & Ya-ling Hou, 2006).

There are a great number of related studies on the “twice-exceptional” learners, but few researchers focus on the “parenting” these learners have received (Foley Nicpon, Allmon, Sieck, & Stinson, 2011; An-qi Shi, 2011). Based on the researcher’s own long term observation as an educator of special education, it is noticed that these parents have trouble classifying their twice-exceptional children into a certain type of learners. They are aware that their children have some inborn disabilities as well as talents which somehow are hindered from realizing, thereby worrying that their children’s future will be greatly impeded when the disabilities overshadow the talents. This condition truly bewilders these parents.

Parenting is always the key to the success of special education. Although parents are not teachers of special education with the expertise, they are the one who are most involved in the growth of their children. As a result, parenting plays a very important part in facilitating the physical and mental development of twice-exceptional children. The research herself is a mother of a twice-exceptional child and is deeply aware of the difficulty of raising this kind of children. Given the limited amount of research has been published in this area, the motivation of this study is that in this qualitative exploration, the researcher’s personal narrative of recollecting and reflecting her experience of parenting a twice-exceptional child expects to shed light on the issue of twice-exceptionality and accordingly solicit more research, even offering some assistance.

## Literature review

### 1. The characteristics of twice-exceptional students

Twice-exceptional students have the traits of both talented and disabled students. They can exhibit outstanding potentials in one or more than one fields with single or multiple disabilities at the same time (Ming-yi Liao, 2013). Hardly can these dual-exceptional students be placed in a due learning setting and rarely can they be identified as gifted given the present selection process of gifted learners (Kun-shou Wu, 1999). These students don’t often match any gifted or disabled classification criteria because the gifted trait(s) can veil disabled trait(s) and vice versa (Kun-shou Wu, 1999).

Twice-exceptional students demonstrate greater disparities between awareness and social emotional competence than other gifted students, and these disparities were even more evident than those disabled students with general level of intelligence (Foley Nicpon et al., 2011). What influences their learning consists in comorbidity. The disturbed mood and maladjusted behavior that mental/physical disabilities bring out hinder realization of their potentials. The emotional and behavioral hindrances can be eliminated through the intervention of consultation or treatment and their gifted potentials can be actualized. Accordingly, educational counselling plays a crucial role in handling the learning needs of these dual-exceptional students (Reis et al., 2014; Zhe-liang Wu et al., 2016).

Twice-exceptional students demand steadfast education to cultivate their gifted talents and remedial education to improve their disabilities. Parents play a more crucial role in the holistic education students receive, and should fully cooperate with teachers to provide their children with sufficient support that helps unfold talents and to assist their children in building up faith in confronting their own disabilities (Trail, 2006; Wong & Morton, 2017).

## 2. The parents' parenting attitude towards twice-exceptional students

The parents of twice-exceptional students first couldn't identify their current situation and address it appropriately when facing their particularity. Some students even miss the right timing of diagnosis and placement, especially for those parents with a low economic status (Tai-hua Lu, 1995, 1996). Unlike common gifted or physically disabled students, twice-exceptional students have extremely high disparities between strengths and weaknesses and their performance are highly inconsistent. They can't be identified early and given appropriate parenting unless their parents are highly aware of their conditions (Kan-yu Li, 2015). For those twice-exceptional students with certain accomplishment, their parents' high expectation is the dominant support that drives their independence. These parents' tremendous effort in their early learning stage helps them grow up with more positive behavior (Gui-fang Tsai & Ya-ling Hou, 2006).

In order to assist twice-exceptional students, their parents can build a family support system, and upgrade their conception of parenting by joining some study groups or conferences. These parents also can join some support groups that are related to twice-exceptional students, learn to modify family budgets and resources, strengthen their conviction and improve their understanding of the strengths/weaknesses of their children from their own observation and interaction with schools (Xiao-lan Zou & Tai-hua Lu, 2015).

## **Research Method**

### **1. Research orientation and method**

This research is a qualitative study on the self-narrative, in which the researcher recollects and reflects on her experience of raising a twice-exceptional child.

## **2. The researcher**

The writer of this report is also the researcher of this study, who gleans, analyzes information and composes this report. The researcher has gone into special education for about thirteen years and is currently studying in the PhD program of Department of special education. In order to promote and master the parenting methods of twice-exceptional children, the researcher once took a course named Seminar on the Gifted Education for Special Groups. The researcher remains objective and neutral to abide by research ethics in this study.

### **The researcher's personal experience of parenting a twice-exceptional child**

In terms of analysis, the researcher's personal experience of parenting her own twice-exceptional son can be divided into four phases, each of which contains several accounts and self-reflections:

#### **1. Turning point—recognition of the particularity of the child**

Account of November, 2009: My first child, Peter (henceforth referred as Peter), suffered from hypoxia during the labor process, and was later born by Cesarean delivery. I paid close attention to my baby boy, Peter, for fear of some latent side effects. Since Peter was a toddler, he had bumped into objects, hurt his forehead, and got bruises and wounds, some of which sometimes even needed suturing. I thought to myself these were what usually happened to an ordinary toddler until I suspected there was something wrong with Peter, a two-year-old boy who had a poor sucking ability, with saliva frequently coming out of his mouth. As an educator of special education, I took the initiative to handle this noticeable abnormality and take him to hospital.

Self-reflection: I have blamed myself for my insistence on natural birth, in the process of which hypoxia took place. If I had not stuck to my insistence so much, Peter would not have this problem. Yet, I did not feel depressed or helpless since I knew I was capable of confronting a condition like this.

Account of February, 2011: Peter was taken to hospital for assessment and was diagnosed as Developmental Delay at the age of two and half. The doctor recommended Peter to receive some sense coordination training and language intervention. Peter, therefore, received early intervention service, that is, each session once a week.

Self-reflection: Except for self-blame, I did not have any negative emotions. Instead, I had the initiative to take the doctor's advice and arrange early intervention sessions. Part of the reason is that being a special education major enabled me to face my child's condition in the very beginning.

Account of September, 2011: Both my husband and I had work to do. In the daytime, Peter was mainly taken care of by my mother. Peter asked her to read books to him every day, but this request was too difficult to carry out for my mother with only primary education. I accordingly hired a female babysitter to read picture books, draw pictures, play in the park and do handicrafts with him twice a week. Thanks to the

babysitter who assisted him in the reading process, Peter started to develop a reading habit, and knew some words gradually. He used to inquire about the words he noticed in the ads and read out the words he could recognize on his own. The babysitter once mentioned Peter performed much better than ordinary children of his age in reading comprehension. However, I did not pay much attention to this since my major concern at that time was his needs for assistance.

Self-reflection: The babysitter had played a great role in helping Peter develop a reading habit. Peter could make up stories from the pictures he read and recognize some words. Because of her, my mother could temporarily have some break time. I believe the babysitter is beneficial to Peter and contributes to his interest in learning.

Account of August, 2012: Peter told me about his desire to go to school when he was three and half. Although I was willing to fulfill his desire, I still worried if it was too early for a three-and-half-year-old child to start schooling, so I chose the small kindergarten close to our house. After two days of pre-school class, a teacher noticed that Peter performed quite well, and the current class failed to quench his thirst of knowledge. So, it was recommended that he receive a replacement in a class of higher level. I also thought there should not be a great gap between Peter and other kids of his age in the class of higher level given he was born in the latter part of the year. After I negotiated with Peter, he agreed to be transferred to a higher level.

Self-reflection: I wanted Peter to try a more advanced level and I was ready to adjust anything based on my observation of his performance.

Account of April, 2013: One day, I went to the kindergarten to take Peter home. A teacher informed me that Peter had recently performed a traditional custom, called Ba Chia Chiang (The Eight Police Officers of the Dead), and said some mumbo-jumbo. This behavior looked so weird that Peter was recommended to see a doctor or have evil spirits exorcised. Peter also liked to tell his peers about history, astronomy, and parade formation culture, and it was hard for him to stop talking once he started to talk about these subjects. However, his peers had no idea about these subjects and were unable to engage in the communication. I told the teacher that this was his interest in watching some temple festivals nearby and mimicking some acts, and I was ok with that. Also, I told the teacher I would communicate with Peter, and ask him to mimic those acts only at home. However, Peter refused to observe the teacher's prohibition later on and even asked other classmates to learn from him about those acts. Peter couldn't stop performing Ba Chia Chiang, so the teacher asked me to transfer my son to another kindergarten for fear that these acts would possibly have some bad impacts on other kids.

Self-reflection: The teacher did not accept Peter because of Peter's bizarre behavior as well as his own unfamiliarity with students with particular learning needs. I think the teachers in the preschool should have some knowledge and skills about special education. After all, the ages of from 0 to six are golden period for early intervention, and these preschool teachers can help identify children with latent developmental retardation and initiate early intervention as early as possible.

## **2. Facing challenges—overcoming my own concerns and supporting twice-exceptional Peter’s decision to join the placement test for early admission**

Account of August, 2013: Peter was four years and seven months old. It was again the time for follow-up assessment. I informed the doctor that Peter exhibited some obstinate behavior. I also informed the doctor of his performance at home and school. The hospital did a series of assessments. Later, I returned to the hospital for the final report. I was notified that Peter was excellent in intellectual performance and language comprehension. He was a talented child. Relatively speaking, Peter couldn’t express his emotions well, he was extremely active and he had insufficient concentration. Peter also exhibited some obstinate behavior and particular interests. I was asked to observe whether Peter exhibited noticeable problems in social interaction. He might have suffered from Attention Deficit Hyperactivity or Asperger Syndrome. Therefore, it was recommended that Peter continue early intervention and come back for follow-ups. We were recommended to make some more difference on Peter’s behavior.

Self-reflection: Through the doctor, I learned that Peter might be a gifted child. I had little idea about giftedness, so I did not pay attention to it. I just followed early intervention service and focused on enhancing Peter’s weak parts. Looking back now, I learn that I should have promoted his strong parts at the same time instead of mainly reinforcing his weak parts.

Account of July, 2014: I worried about Peter’s learning condition, so my husband and I virtually visited all kindergartens nearby for the one suitable for Peter. After our discussion, we decided one and transferred Peter to there. Peter studied in the program of the highest level and showed no any maladjustment. Except for relatively poor performance in writing, Peter adapted to the new setting well. The new kindergarten applied some language assistance sessions for Peter and I had Peter receive some early intervention service outside the kindergarten. One day, I received a call from a teacher of language assistance service and I was notified that it was not so urgent to deal with Peter’s problem with pronunciation in this stage. The teacher noticed Peter was obstinate and often obsessive about certain ideas, and asked me if there was anything similar to this situation. I replied that this situation took place quite often at home and Peter would accept any change only when I constantly negotiated with him. I learned that I should notify Peter and discuss with him before making any decision related to him.

Self-reflection: Communication between teachers and parents is important. As parents, we can not exactly know our son’s learning condition at school. Teachers informed us of this, so it was easier for me to specify the parts he needed for assistance.

Account February, 2015: The new semester started and it was time for practicing the graduation show and taking graduation photo. I told Peter he was going to take graduation photo twice and Peter wondered why he would do so. I told him, “Because you are going to study in the same level second time.” Peter replied, “I never say I want to study in the same class twice.” I said, “If you want to start elementary school earlier than children of your age, you have to take an exam.” Peter decided to give it a try, so I helped him apply for the placement test for early admission. I did not realize the test day happened to be the day of our trip to Japan until the moment I paid the

exam, so I later returned to the office to cancel his application and ask for a refund. I came home and explained to Peter about this condition. Peter expressed his preference of taking the test and his willingness to give his younger brother the chance to travel overseas. The next day, Peter's father went back to re-apply for this exam. On the test day, Peter's grandmother took him to attend the exam.

Self-reflection: My son had his own opinion. I allowed him to make decisions since he was little and I always respected these decisions. However, I agreed to his decisions under the condition that the choice he made was correct and harmless. After all, he was still too little and his judgment was not good enough.

Account of March, 2015: Peter was six years and four months old. Because of the problems of concentration and volatile emotions, Peter's right eye constantly winked and his right cheek trembled for a period of time. He was then taken to hospital and was suspected of Tourette Syndrome. It took a while to confirm the diagnosis. Peter's insistence and obstinate behavior along with these new conditions worried me more. Fortunately, it turned out to be a case of severe eye allergy and the symptom ceased after seeing a doctor for a few months. It was a false alarm.

Self-reflection: Educator of special education as I was, I still got the jitters when a new condition emerged. I was worried that my son's condition was getting worse and I might not be able to handle it.

### **3. Worrying—my inner struggles and torment during my twice-exceptional son's early admission to elementary school**

Account of March 2015: I had been struggling with the decision to have Peter early admitted to elementary school after he passed this early admission test for gifted preschool children. What worried me was not Peter's academic performance, but his not being physically/mentally mature enough to adapt to the elementary school and to handle some interpersonal problems, especially when some of his behavioral problems accumulated. For this reason, my husband and I talked to Peter about the possible problems he was going to face and discussed with him. However, Peter still insisted on early admission. I also consulted some professional scholars and other parents who had their kids early admitted to elementary school. All of them agreed to this decision, so we respected Peter's will and allow him to be early admitted to elementary school.

Self-reflection: Childhood is once in everyone's lifetime, so I hoped Peter could have stayed in the kindergarten a little longer and had some more care-free moments. I re-confirmed his intention several times before admission, and Peter was firmly determined. Despite my own worry, I could not but support his decision.

Account of August, 2015: Although I had had a lot of preparation beforehand, I still felt anxious after he started schooling. To my surprise, Peter adapted pretty well although he sometimes felt sad that some boys in his class refused to play with him because of his younger age. Hearing this, I felt sorry for him, but I decided to teach him how to confront a situation like this. I told him it was not easy to pass the placement test and passing this test meant he was capable of handling schoolwork and there was no connection between learning and age. I asked him not to take this matter too seriously, and he agreed with me. Later, he didn't care about it so much.

Self-reflection: To handle the issue of Peter's early admission, I had made a plenty of preparation and I even improved Peter's social skills and self-care ability. So, it did not surprise me when Peter encountered a problem with his peers. Fortunately, I had made preparation to handle things like this.

#### **4. Peter's immersing in learning happily—taking him to join a co-learning group after school**

Account of 2016: As a special education major, I had Peter receive early intervention before schooling, and all I wanted from Peter was that he could learn happily. As a result, I did not have much demand on Peter's academic performance whether he passed the placement test or studied in the gifted class. After Peter entered elementary school, I decided to take care of him on my own and organize a co-learning group with other mothers so that he could have a group of learning mates, and enjoy different activities every day after homework. Activities were like physical exercises, board games, reading, field trips, visiting National Science And Technology Museum and other museums, etc. Peter learned from fun and this learning pattern provided him with a great amount of extracurricular knowledge and an understanding of the importance of teamwork. This made me believe I had made a correct decision.

Self-reflection: I was convinced that learning is a lifelong matter and the knowledge children learned from the classroom was not enough for them to cope with the coming complicated world. Hence, with my husband's support, I organized the co-learning group. Peter had a very inquiring mind, and this co-learning mode had enriched his learning life and generated a sibling-like bond with other group members. Every day, Peter along with other group members did homework, created new games, learned how to nurture interpersonal relationships, and make up with friends after some quarrels. To my surprise, I made friends with other parents. We encouraged each other, and learned from each other. I earned more benefits than I had expected.

#### **Recommendations for educators and the parents of twice-exceptional children**

The researcher analyzed and classified the textual analysis as shown above and came up with some suggestions for the parents of twice-exceptional children and related educators as follows:

##### **1. The importance of early intervention and treatment**

In the process of raising children, parents should be aware that children will never grow up safe and sound all the way to adulthood, and they always go through certain major or minor physical conditions. Although I have received some professional training about special education, I still had to follow the recommendations from doctors and other professionals when I was notified that Peter had a problem of developmental delay so that I was able to arrange suitable training and lessons for my child and to make early intervention more efficient by combining some therapeutic activities and methods with everyday activities. From my own experience of raising my son, I believe that the children will have a better outcome of early intervention as long as their parents face their conditions positively and address them in right moments.

## **2. Understand and respect specialties of the children while promoting their weaknesses with their strengths**

Everyone has his/her own strengths and weaknesses. What tells twice-exceptional children from others is that they have greater disparities between strengths and weaknesses. If the education they receive makes a good use of their strengths to facilitate improving their weaknesses, they are more likely to demonstrate their outstanding talents and build up confidence. For instance, Peter learned some lessons from the co-learning group, such as leadership, teamwork, and respecting and listening to other's opinions. His social relationship was greatly improved and he became less obstinate and insistent.

## **3. Cooperation between the parents is also the key to successful parenting**

My husband offered great help by sending our son to and from school. He also often communicated with the school teachers about Peter's performance. I often shared with him some parenting articles written by some professionals. After this kind of interaction, my husband was familiar with the parenting suitable for twice-exceptional children. Our collaboration did help solve problems and offer psychological relief. As a result, I was very hopeful and affirmative in my parenting process of helping Peter grow up well.

## **4. The guidance of some important others in the children's life**

The most treasurable thing in one's life is to have a "mentor" who notices one's inner abilities and is willing to help them realize. Fortunately, Peter met more than one mentor, who helped him discover his own talents and offered opportunities for him to demonstrate his talents. Thanks to them, Peter's strengths can be seen.

## **Conclusion**

Peter and I can be regarded as the mentor for each other. Because of his presence in my life, I have made progress in education field although the process of raising him up demands me a lot of attention and efforts. With gratitude, I hope I can continue to guide him forward. At the same time, I can sympathize more with and work better for my students and their parents because of my similar experience.

As a teacher of special education and a mother of a twice-exceptional child, I learned one thing from my experience: the parents are the best teachers of their children. For the parents of those children with special needs, it is highly recommended that they cooperate with professionals as early as possible for a better result of early intervention and treatment. This is the key to my successful raising of my twice-exceptional son.

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***Developing Speaking Proficiency Using a Task-Based Approach Through  
a Role-Play to Junior High School Students in Indonesia***

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**Abstract**

Nowadays, teaching speaking has become increasingly important since English has been regarded as a language for international communication. In addition, the demand of teaching speaking in EFL countries like in Indonesia has been increasing as there are large number of students who want to learn English for communicative purpose (Widiati & Cahyono, 2006). However, English teachers in Indonesia rarely promote speaking skill in the class as they attempt to focus teaching other skills which are tested in the national examination. Due to this condition, the speaking proficiency among secondary students is simply low and they do not completely engage in speaking activity since their English teachers employ monotonous activities such as drilling, Grammar Translation Method, translation and so forth (Widiati & Cahyono, 2006). Moreover, the speaking activities which the teachers apply do not represent meaningful and communicative activities in which the students can use English communicatively and meaningfully. Basically, one of principles in teaching English is promoting activities which encourage the students to use the target language “communicatively, meaningfully as well as effectively” (Luchini, 2004, as cited in Yen, Hou & Chang, 2015). Hence, task-based approach particularly using a role-play is a response to the demand to provide the optimal conditions for Indonesia’s junior high school students to develop their speaking ability in communicative and meaningful way. Role-play is regarded as a classroom activity which is suitable for realism as it provides the learners opportunities to rehearse certain activities which they will likely perform in a real life.

Keywords: Speaking Proficiency, Tasked-based Approach, Role-play, Junior High School Students

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## Introduction

English has become a compulsory subject to be taught in junior high school level in Indonesia. As a result, this subject is tested in national examination of Indonesia in which all junior high school students must participate it in the last year of their grade. In fact, national examination in which English is tested simply focuses on listening, reading, and writing examination (Indonesia's Ministry of Education and Culture, 2013). Even though the curriculum of teaching English in Indonesia accommodates all skills namely listening, speaking, reading and writing, in fact, the students are not tested on their speaking skill in the national examination. Due to this phenomenon, in teaching practice where English is taught in the class, many Indonesian English teachers simply focus on teaching skills to be tested in national examination namely listening, reading and writing and they rarely conduct a speaking activity in their class. This fact is problematic for English teaching in Indonesia as speaking skill also should be mastered by Indonesia's students due to its importance.

Nowadays, teaching speaking has become increasingly important since English has been regarded as a language for international communication. In addition, the demand of teaching speaking in EFL countries like in Indonesia has been increasing as there are large number of students who want to learn English for communicative purpose (Widiati & Cahyono, 2006). In other words, speaking skill is completely needed for the students in order to able to communicate in English globally. In Indonesia context, the ability of spoken performance in English becomes one of qualifications in applying for a certain job which needs good English spoken ability such as, a manager of company, an executive of marketing, a labour in international company and so forth. Moreover, in university level the ability of speaking English becomes one of qualifications in enrolling for certain majors in some universities in Indonesia. Furthermore, recently there are many young Indonesian who get a chance to study abroad from Indonesian government or other countries. In this case, the ability of speaking English is needed to be able to communicate and achieve the learning success in abroad. Hence, due to those considerable importance, the students need to have exposure in learning speaking skill starting from junior high school.

As stated previously that English teachers in Indonesia rarely promote speaking skill in the class as they attempt to focus teaching other skills which are tested in the national examination. Due to this condition, the speaking proficiency among secondary students is simply low and they do not completely engage in speaking activity since their English teachers employ monotonous activity such as drilling, Grammar Translation Method, translation and so forth (Widiati & Cahyono, 2006). Moreover, the speaking activities which the teachers apply do not represent meaningful and communicative activities in which the students can use English communicatively and meaningfully. As a research conducted by Tutyandari in 2005 reveals some facts that many Indonesian students keep silent during speaking activity as they do not feel self -confident to speak up, have lack prior knowledge of the topic, as well as the class has poor teacher-learner relationship. In addition, another research conducted by Padmadewi (1998) shows that Indonesian students feel anxious during the speaking activity due to pressure from the speaking tasks which require them to speak individually and spontaneously within the limited time. Moreover, as my personal experience when I was in junior high school, my English teacher taught speaking skill through Grammar Translation Method (GTM) in which it is regarded as

inappropriate technique to teach speaking. From the elaboration above, it can be clearly seen that the reason why the speaking proficiency of secondary students is completely low as the technique used by Indonesia's English teachers is inappropriate. Moreover, the inappropriate technique used by the teachers also make them do not enjoy and engage in the speaking activities.

Basically, one of principles in teaching English is promoting activities which encourage the students to use the target language "communicatively, meaningfully as well as effectively" (Luchini, 2004, as cited in Yen, Hou & Chang, 2015). In other words, the teachers have to create a communicative learning atmosphere in which the students are able to practice and use the target language in communicative way. Hence, task-based approach is a response to the demand to provide the optimal conditions for Indonesia's junior high school students to develop their speaking ability in communicative and meaningful way. The task-based approach involves the use of tasks which engage students in meaningful interactions and negotiations (Richard, 2002) through using a role-play strategy. The use of role play in teaching speaking is proved to be an effective way to develop students' speaking ability as it incorporates the replication of real-world situations in which the students can use English communicatively ( Yen, Hou & Chang, 2015). In addition, the idea of using task-based approach through a role play is in line with reflection which I wrote at the beginning of this course. As an English teacher, I have to develop my students' English skills in communicative way through using some teaching techniques or teaching approaches which promote communicative and meaningful activities. After completing this course, the material which have been served in this course deepen my understanding toward some teaching approaches which are appropriate to achieve the goal of teaching English. Looking at the phenomenon of teaching speaking in Indonesia context particularly in secondary school level which has been well elaborated previously strengthens my belief that the use of task-based approach through a role-play is one of ways to develop students' speaking proficiency communicatively and meaningfully.

This essay will be divided into two sections. The first section will elaborate the background of the study, principles in teaching speaking, the concept of task-based approach as well as the idea of role-playing in teaching speaking. Meanwhile, the second section of this essay will discuss the application of the use of task-based approach through role-play which is linked to theoretical frameworks that have been discussed in the first section. Furthermore, the last part of this essay is a conclusion.

### **The principle of teaching speaking**

Speaking is defined as a specific spoken discourse which is mainly social and involved in social purposes as well as in social context (Nazara, 2011). From this notion, it can be understood that the core point of speaking is representing interaction and social engagement among its speakers in which those two points should exist in conducting speaking activities. Bringing those points into teaching practice particularly in EFL (English as Foreign Language) context is found quite challenging since there is a perception that speaking is regarded as a difficult skill to be mastered by EFL students (Hinkel, 2005, as cited in Nazara, 2011). The reason why they have this kind perceptions since they do not have much exposure in learning speaking in the class. Therefore, they do not have habits in practicing their spoken aspect then

make them coming to the idea that speaking is a difficult skill to be mastered. Moreover, the learning environment in the class does not provide any interactive environment where the students can use English in communicative way.

Teaching speaking merely has a purpose to build communicative competence among the students in the class. As stated by Murcia (2001) that the goal of teaching speaking is to encourage the students to achieve the acquisition of communication skill as well as to foster the students to use the language in real communication. Hence, in conducting speaking activities, English teachers need to consider this principle. The idea of communicative competence is developed under the view of language as context, language as interaction, as well as language as negotiation. It means that learning to speak English requires more than understanding its semantic as well as grammatical aspect of the language but importantly emphasizes more on how to use the language appropriately in social interaction. Canale and Swain (1981) argued that communicative competence in speaking consists of four competences namely grammatical competence, sociolinguistic competence, strategic competence and discourse competence. All these communicative competences completely influence speaking proficiency of the students.

### **The concept of task-based approach**

Task-based approach refers to an approach of language learning which focuses on doing a certain task to achieve an outcome of language learning (Ellis, 2003). In other words, this approach encourages the students in learning language by providing learning activities which focuses on tasks. The types of tasks can be in the form of presenting pictures, drama, role-play, realia, and many others. The main focus of giving the task is to achieve the goal of language learning in which the students are able to use the language communicatively. As contended by Ellis (2003), task-based approach requires some tasks which involve primary focus on meaning in which the learners can engage in using language practically instead of displaying the language. Aliakbari and Jamalvandi (2010) also added that task-based approach attempts to engage learners in actual use of the target language through instruction as well as effective communication. Discussing the idea of task, there are several resources which concern about this term. Nunan (1989, as cited in Aliakbari & Jamalyandi, 2010) argued that a communicative task is defined as a piece of classroom activities which engage the learners to understand, manipulate, assist and interact in the target language which their focus is particularly on meaning rather than on form. Moreover, Willis (2006, as cited in Aliakbari & Jamalyandi, 2010) believed that task refers to a goal-oriented activity which has clear aims. From those two resources, it can be concluded that task in this approach means any tasks which are presented in classroom activities that aim to encourage the students in understanding, manipulating, assisting as well as communicating in the target language.

Basically, there some phases in applying task-based approach namely pre-task, during task, and post-task (Ellis, 2003). In pre-task stage, the students are given several activities which provide adequate support for them to deal with a set of complex tasks as well as challenging tasks. On certain cases, the learners are exposed with the knowledge of new vocabulary, grammar, or other knowledge of language functions. Meanwhile, in during task stage the students are engaged in meaningful activity where interaction and communication occur. Then in the last stage, the students get

an opportunity to get feedback and comments toward the activity which they have done. As argued by Ellis (2003) that in this stage the teachers will follow up the task performance. As stated previously that task-based approach comprises a set of activities and in this discussion, a role-play will be used to develop speaking proficiency of junior high school students in Indonesia.

## **The overview of a role-play**

### **1. The idea of a role-play**

Role-play is regarded as an effective strategy which focuses on the ability to speak and interact by playing different roles in a given real-world context (Yen, Hou & Chang, 2015). Meanwhile, Van Ments (1989) stated that role-play is an activity which requires the students to practise interacting with others in certain roles in which the situation is conducted by producing a scenario and a set of role of descriptions. It can be stated that a role-play refers to a teacher's technique in teaching in which the students are asked to perform and act a certain role which the purpose of the activity is to encourage the students to communicate with others. Moreover, Al-Arishi (1994) also added another point of a role-play that it is regarded as a classroom activity which is suitable for realism as it provides the learners opportunities to rehearse certain activities which they will likely perform in a real life such as: greetings, asking for directions, ordering stuff in malls, or conducting a transaction at a bank and so forth. In a role-play, the students are not only a play-actor but also a decision-maker as well since the activity encourages them to use the target language communicatively with others.

Basically, a role-play has some characteristics. According to Richard (1985), a role-play is regarded as a communicative activity which has several characteristics. Firstly, it requires opportunities for the learners to practice strategies for opening, developing, as well as closing conversational occasion. In the application of a role-play, the students will engage in several activities which can make them improving their ability to open, develop, and close interactional activity. Moreover, a role-play also encourages the learners to develop meaning collaboratively. Furthermore, it initiates the use of turn-taking rules as well as provides a high degree of learner participation. In conducting a role-play, there are two basic techniques which can be applied namely fish-bowl and multiple technique (Van Ments, 1989). Fish-bowl technique is the way in arranging the role-play in which the player of the role-play in this case is students perform the role-play in front of other students in the class. The main point of this technique is there will be only a pair or a group of students who will perform the role-play and the rest of the class will watch the role-play. In other words, all students in the class will not perform the role-play at the same time but they will do it in turn. Meanwhile, multiple technique of role-play refers to a style of arranging a role-play where all students in the class will perform a role-play in a pair or in a group at the same time then the teachers will monitor their performance.

### **2. The concept of using a role-play in teaching speaking**

Basically, the main concern of applying a task-based approach through a role-play in this context aims to improve the students' proficiency in speaking. As elaborated previously that task-based approach consists of three stages namely, pre-task, during-

task, as well as post-task (Ellis, 2003). Hence, the concept of applying a role-play in teaching speaking in this context will be developed through those stages. During pre-task activity, the teachers will make some preparations for the students to be ready in performing a role-play in the class such as dividing the students into groups, as well as preparing the scenario of the role-play. Moreover, the teachers also explain some rules in performing the role-play. In addition, in this stage the teachers need to set up the atmosphere of the class more relaxed and enjoyable. This idea is in line with what has been contended by Van Ments (1989) that before the teachers come to the application of a role-play in the class, they need to create a relaxed and joyful condition through doing a warming-up activity. The warming-up activity can be done through playing a game.

Meanwhile, on the during-task section the students start doing the task. Firstly, the students need to write the scenario of the role-play. As stated by Van Ments (1989), writing the scenario of the role-play is regarded as a helpful way for students before presenting the role-play as this activity involves ways of describing the detail scenario and the writing of briefs for each role-player. In addition, in this stage, the students will actively perform their role in the role-play. They will use the target language in presenting a role-play in the class. In this case, the teacher will monitor the students' performance in presenting the role-play. At the last, on the post-task, the teacher will conduct a debriefing activity which allows the students to get a feedback after doing a role-play. Debriefing is regarded as an important activity to be done by the teachers due to some reasons. As contended by Van Ments (1989) that in debriefing activity, the teachers make a clarification toward a role-play performing which the students have done and underline some important points which have occurred during the role-play activity. In addition, in this stage the teachers make some connections toward knowledge which the students have acquired and need to be acquired in the future.

### **The application of using a task-based approach through a role-play in teaching speaking**

In applying some theoretical frameworks which have been elaborated in the section 1 into some steps in the classroom, the elaboration of detail context where this approach applied is simply needed. The application of this teaching approach will be applied to junior high school students on the eighth grade. On this grade, the students are hopefully able to use transactional expressions (asking and giving an opinion; giving and responding to an invitation) in communicating with their friends (Indonesia's Ministry of Education and Culture, 2013). Hence, the use of the role-play in teaching speaking in this context will focus on those basic competences above. Before starting the role-play stages, the teachers need to explain the material about some expressions of asking and giving an opinion as well as giving and responding to an invitation. The teachers firstly distribute a handout to the students which contain some utterances in expressing how to ask and give an opinion as well as give and respond to an invitation. During this part, the teachers also give some examples on how to use those expressions in a dialogue. The teachers show a video which contains of some dialogues using those expressions.

Dealing with the activity of the role-play, the stages of doing the role-play will be developed through some stages based on the task-based approach. There will be three phases in applying the task-based approach through role-play namely pre-task,

during-task as well as post-task (Ellis, 2013). On pre-task phase, the teachers start eliciting the students' interest through doing a warming up activity. The teachers will play a game namely "Talking down" game which is adopted from Davison and Gordon (1978). The teachers ask the students to sit in a pair. The core point of this game is creating a relaxed atmosphere in the class before the students play the main activity namely a role-play as well as recalling the students' previous understanding toward the lesson. The teachers ask them to engage in conversation with the topic which is given by the teachers. The topic is about the lesson which has been explained previously (expression of asking and giving an opinion; giving and responding to an invitation). One student asks a question toward what lesson has been taught by the teachers then another student answers with appropriate answer. In addition, each of them also can ask some expressions which are used to ask and give an opinion as well as give and respond to an invitation. After that, the teachers tell the students that they will play a role-play in the class and ask the students to work in a pair. Then, the teachers explain some rules of playing a role-play to the students. In conducting the role-play, each group is asked to choose one card which contains a scenario of the role-play. In this case, the teachers prepare two kinds of card namely a green and a yellow card. The green card consists of the scenario in which the students need to do a role-play of asking for an opinion. Meanwhile, the yellow card describes the scenario in which the students ask to do a role-play of giving and responding an invitation.

Then, on the during-task section, the students firstly prepare for the role-play performance by writing the scenario. After each group has gotten the card, the teachers will ask them to write down some dialogues based on the scenario which they have gotten. The idea of writing the scenario before performing the role-play is line with what have been argued by Van Ments (1989) that the students are encouraged to write a scenario before doing a role-play. While the students are writing the scenario, the teachers monitor the students' activity by observing each group. In this case, the teacher takes a role as a facilitator since they will help the students in tackling the problems during making the scenario. The aim of writing the scenario does not mean that the students can read the scenario while performing the role-play. However, its purpose is to give the students overview of their role and conversation which they need to say during the role-play. In addition, the idea of applying this task-based approach through a role-play aims to encourage the students to engage using English to communicate with others in which this activity can develop the students' proficiency in speaking. After they have finished writing the scenario, they are given several minutes to do a rehearsal activity. Giving a rehearsal activity can make the students feel more confident in doing the role-play. After they have done with rehearsal activity, then each group will perform the role-play. In arranging the role-play, the teachers in this case will use a "fish bowl" technique where each group needs to perform the role play in turn (Van Ments, 1989). The use of this technique can ease the teachers to monitor the students' performance. In performing the role-play, it can be observed that the students involve in using English meaningfully and communicatively. They do a conversation based on the topic given by the teachers. The role-play which they do gives them an opportunity to interact and negotiate meaningfully with their friends (Richard, 2002).

Then at the post-task, the teachers will conduct a debriefing activity. In this phase, the teachers will give comments and feedbacks toward the students' performance. The comments which are given about some grammatical errors, pronunciation, gestures, as

well as expression in performing the role-play. Moreover, in this section the teachers also review the lesson and activities which the students have done and implicitly link today's lesson with the lesson which they are going to teach on next meeting.

### **Conclusion**

In conclusion, looking at the teaching speaking phenomenon which occurs in junior high schools of Indonesia, the idea of using a task-based approach through a role-play is implemented. The phenomenon comes out when there are many English teachers in Indonesia who merely ignore to teach speaking skill as this skill is not tested in national examination. Furthermore, they sometimes use inappropriate technique in teaching speaking. As a result, the students' speaking ability among junior high school students is low. In applying a task-based approach through a role-play, there are three stages which are applied during the learning process namely pre-task, during-task as well as post-task. On pre-task stage, the teachers will make some preparations for the students to be ready in performing a role-play in the class such as dividing the students into groups, as well as preparing the scenario of the role-play. Meanwhile, during doing task, the students will do several activities, one of them is writing the scenario. Then on the post-task, the teacher will conduct a debriefing activity which allows the students to get a feedback after doing a role-play.

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*A Little Astronomical Scientist - A Dream of a Twice-Exceptional Student*

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**Abstract**

This study is to explore a twice-exceptional student who has been identified as a visual disorder since childhood. This is a qualitative research focus on individual case studies through storytelling and taking open semi-structured in-depth interviews of visually impaired students with science talents. It is the goal of this research to discover and understand the factors, which contributed to the studying and teaching those students. Based on the research findings above, recommendations are made in these four areas: Inclusion education; Schools; Gifted Education; and Future Case Studies.

Keywords: twice-exceptional, inclusion, gifted education.

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## Introduction

The study aimed to explore the effectiveness of Inclusive Education in twice-exceptional student:

1. In the school inclusive education environment, what is the problems and needs of twice-exceptional student in adapting to school (social, interpersonal, academic, and course)?
2. In the inclusive education environment, what is the problems and needs of twice-exceptional students in life and knowledge?
3. What is the future dream for twice-exceptional students in the Inclusive Education environment now?

This study is used interview study, the researcher were used the semi-structured interview to significant person, teachers, resource class teacher, and this twice-exceptional student ,every interview used about forty minutes per person and every person interview at least five times. And the researcher went into the classroom, and classroom observation sine 20170202, and every weekend once time until 20170630. Then, the researcher collected the interview data form in the verbatim text ,and then to found the results. Finally, the researcher place related interviews were further confirmed.

Item	Source from	Data record mode
Interview time	2017/05/22	20170522
Interview person	General teacher	GT
	Mother	M
	Resource class teacher	RCT
The verbatim text collect meant	Researcher interview his mother at April 15 ,2017, and the verbatim text would record 20170415M.	

Figure 1: Data coding and analysis.

The data showed that the twice-exceptional student in the inclusion environment may melt the problem:(1) General teacher instruct twice-exceptional students still face difficulties ;(2) Parents have difficulty to choose the school for their child. Because if twice-exceptional students transfer to other schools may happened occurrence adaptation problem; (3) Gifted education could not service enough to all of the gifted and talented students.

## Conclusion

This study found the conclusion was:

1. If general teacher are good perception of twice-exceptional student, it could benefits to all of the students.
2. General teachers work with teachers or resource teachers well can help twice-exceptional students more adapt the campus environment.
3. The parents' correct expectation, encouragement and support also affect the twice-exceptional students mind and body, it could promote twice-exceptional students are willing to try and challenge the difficult things.
4. If parents could respect teachers, it could encourage teachers have willing to treat twice-exceptional students in positive way.
5. If gifted students with disabilities, they could development their talent, it could help them more confident and help them to cooperate with other students. When twice-exceptional students have more confident it could help them to show themself.

And this study recommend was:

1. The teacher training or the pre-service training should be more courses of the twice-exceptional students characteristics and special needs. And the advanced courses could teach them that how to teach twice-exceptional students.
2. To establish a consultation platform for general teachers, resource classroom teachers, gifted teachers and parents, let them to use the consultation platform to teach their students.
3. The government could show the school physical and psychological environment that parents could collect the information to choose the right school for their child.
4. The government and education authorities should provide appropriate services for twice-exceptional students that could avoided the school do not have gifted resource classroom that didn't provide the gifted education services for those whom talented and gifted students. The local government should provide punctate or zonal service to those students.

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***Promoting Culture and Heritage through a Route of Fairy Tales in France***

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**Abstract**

French and German tales have been influenced by stories of the Bible, Greco-Roman myths, and medieval legends. All these stories are in constant evolution and are adapted to the language and culture of each country that produces them. This study will discuss the value in cultural tourism of stories and storytelling. In Germany, people are nowadays promoting their culture and heritage through ‘The German Fairy Tale Route’, a 600 kilometers long tourist attraction established in 1975, from Hanau to Bremen. Most places on the route are associated with the Grimm brothers’ life and their collection of tales, such as the town of Alsfeld, known for its House of Little Red Riding Hood and Sababurg Castle, referred to as the Sleeping Beauty Castle. It would be economically and culturally valuable to open such a route in France. Even though some French castles such as Ussé and Breteuil are already marketing their connection to Perrault and his stories, there is no French route of fairy tales. This study proposes therefore to open such a route and presents historical information on the life of Charles Perrault and on a number of French castles associated with his tales.

Keywords: French fairy tales, Perrault, French castles, German route of fairy tales

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## Introduction

Even though various studies have been published on the historical evolution of fairy tales and their meaning, there is very little research on how they are used or can be used to promote cultural tourism. Research assists understandings of these tales with a view to helping attract more visitors in the countries where they were written and published, such as in France and Germany.

According to Zipes (2015, online version):

Literary fairy tales are culturally marked: they are informed by the writers, their respective cultures, and the socio-historical context in which the narratives are created. Only by considering these factors can one point to the particular Italian, French, German, or English affiliations of a tale. Basically, fairy tales have a paradoxical disposition that accounts for their particularity: they contain ‘universal’ motifs and components that writers borrow consciously and unconsciously from other cultures in an endeavor to imbue their symbolical stories with very ‘specific’ commentaries on morals, mores, and manners.

Charles Perrault (1628-1703) modified the traditional folklore to fit his audience; that is, the French aristocrats (Lydie, 2007). Like most writers, he was looking for recognition in the literary salons. During the second part of the 17<sup>th</sup> century, it was fashionable to be a ‘précieux’. Préciosité (preciosity) was a notable literary movement that enjoyed witty conversation and the retelling of fairy tales in salons opened by rich and educated ladies, such as Madeleine de Scudéry (1607-1701), Madame de La Fayette (1634-1693), and la Marquise de Lambert (1647-1733). Perrault’s great success was to be able to retell folktales by defending morality and adding ‘moralités’ aimed at the education of adolescents about to marry, which is the ultimate goal in fairy tales as successful heroes always wed their soulmate, and by using precious vocabulary to respect the requirements of the salons (Lydie, 2007). Of course, Perrault, who was forced to retire after the death of his patron Colbert, also spent more time with his children and wrote these stories to entertain them (Collinet, 1981).

At the beginning of the 19<sup>th</sup> century, the Brothers Grimm had a different purpose. The German-born American academic Maria Tatar (1945) writes that the brothers’ goal was to preserve the collected tales as something uniquely German at a time of French occupation; that is, during and after the invasion of the Holy Roman Empire by Napoleon's French Empire (Grimm, Tatar, & Byatt, 2004).

## The German Fairy Tale Route

The Brothers Grimm, Jacob (1785–1863) and Wilhelm Grimm (1786–1859), were German academics, philologists, and authors, who collected and published folk tales, such as *Cinderella*, *The Frog Prince*, *Hansel and Gretel*, *Rapunzel*, *Sleeping Beauty*, and *Snow White*. Their first collection, *Children’s and Household Tales*, was published in 1812.

The German Fairy Tale Route or Märchenstraße is a tourist attraction established in 1975. The route begins in the south with Hanau, the birthplace of the Grimm brothers. The 600 kilometers long route ends in Bremen, which is associated with The Town Musicians of Bremen. According to a blog at [itinerariesnow.com](http://itinerariesnow.com), the best period to travel on the route is from April to October; it takes around a week.



Picture 1: The German Fairy Tale Route website, English version  
(source: [http://www.deutsche-maerchenstrasse.com/en/?lang=en\\_US](http://www.deutsche-maerchenstrasse.com/en/?lang=en_US))

Among the most interesting places to visit on the route:

- The brothers were born at No. 1 Paradeplatz, now called Freiheitsplatz in Hanau (Hesse) and spent their formative years there. Syrius Eberle (1844-1903) was a German sculptor and art professor, who designed a sculpture of Brothers Grimm in Hanau (the formal unveiling of the monument took place in 1896).
- The childhood home of the Grimm brothers is in Steinau (Hesse); they lived there until 1796, when their father Phillip died. The brothers left Steinau and their family in 1798 and went to school at the Friedrichs gymnasium in Kassel. There is a fairytale fountain, a puppet theatre and a castle in Steinau.
- Kassel, called the “Capital of the German Fairy Tale Route”. The brothers Grimm spent most of their lives in this city located on the Fulda River in northern Hesse. Their fairy tales were compiled there, edited and later translated into 160 languages. The city notably houses a Museum of the Brothers Grimm (known as Grimmwelt Kassel).
- The brothers studied in Marburg, a university town in Hesse. A tower in Amönau near Marburg is called Rapunzel's Tower. The Grimm Brothers' story is an adaptation of *Rapunzel* by Friedrich Schulz (1790), which is an adaptation of *Persinette* by Charlotte-Rose de Caumont de La Force (1698).
- Reinhardswald is a range of hills in the district of Kassel; the area is notably famous for Sababurg Castle, dating from the 14<sup>th</sup> century and known as the



travel on a route of tales, probably from the north to the south of France; the departure point and the arrival point should be close to an airport or a TGV (French high speed train) station. Of course, visitors could choose to travel on the entire route or on some specific sections. In Germany as well as in France, many sites are listed on the UNESCO heritage list, which considerably increases the touristic attraction of some of the cultural sites on the proposed route.

### **Perrault's life and work**

Charles Perrault (1628-1703) was born in a bourgeois family, the seventh child of Pierre Perrault and Paquette Le Clerc. In 1636, Charles began studies at the College of Beauvais, a private secondary school in the Rue Saint-Jean-de-Beauvais in Paris. In 1643, he left school with his companion, Beaurain, to pursue study independently for three or four years. On July 27, 1651, he was granted a degree in law from the University of Orléans. When he was 26, he became the clerk of his brother Pierre, receiver-general in Paris. Charles political career really began in 1663 when he was appointed secretary of the Academy of Inscriptions and Belles-Lettres, a position he won after writing a poem that pleased the all-powerful Minister of Finances of Louis XIV, Jean-Baptiste Colbert (1619-1683).

Perrault's political ascension is impressive: he not only took part in the foundation of the Academy of Sciences and the restoration of the Académie des Beaux-Arts, but was also elected to the French Academy (1671). Moreover, in 1672, he got elected Chancellor of the Academy. Colbert even made Perrault General Controller of Buildings, a new position created especially for him. The public servant under Louis XIV had a more difficult private life as the woman he married in 1672, Marie Guichon, passed away in 1678 after giving birth to a daughter. Charles was left alone to raise his daughter as well as three sons. After Colbert forced him to retire from public service in 1682, he dedicated his life to his children and began to write "fairy tales", an expression first coined by Madame d'Aulnoy, who termed her books *Les Contes des Fées* (Tales of Fairies) in the 1690s.

The three verse tales written by Charles were published under his own name. In 1691, he published *La Marquise de Salusses ou la Patience de Grisélidis* (The Marquise of Salusses, or the Patience of Grisélidis), which was read at the Académie française; in 1693, *Les Souhairs ridicules* (The Ridiculous Wishes), dedicated to Philis de la Charce (1645-1703), a famous heroine honored by Louis XIV; *Peau d'Âne* (Donkey Skin) was published in 1694.

Contrary to the verse tales, the prose tales were published under the name of his last son, Pierre Perrault Darmancourt, born in 1678. Armancourt was the name of a property that Charles bought for his son. It is difficult to be sure why Perrault did not write under his own name. He probably thought that he would be violently criticized, as fairy tales were not a recognized genre at that time. Perrault was involved in the *Querelle des Anciens et des Modernes* (*Quarrel of the Ancients and the Moderns*), which divided the 'Ancients', that is, writers and thinkers who believed the literature of Antiquity could not be surpassed, and the 'Moderns', those like Perrault, who were

convinced that the literature of *Le Siècle de Louis le Grand* (The Century of Louis the Great, title of Perrault book published in 1687) was superior. The 1695 manuscript entitled *Les Contes de ma mère l'Oye* (*Tales of Mother Goose*) pre-empts the Brothers Grimm, and includes the prose tales of *La Belle au bois dormant* (*Sleeping Beauty in the Woods*), *Le Petit chaperon rouge* (*Little Red Riding Hood*), *La Barbe bleue* (*Bluebeard*), *Le Maître chat ou le chat botté* (*The Master Cat, or Puss in Boots*), and *Les Fées* (*The Fairies*; Montoneri, 2013). The 1697 book entitled *Histoires ou contes du temps passé* (*Stories or Tales of Times Past*) contains the previous tales plus three new ones: *Cendrillon ou La Petite pantoufle de verre* (*Cinderella, or the Little Glass Slipper*), *Riquet à la Houppe* (*Riquet with the Tuft*), and *Le Petit Poucet* (*Little Tom Thumb*).

### **Places associated with Perrault and his family**

When Charles became First Commissioner of Royal buildings in 1665, he appointed his brother Claude architect of the east range of the Louvre (construction: 1665-1680); Claude also constructed the Observatory of Paris. Because these places are closely associated with Charles and his brothers, they could be added as sites to visit on the French route of fairy tales.

#### ***Observatoire de Paris***

The Observatory of Paris is one of the largest astronomical centers in the world. It is situated on the Left Bank of the Seine in central Paris. The architect of the Observatory was Claude Perrault (1613-1688). The building was completed in 1671. Claude was a brilliant architect, but also an author, a physician and an anatomist. He notably obtained the degree of Doctor of Medicine from the University of Paris.

#### ***Le Louvre***

A committee including Louis Le Vau, Charles Le Brun, and Claude Perrault, began to work on the east façade of the Louvre in 1668. The definitive design of the façade is attributed to Perrault, who even won over Gian Lorenzo Bernini (1598-1680), who came to France to join the competition. This work is considered a masterpiece of French Architectural Classicism, clearly influenced by Roman architect Vitruvius (circa 80-15 BC). Claude Perrault made an acclaimed translation of the ten books of Vitruvius into French (1673).

In 1669, Perrault advised the Louis XIV of France to build thirty-nine fountains, each one representing a fable written by renowned Greek fabulist and story teller Aesop (c. 620-564 BC) in the gardens of Versailles. A hedge maze was built in 1672 near the Orangerie. Each fountain was dedicated to one of Aesop's fables and water jets were spurting from the animals' mouths. Perrault wrote a guidebook for the labyrinth that was finished in 1677. It was a success and the garden became quickly famous, in France and abroad. Sadly, Louis XVI removed the labyrinth in 1778 and replaced it with an English-style garden.

## The Castles Connected to Perrault's Fairy Tales

### *Château d'Ussé*

Château d'Ussé is situated west of Azay-le-Rideau, close to the River Loire, in the Indre-et-Loire department. It was originally built around 1,000 AD by Viking warrior Gelduin I. During the Hundred Years War, the fortress was owned by Charles VII's captain, Jean V de Bueil (1406–1477); called le Fléau des Anglais 'plague of the English'. Later, the castle's new owner was Louis Bernin de Valentinay (1627-1709), Louis XIV's Controller-General of Finances. Louis was well-connected and married well, none other than the daughter of the Maréchal de Vauban (1633-1707), the foremost military engineer of the 17<sup>th</sup> century, who made alterations to the terraces at Ussé in 1664. Le Nôtre (1613-1700), who designed the gardens at Versailles, was responsible for the creation of the park and the gardens at Ussé. Charles Perrault visited the castle several times and is said to have been inspired by the magical atmosphere and the incredible architecture. Later, many other famous Frenchmen visited the castle, such as Voltaire and Chateaubriand (Info Tours, 2016).

Ussé was classified as an historical monument in 1931. Nowadays, Casimir de Blacas d'Aulps, the 7<sup>th</sup> Duke of Blacas, is the owner of the castle. Since 2000, Ussé is part of the area of the Loire Valley between Sully-sur-Loire and Chalonnes, which has been added to UNESCO World Heritage List (UNESCO, 2000). There are around 50 mannequins in the castles, many along the sentry walk and in specially decorated rooms which illustrate scenes from Sleeping Beauty, such as when she pricks her finger on the spindle and when she is awoken by Prince Charming. The castle takes full advantage of its connection to Perrault and Sleeping Beauty. Interestingly, the mannequins obviously resemble the characters as depicted in Disney's 16<sup>th</sup> animated feature film (1959), which was based on Perrault's fairy tale, even though there are many differences: in the movie, the princess is named 'Aurora' (Latin for 'dawn'), as in the original Tchaikovsky ballet (1890). In Perrault's version, Aurora is the name of the princess's daughter. The original wicked nameless fairy godmother became a wicked witch and was named Maleficent in Disney's movie.



Picture 3: Ussé's official website  
(source: <http://www.chateaudusse.fr/belle-au-bois-dormant/?lang=en>)

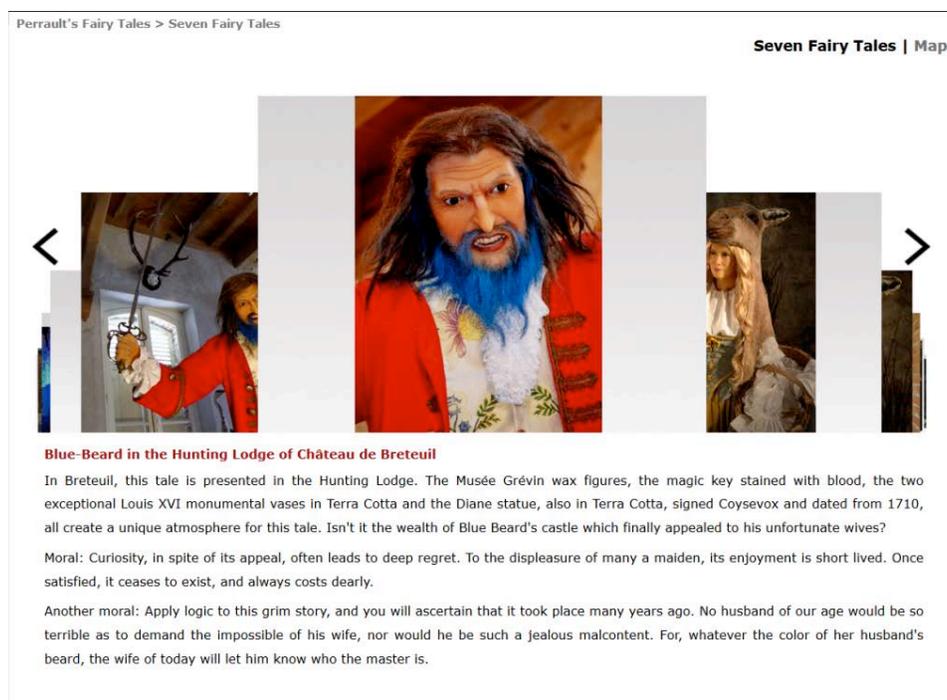


Picture 4: Illustrated eBook with pictures of the fairy tale  
(source: <http://www.chateaudusse.fr/belle-au-bois-dormant/?lang=en>)

### *Château de Breteuil*

Château de Breteuil is situated in the Vallée de Chevreuse in Choisel, Yvelines department, 20 kms from Versailles. It was built at the beginning of the 17<sup>th</sup> century (1604-1610). Henri-François de Breteuil (born in 1943), the 10<sup>th</sup> Marquis, is the current owner of the castle, which was open to the public in 1969. In an interview given to the oldest national daily paper in France, *Le Figaro* (2015), the marquis said his father wanted to sell the château, which would have become a luxury hotel. Henri-

François and his mother refused and asked for French Minister of Cultural Affairs André Malraux's help to list the site as an historical monument (1973). According to Henri-François, his father said: 'Tu fais la plus grande erreur de ta vie.' (You just made the biggest mistake of your life; Le Figaro, 2015). Keeping and saving the family castle became a crusade, which lasted for more than two decades. Nowadays, the château is not only a family estate, but a successful business: it welcomes more than 100,000 visitors per year. The castle highlights the connection of Henri-François's family to Perrault and his collection of tales. Perrault worked for Louis Nicolas Le Tonnelier de Breteuil (1648–1728), finance minister for Louis XIV. There are fifteen 'Puss in Boots' automatons on the property, created by designers Janie and Armand Langlois. In the outbuildings, there are wax figures illustrating scenes from seven of Perrault's tales, such as *Blue Beard*, *Cinderella*, *Puss in Boots*, etc. Among the 50 waxwork figures from the Musée Grévin are not only fairy tales characters, but also world renowned people associated with the Breteuil family and the castle, such as Marie-Antoinette, Louis XVI, and Marcel Proust. The château is also introducing the life of mathematician Émilie du Châtelet (1706-1749), Louis de Breteuil's daughter. She was the first woman to have a scientific paper published by the Academy and she was, among other things, famous for her translation of Newton's *Principia* into French.



Picture 5: Illustrated webpage with pictures of wax figures of the Blue Beard, Donkey Skin and other fairy tales characters (source: <http://www.breteuil.fr/en/Perrault-Fairy-Tales/seven-fairy-tales.html>)

### ***Château de Tiffauges***

Château de Tiffauges is situated in the French commune of Tiffauges in the Vendée department. The donjon, the gate tower, the walls and the chapel were built by the powerful Viscounts de Thouars in the 12<sup>th</sup> century as a formidable stronghold because of its strategic position and design. Gilles de Rais (1404–1440), often called Barbe Bleue, was once the owner of the château. The character of Bluebeard derives from legends related to historical individuals, notably the Breton nobleman and later self-confessed serial killer, Gilles de Rais. He became infamous because of his obsession with alchemy and because he was found guilty of the murder of many children. When he was around 10 years old, his mother became ill and died and his father was killed whilst hunting. Later, he married his own cousin, Catherine de Thouars (Tiffauges belonged to the Thouars). Gilles was a commander in the French royal army between 1427 and 1435. He became famous for bravery on the battlefield, but began to show signs of brutality. In 1429, he met 17-year-old Joan of Arc and followed her to Orléans with the blessing of The Dauphin (“heir to the French throne”: Charles VII, King of France from 1422 to 1461). Gilles was probably in love with Joan and shared her deep piety. He notably contributed to the building of many churches and one cathedral. He was surely shocked and heartbroken when she was burnt at the stake in 1431, even though he was appointed Marshal of France and became richer than ever because of his role during various battles that finally led to French victory. In September 1440, he was arrested at Machecoul and indicted on 34 counts of murder, conjuring up demons and ‘vices against nature’. Gilles notably admitted the murder of children, but denied the charge of devil worship. However, he seemed to have been fascinated with the occult, learnt alchemy, and tried to make gold. He was executed on 26<sup>th</sup> of October 1440 at Nantes. The place was later left abandoned in ruins. During the 19<sup>th</sup> century, the castle became known as the ‘château de Barbe Bleue’ (Blue Beard’s castle). It is now owned by the Conseil Général of Vendée, which helped revive the past by hosting a series of spectacles in relation with the Middle Ages and the story of *Blue Beard*. There is notably a 30-minutes spectacle entitled ‘Gilles de Rais, l’Ombre et la Lumière’ (Darkness and Light), telling the story of this fascinating and scary character. Incredibly, Gilles spent his fortune in lavish entertainment and even produced a theatrical spectacle called ‘The Mystery of the Siege of Orleans’.

### ***Châteaux d'Oiron et de Crazannes***

Château d'Oiron is located in Oiron, in the Deux-Sèvres département. King Charles VII (reign: 1422-1461) gave the domain and forest of Oiron to Guillaume Gouffier (1488-1525), governor of Touraine and tutor of King Francis I. Guillaume’s nephew, Claude Gouffier (1501-1570), Master of the King's Stables, served as the model for Charles Perrault's "Marquis de Carabas" in his story, *Puss in Boots*. Perrault made a few allusions to famous people, such as Pierre-Paul Riquet (1609-1680), the nobleman and engineer responsible for the construction of the Canal du Midi, one of the great feats of the 17<sup>th</sup> century. He is of course remembered as ‘Riquet with the Tuft’ (Riquet à la Houpe), the main character in one of the tales published by Perrault in 1697. As to Claude Gouffier, he was a famous book collector and patron of the arts. In the *Puss in Boots* tale, the young boy is sometimes called ‘marquis’ and

sometimes ‘comte’ (Perrault, 2006, 137). Is it an error? Claude was granted knighthood in 1533, created comte de Maulevrier in 1542, marquis de Boisy in 1564 and comte de Caravaz. He was also created duc de Roannais in 1556 (Chenaye-Aubert, 1774, 324). Perrault got probably confused by all of Gouffier’s titles. Some sources say that Claude was Marquis de Boisy and Caravaz (Hewitt and Martin, 1931) and others that he was Marquis de Boisy and comte de Caravaz (Bunel, 2011). According to Zvereva (2005), the Marquisate of Boisy and the Barony of Roannais became a duchy in 1566, but Caravaz is not mentioned. Later, the castle was sold to Madame de Montespan (1640-1707), Louis XIV’s mistress; she spent the rest of her life in the castle and restored it. Château d’Oiron was ransacked during the French Revolution and then left in ruins. During the 20<sup>th</sup> century, the French State listed the castle as an historical monument (1923), and then the Ministry of Culture converted it into a museum. Château d’Oiron is now public property; it notably houses a Cabinet of Wonder (Cabinet of Curiosities), containing scientific and zoological artifacts, as well as a wax figure of Claude Gouffier himself.

### ***Château de Crazannes***

Château de Crazannes is situated in the town of Crazannes, Charente-Maritime, on the southwestern coast of France. A fortress was first built in the 11<sup>th</sup> century. The dungeon and the Romanesque chapel still remain to this day. A ‘modern’ castle was built on the site of the fortress during the 14<sup>th</sup> century. Many famous people came to the castle, including Edward of Woodstock, called the Black Prince (1330-1676) and the prodigious patron of the arts, French king Francis 1 (reign: 1515-1547). The castle was owned by various families, including the family of the ‘Marquis de Carabas’. Since the 17<sup>th</sup> century, Crazannes is known as the castle of *Puss in Boots* because it belonged to the Gouffier family (the sister of Louis Acarie de la Rousselière, who owned Crazannes, married Jules Gouffier). At the beginning of the 20<sup>th</sup> century, the chateau was in ruins, but Roger Chaudruc decided to buy it and in 1903, it was listed as an historical monument. More recently, following the divorce of the last owners, Hervé Pasté de Rochefort and his wife Hélène, the castle was sold to new owner in 2010 for one million three hundred euro. Jean-Pierre Giambiasi and his wife Marie-Claude intend to preserve the heritage by restoring the chateau. Crazannes is still open to the public; it also welcomes guest as a bed and breakfast: there are five rooms, including a ‘room of Puss in Boots’, a family suite for 4 persons.



Picture 6: Illustrated webpage of Crazannes with mention of *Puss in Boots*  
(source: <http://www.crazannes.com>)

According to Crazannes's website (see picture 6 above), Jules Gouffier was the inspiration for Perrault's tale, but it is certainly a mistake. Jules (born in 1636) was comte of Passavant, but not of Caravaz (Moréri, 1759, 296).

### Filming Locations Connected to Perrault's Tales

Historical movies are often shot in French castles, notably adaptations of French fairytales, such as *Cinderella* and *Donkey Skin*.

#### *Château du Plessis-Bourré*

Château du Plessis-Bourré is situated in the Loire Valley, in the commune of Écuillé (Maine-et-Loire department). Jean Bourré (1424-1506), Finance Minister to King Louis XI (reign: 1461-1483), built the castle in 1472. Henry Vaïsse became the castle's owner in 1911. It was listed as an historical monument in 1931. The château became the property of François Reille-Soult, Duke of Dalmatie, in 1956. Being part of the Loire valley, it was added to the UNESCO heritage list in 2000. Since 2010, Aymeric d'Anthenaise and Jean-François Reille-Soult de Dalmatie are the managers. The famous French director Jacques Demy (1931-1990; French New Wave; director of *The Umbrellas of Cherbourg* in 1964 and *The Young Girls of Rochefort* in 1967) filmed *Peau d'Âne* (*Donkey Skin*) at Plessis-Bourré in 1970. In 1694, Perrault published a collection of verse tales, including *Peau d'Âne*. The tale was dedicated to the marquise de Lambert (1647-1733), because Perrault was frequenting her literary salon. The movie is an adaptation of Perrault's story, starring Catherine Deneuve and Jean Marais. According to Hill (2005), Demy was fascinated by Perrault's tale and began to write a script in 1962. His movie contains many references to Jean Cocteau's *Beauty and the Beast* (1946), also starring Jean Marais. Live actors were famously used to portray human statues. Many other movies were filmed at Plessis-Bourré,

such as *Le Bossu (On Guard)*, with Daniel Auteuil in 1997) and *The Princess of Montpensier* (with Mélanie Thierry and Lambert Wilson in 2010).

### ***Château de Hautefort***

Château de Hautefort is situated in Hautefort, in the department of Dordogne. The medieval fortress owned by Guy de Lastours, around the year 1000, was transformed into a castle in the 17<sup>th</sup> century by the Lords of Hautefort. French style gardens and an English style park were added during the 19<sup>th</sup> century. The industrialist Bertrand Artigues bought the castle in 1890, but when he died, the place was left in ruins. Baron Henry de Bastard became the new owner in 1929. After a terrible fire in 1968, the château was restored. 1998 movie *Ever After*, inspired by *Cinderella* was shot at Hautefort and in Dordogne. Interestingly, the movie begins with the Brothers Grimm visiting Château de Hautefort to meet with a Grande Dame (Jeanne Moreau) who tells them the ‘true’ story of Cinderella, that is, the story of her ancestor from the 16<sup>th</sup> century, Danielle de Barbarac (Drew Barrymore). The Dame shows the two brothers her glass slipper. In the movie, Prince Henry, son of King Francis I, saves Leonardo da Vinci (and the Mona Lisa) from robbers. Château de Fénelon and Château de Beynac (Dordogne) are also filmed in the movie.

### **Conclusion**

The author wrote a working paper in French years ago on French fairy tales and castles. It was never published; however, it is available online (Montoneri, 2011). The present study is an opportunity to resume my work, to develop it, and to update it. Hopefully, the idea to create a French route of fairytales won’t be lost. To bring it to fruition, one would have to contact the owners of all the places related to Charles Perrault and his tales. It would be culturally and financially valuable to open such a route, but the success of this enterprise would also require the involvement of the Ministry of Culture. This research can only give suggestions and information on places worth adding to the route. Of course, many others could be added.

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***Strategies for Learning Kanji Vocabulary among Thai Students Who Studied Japanese Courses as an Elective in Higher Education***

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**Abstract**

The purposes of this research were 1) to study how Thai students who chose Japanese as elective courses learned the kanji vocabulary and 2) to study the differences in using strategies for learning kanji vocabulary between beginning and intermediate learners. The sample population of this research consisted of 80 students, who were divided into two groups. The first group consisted of 40 beginner learners and the second group was 40 intermediate learners. The data collection was conducted using 25-item questionnaires on strategies for learning kanji vocabulary, which involved four strategies: the writing-based vocabulary learning strategy, pronunciation-based vocabulary learning strategy, meaning-based vocabulary learning strategy, and usage-based vocabulary learning strategy. The data analysis involved descriptive statistics, mean values ( $\bar{X}$ ), and standard deviations (SD). The research findings found that 1) the students mostly used the writing-based vocabulary learning strategy, followed by the meaning-, pronunciation-, and usage-based vocabulary learning strategies, respectively and 2) beginners mostly applied the writing- and meaning-based vocabulary learning strategies, while the most popular strategies for memorizing kanji vocabulary among intermediate learners were the meaning- and pronunciation-based vocabulary learning strategies. The recommendation based on this research is that in addition to the writing- and meaning-based vocabulary learning strategies, students should be encouraged to memorize kanji vocabulary using the pronunciation and usage-based strategies.

Keywords: Learning Strategies , Kanji Vocabulary, Japanese Learners

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### Introduction

A survey by Motona Okamoto (2000: 111) on the difficulties in learning Japanese amongst native Thai students revealed that native Thai learners thought that the most difficult part for learning Japanese is kanji, followed by grammar.

Table 1 Difficult Areas for Learning Japanese (Motona Okamoto, 2000: 111)

	The Japanese Foundation	Chulalongkorn University	University of the Thai Chamber of Commerce	High school	Rajabhat University	*TPIF (General public)	*TPIF (Student)
No.1	Kanji 50%	Grammar 73.2%	Kanji 62.3%	Grammar 83.8%	Kanji 65.9%	Kanji 40.9%	Kanji 63.3%
No.2	Grammar 37.5%	Honorifics 37.5%	Grammar 54.1%	Kanji 51.4%	Grammar 50.0%	Pronunciation 38.6%	Grammar 43.3%
No.3	Honorifics 31.3%	Kanji 33.9%	Honorifics 32.8%	Pronunciation 40.5%	Pronunciation 47.7%	Katakana 36.4%	Pronunciation 30.0%
No.4	Pronunciation 12.5%	Pronunciation 16.1%	Pronunciation 16.4%	Honorifics 40.5%	Katakana 9.1%	Grammar 29.5%	Katakana 20.0%
No.5	Vocabulary 3.1%	Listening 7.1%	Katakana 5.0%	Katakana 5.4%	Honorifics 4.5%	Honorifics 11.4%	Honorifics 6.7%

Remark\* Technology Promotion Association (Thailand-Japan).

One of the major reasons why learning kanji is difficult is because of the kanji characteristics, which contain a lot of information, including shapes, sounds, meanings, and usage.

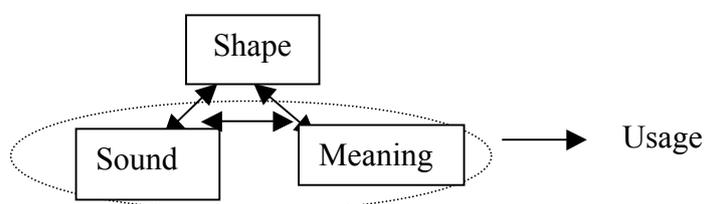


Figure 1 Kanji Characteristics (From “Teaching Kanji for Japanese Teachers,” p. 171).

The Japanese-Language Proficiency Test, or JLPT (Japan Foundation, 2006), indicates the number of kanji characters that students at each proficiency level should learn – 1,926 kanji characters for Level 1; 1,023 for Level 2; 284 for Level 3; and 103 for Level 4, which totaled 3,336 characters. While there are only 26 letters in the English alphabet, there are over 3,000 kanji characters, which are not easy to memorize. In addition, kanji characters have complex shapes, with the most complex one composed of 64 lines.

A kanji character carries Chinese sound and Japanese sound. For example, 「行」 can be pronounced 「ぎょう」, 「こう」, 「あん」, 「い」, 「おこな」, 「ゆ」. In addition, there are many kanji characters that are homophones. For example, the characters 九、苦、区、句、俱、玖、供、玖、矩、駙、駒、口、

紅、宮、孔、貢、 and 工 share the same sound, which is [ku]. Learning kanji characters that carry many different sounds is time-consuming.

Apart from shapes and sounds, complexities of kanji characters involve semantic and usage aspects. For example, 「新」 in 「新しい」 reads [atara], which is used as an adjective, as in the sentence: 「新しいかばん」. However, the character 「新」 in 「新たな」 reads as [ara], which is used as an adjective verb as in the sentence: 「新たな証拠」.

The above-mentioned examples manifest that kanji characters are complex in terms of shape, sound, meaning, and usage. To allow learners to understand and use kanji for listening, speaking, reading and writing, they need to remember, understand, and practice using kanji in these four skills.

However, the study by Bussaba Banjongmanee et al. (2011) on the ability to recognize kanji information amongst native Thai beginning learners found that native Thai beginning learners who were study participants were good at distinguishing kanji shapes, but they failed to link their shapes to their meanings or link their shapes to their sounds. This might result from the style of classroom instruction which focused on kanji shapes. To teach kanji vocabulary, instructors mostly selected 5-10 kanji words from each lesson and asked their students to repeatedly write these words. In addition, they asked their students to write kanji words based on hiragana pronunciations. Then, they asked them to translate these kanji words into Thai and read the kanji words repeatedly until they remembered these words. This instruction method allowed learners to remember kanji vocabulary and earn good scores on kanji vocabulary tests. However, in real usage, they were not able to write, read, or understand the meanings of, kanji words which they had already learned. Some learners recognize kanji characters in writing forms but did not understand them when they heard them. The study by Miyagi Nakamura (2007) indicated that knowledge about kanji words was not only important for reading and writing, but also important for capturing the main ideas of listening messages. The research by Somchai (2008) on opinions about kanji learning among beginning learners found that the students had problems relating to pronunciation and meanings of kanji.

It is apparent that memorizing kanji is a major obstacle to learning Japanese among native Thai students. Because there have only been a small number of studies on kanji learning-related issues, it was essential to investigate kanji vocabulary learning strategies used by native Thai learners. This aimed to identify key factors that are obstacles to such learning in order to optimize kanji instruction in the future.

### **Research Objectives**

1. To study kanji vocabulary learning strategies amongst students who study Japanese courses as an elective.
2. To study the use of kanji vocabulary learning strategies amongst beginning and intermediate learners.

## Research Methodology

1. The population of this research was 80 native Thai students who studied Japanese courses as an elective. They were from the Tourism Management Program, the Faculty of Management Science, Silpakorn University and the University of the Thai Chamber of Commerce.
2. The tool for this research was a questionnaire about kanji vocabulary learning strategies, comprising two parts, as follows:
 

Part 1: General data: first name-surname, age, gender, the Japanese proficiency level based on the Japanese-Language Proficiency Test (JLPT), duration of learning Japanese, Japanese vocabulary textbooks, and duration of learning kanji (six items).

Part 2: Kanji vocabulary learning strategies, divided into four areas – the writing-based vocabulary learning strategy, pronunciation-based vocabulary learning strategy, meaning-based vocabulary learning strategy, and usage-based vocabulary learning strategy. (25 items)
3. Variables and statistics used in this study consisted of mean values ( $\bar{x}$ ) and standard deviations (S.D.). The average scores were divided into five levels, as follows:

- Level 5: Means: 4.50-5.00: Always use the strategy.
- Level 4: Means: 3.50 to 4.49: Often use the strategy.
- Level 3: Means: 2.50 to 3.49: Sometimes use the strategy.
- Level 2: Means: 1.50 to 2.49: Hardly ever use the strategy.
- Level 1 average 1.00- 1.49: Never use the strategy.

## Conclusion

As mentioned above, the kanji vocabulary learning strategies were divided into four categories: the writing-based vocabulary learning strategy, pronunciation-based vocabulary learning strategy, meaning-based vocabulary learning strategy, and usage-based vocabulary learning strategy. The findings of the research are as follows:

Table 2: Kanji Vocabulary Learning Strategies amongst Native Thai Learners

Types of strategies	$\bar{x}$	S.D.	Level of strategy use
The writing-based vocabulary learning strategy.	4.60	0.62	Always
The pronunciation-based vocabulary learning strategy.	3.31	0.72	Sometimes
The meaning-based vocabulary learning strategy.	4.08	0.72	Often
The usage-based vocabulary learning strategy.	2.35	0.87	Hardly ever

Table 2 indicates that these native Thai learners mostly used the writing-based vocabulary learning strategy, followed by meaning-based vocabulary learning

strategy, the pronunciation-based vocabulary learning strategy, and the usage-based vocabulary learning strategy, respectively.

Table 3: Comparison of Kanji Vocabulary Learning Strategies between Beginning Learners and Intermediate Learners

Types of strategies	Beginning learners		Intermediate learners	
	$\bar{x}$	S.D.	$\bar{x}$	S.D.
The writing-based vocabulary learning strategy.	4.76	0.46	4.43	0.71
The pronunciation-based vocabulary learning strategy.	3.25	0.69	3.38	0.74
The meaning-based vocabulary learning strategy.	4.15	0.67	4.02	0.77
The usage-based vocabulary learning strategy.	2.06	0.53	2.33	0.81

Table 3 shows that the beginning learners mostly used the writing-based vocabulary learning strategy ( $\bar{x} = 4.76$ , S.D. = 0.46) and the meaning-based vocabulary learning strategy ( $\bar{x} = 4.15$ , S.D. = 0.67). The intermediate learners mostly applied the writing-based vocabulary learning strategy more than ( $\bar{x} = 3.38$ , S.D. = 0.74) beginning learners ( $\bar{x} = 3.25$ , S.D. = 0.69). The meaning-based vocabulary learning strategy was used the least frequently by both groups.

This research also found that both groups of learners mostly memorized kanji vocabulary through frequent writing ( $\bar{x} = 4.59$ , S.D. = 0.50), writing kanji characters in their notebook or vocab book ( $\bar{x} = 4.73$ , S.D. = 0.59), and using vocabulary cards ( $\bar{x} = 4.60$ , S.D. = 0.67). This finding was consistent with that of the study by Pailin Klinkesorn (2015), which found that Japanese learners mostly memorized Japanese vocabulary by writing Japanese words repeatedly and jotting down Japanese words while they were in class. In this research, the frequently-used strategies consisted of looking up the meanings of kanji words in dictionaries ( $\bar{x} = 4.06$ , S.D. = 0.75), forming pictures of kanji characters in their minds ( $\bar{x} = 3.93$ , S.D. = 0.85), and finding the antonyms, synonyms and associated words of kanji words and memorizing them along with these kanji words ( $\bar{x} = 4.41$ , S.D. = 0.61). This was in line with the research by Supalak (2013), which identified that learners mostly used Japanese-Thai dictionaries to look up the meanings of kanji words. With regard to the pronunciation-based vocabulary learning strategy, both groups of learners sometimes listened to CDs and repeated what they heard ( $\bar{x} = 3.29$ , S.D. = 0.77), linked kanji pronunciations to their meanings ( $\bar{x} = 3.23$ , S.D. = 0.84), and linked kanji pronunciations to their characteristics ( $\bar{x} = 3.41$ , S.D. = 0.79). This was the reason why the beginning and intermediate learners had difficulties in listening, which is the heart of communication. This was in line with a result of the Japanese-Language Proficiency Test (JLPT). It showed that the part in which native Thai learners earned the lowest scores was listening. In this research, the beginning and intermediate learners hardly ever used the meaning-based vocabulary learning strategy. They rarely wrote Japanese messages using kanji characters which they had already learned ( $\bar{x} = 2.14$ , S.D. = 0.35) or searched for kanji characters which they had already learned, in printed materials, such as newspapers, magazines, or on billboards ( $\bar{x} = 2.29$ , S.D. = 0.86).

The findings from this research identified that these beginning and intermediate learners mostly learned kanji words by writing and looking up meanings of words. They hardly ever memorized them by listening or usage. Thus, Japanese instructors should encourage their students to practice linking the pronunciation of kanji characters to their meanings and to memorize kanji characters through sample sentences to ensure that they are able to apply them in their everyday use.

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***Theory, Policy, and Implementation of Scientific Learning on Geography Subjects  
In Indonesia***

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**Abstract**

The biggest challenge Indonesia facing now is demographic bonus with population of productive age over 70% but in low level of education. The Government has made a breakthrough by implementing curriculum which is applying scientific learning models at various levels of education. This research tried to investigate the effectiveness, relevance, and balance between theory, policy, and its implementation. The descriptive approach was employed to interpret the data collected through interview, questionnaires, and classroom observation. Participants involved were 25 geography teachers. The results showed that the scientific learning model which combine the skill of the research process, the concept creative intelligence, and the theory of inquiry learning was elaborated into a rigid policy. Every teacher is required to perform the five learning steps of observing, asking, seeking data, associating, and communicating. This policy is told difficult to apply. Apart from being lack of media and learning tools in schools, teachers have misconceptions about the scientific approach. The teachers consider that the five scientific steps are not a syntax of learning but may be random and may take only one or two steps such as only observing and questioning. In several schools, its implementation tends to return to traditional methods of lecturing and questioning. In conclusion, theories, policies, and implementation of scientific learning, especially on geography subjects in Indonesia are less effective, not all relevant material is taught through scientific learning, and lack of balance between the theory developed and its implementation in schools.

Keywords: Geography, Implementation, Indonesia, Policy, Scientific Learning

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## Introduction

Scientific learning model is used as standard for national educational process in Indonesia. This policy, for many teachers is considered quite burdensome, because not all subjects can be taught through a scientific approach. There are three reasons for the Indonesian government to implement the policy, (1) to accelerate the improvement of Indonesian human resources quality in the era of the 21<sup>st</sup> century free market, especially in the context of ASEAN Economic Community (Anwar, 2014, 97-106). Scientific learning is expected to give birth to Indonesians who have critical, communicative, collaborative, and creative thinking skills as recommended in P21 Partnership for 21<sup>st</sup> Century Learning; (2) to increase significant economic growth between 5 - 7% in facing the demographic bonus transition period where the high number of productive age population (15-64 years) is more than 70% of the total population, but with the low level of education (antaranews.com), and (3) to erode the pragmatic attitude among teachers, which often work as it is without motivation, less serious in developing learners' character through education.

The third reason may sound strange, but the pragmatic attitude of Indonesian teacher has been criticized directly by the Vice President of the Republic of Indonesia, Jusuf Kalla. The vice president's concerns were addressed to members of the Association of Indonesian National Education Force (known as ALPTKNI) at the President's Palace on Wednesday, September 7, 2016. He said that almost every same occasion meeting with teachers representatives, improving the quality of education is not the main topic, but always about welfare, and the amount of certification allowances. The teacher's attention has begun to differ. Teachers now are more pragmatic (Prabowo, Kompas.com; 07/09/2016).

Is this policy on scientific learning getting positive responses from teachers? And whether its implementation in accordance with the theory and policy? This study tried to investigate the gap between theory, policy, and implementation of scientific learning in Indonesia. The content will be divided into three subjects about the relationship between theory and policy; theory and its implementation; and policy and implementation.

## Theory & Policy

Theory of scientific learning was born and adapted from three different sources. First, it is influenced by the tradition of scientists in doing research in laboratory. Scientific learning steps are similar to the steps of scientific method. Starting from questioning, searching the data through experiments, observation, and analyzing data to answer the questions posed previously. Therefore, scientific learning has the same syntax as the scientific method of observing, questioning, exploring, associating and communicating. Second, it is inspired by the concept of 'DNA innovator' proposed by Dyers, J.H. et al (2011). The idea is that innovative entrepreneurs have something of a so-called 'creative intelligence', an intelligence that may be different from Howard Gardner's multiple intelligence types. They claimed that creative intelligence does not just rely on the right brain, but always involves both sides of the brain (right and left). They always utilize five inquiry skills to create new ideas in the economic field: associating, questioning, observing, experimenting, and networking. Third is from cognitive theory initiated by Bruner, Piaget, and Vygotsky. Bruner proposes a theory

of learning called discovery learning that says the individual will be considered to have engaged in learning activities when he or she has developed his or her mind. The development process are through three stages of thinking, enactive, iconic, and symbolic. Enactive stage is the stage of discovering something through motor knowledge such as children bite, touch, or grip their toys. The iconic stage is the stage in which one understands objects through visual object images, performs parables, and comparisons. Symbolic stage is the stage of the ability of children in language and logic, they have been able to have abstract ideas and ideas (Weibell, C. J. 2011).

The three ideas above are elaborated into a ‘new theory’ of scientific learning with five main steps: observing, questioning, finding Information/experimenting, reasoning/ Associating, and communicating which is easily called in Indonesian with the acronym of 5-M.

The policy about scientific learning is written in Regulation of the Minister of Education and Culture of the Republic of Indonesia No. 103 year 2014 Article 2 paragraph 8 on Learning in Primary and Secondary Education. The scientific learning approach are applied to all subjects that are regulated through the Regulation of the Minister of Education and Culture No. 22 year 2016 on Standard Process of Primary and Secondary Education. The table below how scientific learning steps are formulated from scientific method, the innovator’s DNA and discovery learning.

Tabel 1: Steps Formulation On Scientific Learning

Scientific Method	The Innovator’s DNA	Discovery Learning	Scientific Learning
<ul style="list-style-type: none"> <li>• Purpose/Question</li> <li>• Hypothesis</li> <li>• Experiment</li> <li>• Data/Analysis</li> <li>• Conclusion</li> </ul>	<ul style="list-style-type: none"> <li>• Associating</li> <li>• Questioning</li> <li>• Observing</li> <li>• Experimenting</li> <li>• Networking</li> </ul>	<ul style="list-style-type: none"> <li>• Stimulation</li> <li>• Problem Statement</li> <li>• Data Collection</li> <li>• Data Processing</li> <li>• Verification</li> <li>• Generalization</li> </ul>	<ul style="list-style-type: none"> <li>• Observing</li> <li>• Questioning</li> <li>• Finding Information/Experimenting</li> <li>• Reasoning/Associating</li> <li>• Communicating</li> </ul>
Helmenstine, A.M. (2017)	Dyers, J.H. et al (2011)	Mushtoz, D.A. (2016)	Regulation of the Minister of Education and Culture of the Republic of Indonesia No. 103 year 2014 Article 2 paragraph 8 on Learning for Basic Education and Secondary Education.

The above theories seem do not have significant difference on learning steps which start from the formulation of the problem, ask questions, search for data, analyze, and draw conclusions. However, there is one thing that escapes the attention that is difference in practice between the scientific method and the scientific learning. The scientific method as a research process is guided by certain questions and research variables. Researchers seek answer to research questions, and data analysis aligned with the hypothesis. While scientific learning has learning objectives, students have to

master a number of basic competencies, and analysis process has to be aligned with the learning objectives. At the observing stage, learners can be invited to observe and ask questions such as research questions, but when entering the finding information/experiment and associate stage, teachers and learners experience many difficulties. They are not able to collect data and associate it according to the diversity of basic competencies.

Such disability is reasonable because in scientific learning practice, teachers and students do not have sufficient capacity to collect data like a scientist. For example, on geography subjects there are materials about tectonic plates, soil solum, infiltration processes, climatic patterns, the distribution of the world's flora and fauna. It is impossible for students to do like a geographer does in those topics. For example to obtain simple data, such as the infiltration process, students need an infiltrating measuring device (infiltrimeter), requiring energy, time, and great cost. Yet at the same time, they are required to achieve the learning objectives in accordance with the basic competencies that have been established. In the process of data analysis, the scientist will not come out of the proposed hypothesis, while in the scientific learning, the data analysis and drawing conclusion must be in accordance with learning objectives.

Based on the conditions described above, the scientific learning policy for all subjects in schools and all learning materials become irrelevant. The policy over-generalizes the issue with only one single solution. One of the subjects which has difficulty in applying scientific learning is Religion (Islam, Christian, Buddhist, Hindu, and Kong Fu Tchu). Students will learn about the divinity, angels, heaven, and hell in these subjects. Teachers and students are not able to observe it because it is something supernatural. Unlike the subject of Religion, the themes in Geography subject can still be observed and researched, but because the study area is very wide which is below and above the earth's surface area of the planet earth and not all geographic study objects can be brought to the laboratory room but must be visited at a distance that may be very far away, it makes observing step difficult to be applied in class.

### **Theory & Implementation**

The cluster of scientific learning according to the Regulation of the Minister of Education and Culture of the Republic of Indonesia Number 103 Year 2014 on Learning in Primary and Secondary Education are such as discovery learning, project-based learning, problem-based learning, and inquiry learning. Ones added other variety of scientific learning with two other types of case study and field trip. Participants in this study were asked to estimate the implementation of the scientific learning strategies and the answers is as below,

Tabel 2 Scientific Learning At Schools

No	Scientific learning strategies chosen by Geography teachers	Participant s	Total Meeting	Meeting Frequency *)	%
1	Inquiry/discovery	25	16	128	32
2	Problem Based Learning	25	16	108	27
3	Project Based Learning	25	16	80	20
4	Case Study	25	16	76	19
5	Field trip	25	16	8	2
	TOTAL			400	100

\*) the number of cumulative answers from 25 participants and from 16 class meetings

The above data is obtained with the assumption that geography teachers understand the theory and the nature of scientific learning (including its types of strategy). However, the level of understanding of geography teachers to the nature of scientific learning is in doubt because of the pattern of participants' answers as seen below indicating they are unaware of the nature of the scientific learning.

Table 3 Geography Teachers' Perception On Scientific Learning

No	Teachers' Perception on Scientific Learning	Frequency	%
1	The scientific sequence (5M) may be partially implemented and not necessarily sequential	7	25,64
2	The scientific sequence (5M) must be present at each meeting	2	12,82
3	The scientific sequence (5M) must be in order (not to be randomized)	1	5,13
4	Scientific steps can be selected in part only, not necessarily complete (5 M)	6	25,64
5	Teachers can choose one method (inquiry, problem based learning, or project based learning)	9	30,77
		25	100,00

The pattern of the answer above explained that the participants seem to have the presumption that scientific learning does not have to fulfill the five learning steps, not even needing a sequence. Whereas in its theory is very clear that learning steps are a syntax and must be pursued through the all five stages. This finding showed that there is a gap between theory and its implementation. Ones tried to trace the barriers to the implementation of scientific learning through the interview with the same participants. Here are several answers describe the barriers.

Participant 1: .... *not enough time. Five scientific learning steps (5M) with time available only 2 hours of lesson in one meeting not all steps can be completed. Observation activities for example, only a small number of students were able to understand (the problem). When they reading books or watching video students could not quickly capture the idea in a short time, especially when there are unfamiliar terms and words.*

Respondent 2: .... *the obstacle is the limitation of school's learning facilities. Moreover students were less motivated to learn actively, only some students were active.*

Respondent 3: ... *the barriers lie in literacy culture, lack of learning facilities for students. Some students in class also cannot do their observation step because of limited time, facilities, and learning facilities.*

Respondent 4: ... *too much administrative work to be done by the teacher. In case of students, not all of them have adequate learning facilities because many students are from poor family (ie. They cannot afford internet data cost).*

On the next occasion, ones also conducted class observations in two senior high schools (SMA PGRI and SMAN 6 Kota Bandung, West Java). Learning activities that were observed run smoothly in accordance with teacher planning. The objective of the observation focused on the teacher's strategy in managing the class in developing critical thinking, creativity, and developing good habits (character development) of students. From the observation, it can be concluded that the teachers are still accustomed to explain the Teachers can choose one method (inquiry, problem based learning, or project based learning) eaching material by way of deductive thinking. At that time, learning activities began with a number of notions about food, food security, and food sovereignty (Geography Class XI) and did not show in advance how to meet the daily needs of food.

In group discussion activities, teachers did not give detailed tasks so that many discussion groups were not effective. The discussions held were not product-oriented to be presented. Each group only wrote the presentation material on A5 paper with very small handwriting. At the time of the presentation, the presenter group only read their writing, so other groups tend not to notice even several students were engrossed in chatting with their friends. Classroom atmosphere were less conducive and less effective. Students also seemed less motivation to learn because the tasks they should do did not attract their attention. This suggests that the implementation of scientific learning has not changed much from the geography learning process in the past.

The Indonesian 2013 Curriculum has a mission to develop character education through indirect learning. At the time of learning, geography teachers are expected to advice, praise, reward, and become a model good habits, moral values, healthy living habits, curiosity development, entrepreneurial motivation, social care, and even a sense of love for the country. During the process of observation, teachers were still very rarely did the process of developing attitudes, characters, and habits of the students. Therefore, ones concluded that scientific learning in those two observed classes had not given the nurturant effect of learning in developing the character of the students.

### **Policy & Implementation**

Government policy on scientific learning in general has not been accompanied by the fulfillment of adequate learning facilities and infrastructure, so that between policies and implementation still have gap. The interview result indicated that teachers felt not

optimal in implementing scientific learning because of the limitations of learning facilities while the ideal is that needs of facilities and infrastructure for supporting scientific learning on geography subjects such as internet network that can be accessed by students, library facilities with relevant book titles, computer room with a minimum number of 30 units, physical geography laboratory, and the environment around the school that deserves to be the object of observation are available and accesable. The basic learning tools required in the geography subject are LCD, computer, atlas, globe, aerial photograph, topographic map, compass, GPS, stereoscope, thermometer, hand-anemometer, rock comparator, CD or DVD player, weather monitoring equipment, seismograph. Although ones have not yet had primary data about the exact number available in the schools, but those numerous facilities are not always available at schools. Based on the above facts the scientific learning policy seemed still difficult to be implemented properly in the classroom.

The only reliable source of learning is the school library. The school library standard has at least one textbook per subject per student, one copy of teacher manual per subject per teacher of the subject, and 70% nonfiction and 30% fiction enrichment book. If the school has 3 - 6 study groups or classes, then the number of books that should be available as many as 1,000 titles of books. If the school has 7 to 12 study groups or classes, the number of books that should be available as many as 1,500 titles. If the school has 13 to 18 study groups or classes, then the number of books that should be available as much as 2,000 titles. However, in many school libraries, the number of books with titles relevant to geographic subjects are rare. This reinforces the fact that the policy is still not possible to be implemented in schools.

Table 4 Geography Teachers' Opinion On Scientific Learning

No	Pendapat guru	Frekwensi	%
1	Very easy to implement and does not take up time and effort	1	4,00
2	Normal, no trouble, and not time consuming	3	12,00
3	Difficult to implement perfectly at every meeting in class	4	16,00
4	Difficult to implement, only several part can be done (not perfectly implemented)	15	60,00
5	Difficult to implement, troublesome, and mostly can not be done in the classroom	2	8,00
	TOTAL	25	100

The table above shows that 60% of geography teachers still feel difficult to carry out scientific learning in the classroom. One reason may be due to the scarcity of school facilities and infrastructure in addition to the minimal number of books and low access to learning resources. From this fact it can be concluded that the 'spirit' of this government policy to apply scientific learning cannot yet be fully implemented by teachers in schools.

## Conclusions

This research has identified the gap between theory, policy, and implementation of scientific learning on geography subjects in Indonesia. (1) Between theory and policy: there is an indication that the scientific method step is adopted 'extractively' (taking without changing its original nature or form) into a scientific learning syntax, whereas the practice of the scientific method as a research process works on questions, indicators, and variables research that are specific, while scientific learning has an obligation to achieve learning objectives with a number of basic competencies. Moreover, there is an indication of the generalization of the issue for improving the quality of education that seems to be solved by only one solution which is the scientific approach. (2) Between theory and implementation: participants have the notion that scientific learning does not have to fulfill the five learning steps, not necessarily sequentially, whereas learning is a syntax that must be sequential through five stages of learning. (3) Between policy and implementation: Approximately 60% of geography teachers in Indonesia still felt difficult to implement scientific learning in the classroom. Several reasons identified are due to the lack of learning facilities and infrastructure, the limited number of reference books in the school library, and the low access of students to other learning resources beside those two. The implications of the existing gaps between theory, policy, and the implementation of the scientific learning are threat for 2013 curriculum to be 'failure.' However, this study has its limitation especially in the number of participants therefore to obtain accurate information there is a need to do further research by increasing the number of participants that spread in 12,513 senior high school (SMA) in all parts of Indonesia.

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***Using Project Based Learning in Statistics Course to Develop the Statistical Literacy for College Students***

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**Abstract**

Using project based learning in the course of Statistics for Career to develop the statistical literacy was conducted with the group of students from Pattani Vocational Education College and Pattani Fisheries and Agriculture Technological College who enrolled the course as a core subject in the first semester of academic year 2017. The course composed of theories with practices section and project section in the parallel form. The sample were twenty-three students from both colleges and evaluated by the task skills, the project performance, the final test, and the SATS-36. The findings revealed that after attending class, the attitudes towards statistics evaluated by SATS-36 was significantly higher than before learning, the mean of the statistical literacy for college students was also above 70 percent, and also showed with the eight projects such as the project of the donut/roti consumption satisfaction and study on taste satisfaction of Takoyaki of consumer in Pattani province.

Keywords: Teaching statistics, Statistical literacy, Attitudes towards statistics, Project based learning

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## Introduction

Under Section 16 of the Vocational Education Act BE 2551, both the Vocational Training Institute and the Agricultural Vocational Institute are vocational and technological higher education institutions that promote academic and practical professional highly skilled, teaching, research, transfer academic and technology, and preserve religion, arts and culture, and the environment. As well as providing academic and professional services to the society, and under Section 42 of the Vocational Education Act BE 2551, such institutions have the power to offer undergraduate degrees in the subjects taught at the institution as continuing vocational diploma. (The Government Gazette, 1998). Nowadays, most undergraduates in Thailand are in the academic field, who are in dire need of the required industry graduates. The Office of Vocational Education Commission operating line to meet the domestic labor market. The first version of the course will be offered in 2013 and will have lower tuition fees than public and private universities. All degree programs will be taught in a bilateral manner. The establishment cooperated in the curriculum and send a lecturer to help teach and to accept students in the establishment. The curriculum requires students to work in the workplace for at least one year from a two-year course.

Bachelor's Degree Program in Technology of the vocational institute's curriculum is structured into a curriculum that includes a course in life skills, the professional skills and free choice in the life skills category, there are Statistics for Careers, which cover the content, the use of statistical methods for occupational research, data collection, analysis, synthesis and interpretation and including the use of statistical programs in occupations, so the management of the courses taught above to achieve statistical literacy to meet life-purpose curriculum objectives should be taken seriously, according to the definition of statistical literacy. There are many meanings such as Wallman (1993) defined that it is possible to understand and critically evaluate the statistical results that permeate our daily lives with coupling the ability to appreciate the contributions that statistical thinking can make in public and private, professional and personal decisions. For Schield (1999), statistical literacy is the ability to read and interpret data: the ability to use statistics as evidence in arguments. In addition to literary literacy is a competency: the ability to think critically about statistics. Similarly Gal (2004) stated that statistical literacy is the ability to interpret, critically evaluate, and communicate about statistical information and messages. The teaching and learning to develop statistical literacies, as defined above, can be achieved by using statistical presentations, or critiques of statistical ideas or issues in the news. (Garfield & Chance, 2000; Gal, 2002). Alternatively, active learning and introducing activities where students are able to construct knowledge, collaborative group work with computers and data. (Garfield, 1993; Roseth, Garfield & Ben-Zvi, 2008).

Project based learning is the learning method that places students at the center of the learning process, the teacher leads the students to the learning that follows the project objectives. The project based learning process involves an in-depth learning process with systematic learning management to get useful and applicable results, to create motivation, and to reinforce necessary living skills (Moursund, 1999; Koparan &

Güven, 2014). Project based learning has more workflow and requires more time for operation. The learning process involves interaction and cooperation among learners, between learners and teachers. More importantly, when the teacher implements the project and the project is completed, the learners will feel proud of themselves. This generates motivation to learners to perform better projects in the future. In a project-based learning management classroom, students are divided into groups of different sizes. The project enables learners to deeply understand the ideology and standard of project-making. It can reinforce lifelong working skills and behavior. The project also provides the learners with an opportunity to solve community problems, or survey future careers. (Koparan & Güven, 2014)

Based on the concept and process of learning, the focus is on the use of project-based learning activities in the field of career statistics to develop intrinsic motivation, collaborative skills, flexible and effective problem solving skills, and ultimately self-directed learning leads to further statistical literacy for the students from Pattani Vocational Education College and Pattani Fisheries and Agriculture Technological College.

## **Methods**

### **Participants**

The target group were 11 students in food and nutrition of Pattani Vocational Education College and 12 students in aquaculture technology of Pattani Fisheries and Agriculture Technological College, who are registered students for the Statistics for Careers Semester 1, academic year 2017, and the content of the course including descriptive statistics, graph and explanation, population and sample, sampling techniques, testing hypothesis, one sample and two sample tests, analysis of variance, and chi-square test. The above-mentioned subjects take 15 weeks from May 15 to September 15, 2017 to complete the course which consisting of 60 periods.

### **Procedure**

This instructional activity to develop statistical literacy provided the students with three persons per group, each of them presenting issues of interest related to the disciplinary field, then design the widget, data collection, data analysis leads to conclusion. In the data analysis phase, the data is collected by analyzing descriptive statistics and graphing patterns. For the topic of testing hypothesis, one sample and two tests, analysis of variance, and chi-square test will provide theoretical and practical knowledge, together with analysis of project data from actual data collected. The teaching activities were shown in Table 1.

**Table 1.** Schedule of learning activities

<b>Week</b>	<b>Project</b>	<b>Lecture and laboratory</b>
Week1-2	present issues of interest	descriptive statistics
Week3-4	tool design	graph and explanation
Week5-6	data collection	population and sample
Week7		sampling techniques
Week8-9	data analysis	testing hypothesis
Week10-12		one sample and two sample tests
Week13-14		analysis of variance
Week15	present the project	chi-square test
Week16	final test	

### **Data Collection**

Performance appraisal evaluate the task skills, the project, and the final score including the survey of attitudes towards statistical subjects, the tools were as follows.

1. Five lesson plans include a performance assessment form for each unit which using Stat Rally activities for individual or group quizzes, the number of Rally 5 times for a total of task skills score 30 points.

2. The project evaluation form was divided into four levels: Introduction and method, results and discussion, final draft, and group presentation. There are five levels of rubric scoring, which are excellent, very good, good, moderate, and should be developed. A total of project score 50 points.

3. Objective and subjective test including the theoretical content and describing the results from the statistical packages. A total of final score 20 points.

4. Schau's Survey of Attitudes towards Statistics (2003), with a 36-step backward translation process, categorized the questions into 6 areas according to Schau's concept including effort, affect, cognitive competences, difficulty, value, and interest. The scale of 1 instead of strongly disagree, and 7 instead of strongly agree. The survey was built online, with the URL as <https://goo.gl/forms/CJJ8nq5FigDU4stL2>.

The evaluation uses mean and standard deviation to show the mean value of final scores and attitudes toward the course, and one sample test to test the difference of mean scores against the criteria, as well as using an independent sample test to compare differences in scores of the average combined between the two target groups.

### **Results**

The results of the project based learning were used in the 15-week course of Statistics for Careers to develop statistical literacy, the researcher measured the task skills by Stat Rally, the project performance skills by draft the introduction and method and group presentation to the final report as shown some activities in Figure 1., and the

results of the descriptive statistics of the task and project performance as well as the final exam shown in Table 2.



**Figure 1.** Some activities from Stat Rally and group presentation to develop statistical literacy

**Table 2.** Descriptive statistics of the task skill scores, the project scores and the final test scores

		<b>Pattani Vocational Education College</b>				<b>Pattani Fisheries and Agriculture Technological College</b>			
		Mean	S.D.	Min	Max	Mea	S.D.	Min	Max
	Full score								
<b>Task skills</b>	<b>30</b>	<b>18.80</b>	<b>4.22</b>	<b>8.13</b>	<b>22.75</b>	<b>18.24</b>	<b>3.62</b>	<b>13.38</b>	<b>22.88</b>
Stat Rally#1	5	3.61	.35	3.00	4.00	2.88	.99	1.88	4.38
Stat Rally#2	5	2.86	1.43	0.00	3.75	2.61	1.83	0.00	5.00
Stat Rally#3	5	4.09	1.05	0.00	5.00	3.68	1.86	0.00	5.00
Stat Rally#4	5	4.32	1.45	0.00	5.00	4.50	0.39	4.00	5.00
Stat Rally#5	5	3.91	1.95	0.00	5.00	4.57	0.37	4.00	5.00
<b>Project</b>	<b>50</b>	<b>42.17</b>	<b>1.62</b>	<b>38.67</b>	<b>44.50</b>	<b>43.50</b>	<b>4.03</b>	<b>36.17</b>	<b>47.34</b>
Introduction & Method	10	8.58	1.47	5.67	9.67	8.33	1.61	5.67	9.33
Results & Discussion	15	12.68	.78	12.00	13.50	14.19	.59	13.50	15.00
Final Draft	15	14.18	.87	13.00	15.00	13.55	1.21	12.00	15.00
Group Presentation	10	6.73	1.62	5.00	9.00	7.45	1.37	5.00	9.00
<b>Final test</b>	<b>20</b>	<b>13.77</b>	<b>6.32</b>	<b>3.57</b>	<b>20.00</b>	<b>16.99</b>	<b>5.17</b>	<b>7.50</b>	<b>20.00</b>
<b>Total</b>	<b>100</b>	<b>74.73</b>	<b>7.09</b>	<b>65.01</b>	<b>83.02</b>	<b>78.72</b>	<b>11.62</b>	<b>58.55</b>	<b>92.88</b>
<b>One sample test</b>	<b>mu = 70</b>	<b>t = 2.23 p = .050</b>				<b>t = 2.49 p = .032</b>			
<b>Independent sample test</b>		<b>t = -.97 p = .342</b>							

From Table 2, the mean scores on the task skills, the project, and the final test of students from Pattani Vocational Education College were 18.80 42.17 and 13.77 respectively, and the mean scores on the task skills, the project, and the final test of students from Pattani Fisheries and Agriculture Technological College were 18.24 43.50 and 16.99 respectively.

The analysis of the difference of total mean scores against the criteria, and to compare differences in average scores between the two targets groups was shown in the bottom of Table 2. It was found that the total mean scores was significantly different with the criteria as well as both two groups ( $t = 2.23$ ,  $p = .050$  for students from Pattani Vocational Education College, and  $t = 2.49$   $p = .032$  for students from Pattani Fisheries and Agriculture Technological College). Besides, the comparison between total mean scores of the two target groups was non-significantly different with  $t = -.97$  and  $p = .342$ . It could imply that the students shown the literacy of statistics by project based learning above 70 percent and not different from both groups.

Some findings from developing the statistical literacy in the class of Statistics for Careers with project based learning became eight interesting projects. The titles were as follows:

1. A study of donut taste satisfaction.
2. A study on the satisfaction of roti-flavored flavors.
3. Study on the satisfaction of the beverage booths.
4. Study on the satisfaction of the beverage shops.
5. Study on the satisfaction of cracker consumption.
6. Study on customer satisfaction in canned fish.
7. Study on taste satisfaction of Takoyaki.
8. Study on customer satisfaction in Budu.

**Table 3.** Mean pre-treatment responses on attitudes subscales by Group

	<b>Pattani Vocational Education College</b>		<b>Pattani Fisheries and Agriculture Technological College</b>		t	p
	Mean	S.D.	Mean	S.D.		
Effort	4.64	.88	4.80	.88	-.430	.672
Affect	3.83	.53	3.26	1.03	1.605	.126
Cognitive competence	3.79	.50	3.89	.51	-.444	.662
Difficulty	3.61	.52	3.31	.71	1.069	.299
Value	3.97	.22	4.43	.55	<u>-2.353</u>	<u>.040</u>
Interest	4.45	.64	4.25	1.38	.439	.666

**Table 4.** Mean post-treatment responses on attitudes subscales by Group

	<b>Pattani Vocational Education College</b>		<b>Pattani Fisheries and Agriculture Technological College</b>		t	p
	Mean	S.D.	Mean	S.D.		
Effort	4.91	.48	5.00	.81	-.281	.783
Affect	4.29	.40	4.33	.44	-.200	.844
Cognitive competence	4.27	.48	4.27	.42	.000	1.000
Difficulty	4.14	.50	4.03	.77	.356	.727
Value	4.13	.50	4.37	.34	-1.134	.276
Interest	4.97	.75	5.09	.60	-.369	.718

**Table 5.** Paired t-test responses on attitudes subscales for Pattani Vocational Education College students

	Pre-treatment		Post-treatment		t	p
	Mean	S.D.	Mean	S.D.		
Effort	4.64	.88	4.91	.48	-.791	.440
Affect	3.83	.53	4.29	.40	-2.051	.056
Cognitive competence	3.79	.50	4.27	.48	<u>-2.113</u>	<u>.050</u>
Difficulty	3.61	.52	4.14	.50	<u>-2.242</u>	<u>.039</u>
Value	3.97	.22	4.13	.50	-.820	.434
Interest	4.45	.64	4.97	.75	-1.610	.126

**Table 6.** Paired t-test responses on attitudes subscales for Pattani Fisheries and Agriculture Technological College students

	Pre-treatment		Post-treatment		t	p
	Mean	S.D.	Mean	S.D.		
Effort	4.80	.88	5.00	.81	-.471	.645
Affect	3.26	1.03	4.33	.44	<u>-2.843</u>	<u>.016</u>
Cognitive competence	3.89	.51	4.27	.42	-1.668	.116
Difficulty	3.31	.71	4.03	.77	-1.976	.067
Value	4.43	.55	4.37	.34	-.282	.782
Interest	4.25	1.38	5.09	.60	-1.597	.131

From Table 3-4, the mean and standard deviation pre-treatment of the responses on attitudes towards statistics of students indicated that the two groups of students gave their highest opinion on Effort, whereas the mean and standard deviation post-treatment of the responses indicated that the two groups of students gave their highest opinion on Interest. Students from Pattani Vocational Education College comment on Interest and Value in the second and third rankings and the lowest was on Difficulty, whereas the students from Pattani Fisheries and Agriculture Technological College comment on Value and Interest in the second and third rankings and the lowest was on Affect of pre-treatment.

On the other hand, students from Pattani Vocational Education College comment on Effort and Affect in the second and third rankings and the lowest was on Value, whereas the students from Pattani Fisheries and Agriculture Technological College comment on Effort and Value in the second and third rankings and the lowest was on Difficulty of post-treatment. It found that both groups have comments on all sides in a way to agree. Excluding Pattani Fisheries and Agriculture Technological College students, the pre-treatment comments on Affect and Difficulty were in disagreement. The above results show that both groups of students view the statistical subjects as interesting, appreciate value in statistics and was dedicated to learning statistics. Therefore, it is possible to develop intellectual knowledge, even if the statistical subjects were difficult. However, when comparing the mean of the opinions from the two groups, the mean score of the opinions on the Value of the items was significantly different at the 0.05 level with  $t = -2.353$ ,  $p = .040$ .

From table 5-6, the finding revealed that after attending class, the attitudes towards statistics evaluated by SATS-36 was significantly higher than before learning. Therefore, students from Pattani Vocational Education College remark on Cognitive Competence and Difficulty with  $t = -2.113$ ,  $p = .050$  and  $t = -2.242$ ,  $p = .039$  respectively, whereas the students from Pattani Fisheries and Agriculture Technological College remark on Affect with  $t = -2.843$ ,  $p = .039$ .

## Discussion

To conclude, the project based learning improved the statistical literacy via the task skills, the project performance, and the final test as can be seen from the average scores which was above 70 percent. In addition, it was found that the total mean scores was significantly different with the criteria as well as both two groups but the comparison between total mean scores of the two target groups was non-significantly different. The findings were consistent with several studies. For instance, the study of Fillebrown (1994) involves with using projects in an elementary Statistics course for non-science majors. It reveals that the projects made the course much more enjoyable to teach, it requires more than the usual effort as well as students but it was well worth the time. The study of Carnell (2008) involves with the effect of student-designed data collection project on attitudes toward Statistics. It found that inclusion of a project may not significantly impact students' attitudes toward statistics. James, Anthony, and Michael (2013) study students' experiences and perceptions of using a virtual environment for project based assessment in an online introductory statistics course, it revealed that perceptions of the use of the Island for project-based assessment were very positive. Qualitative feedback provided insight into how the Island-based projects may help to develop students' statistical thinking. Moreover, Kuenkaew and Nopparit (2016) developed the instruction model and study the result of using the instruction model for 21st century learners to promoting statistical thinking among higher education students, it revealed that all students of the target group were higher statistical thinking level in every aspect; most of students were quantitative level of statistical thinking and positive attitude.

For the level of opinion on the attitudes towards statistics of the two groups of students, it was found that the students considered the statistical subjects to be interesting, appreciate value in statistics and was dedicated to learning statistics. Therefore, it is possible to develop intellectual knowledge, even if the statistical subjects are difficult. The results were consistent with Arumugan's (2014) study with undergraduate students in Malaysia, and some consistency with the research of Judi, Ashaari, Mohamed, and Wook (2011) studied with undergraduate students in the same country. It was found that the Affect and the Value gave an average of similar level of opinion. While students in Malaysia give an average score on the Effort, the Cognitive Competence, and the Difficulty higher than this result. Besides, the Interest aspects gave the opposite result to this research. It also consistent with the research by Bond, Perkins, and Ramirez (2012) who studied with undergraduate students in the United States and found that the Difficulty and the Value gave an average of similar levels of opinion. While students in the United States provide an average level of the Effort and the Cognitive Competence higher than this study, whereas the Affect and

the Interest gave the opposite result. The result may be due to the nature of the learning that is being cultivated in the culture as well as the different lifestyles, or at different times. According to Torteeka (2014), concludes that Chinese students have a better attitudes towards statistics subjects than Thai students in relation to their educational development policies.

In short, conducting the project based learning in teaching statistics to developed statistical literacy for the students from Pattani Vocational Education College and Pattani Fisheries and Agriculture Technological College made the learners tend to focus on the tasks or the real practice more than the contents of the lessons. Nevertheless, the instructor might have to work harder in each step in order to draw and develop the students' skills perfectly. For doing project, it was noticeable that the students were not good at writing the significance of the problem and the discussion because of the lack of experience.

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***Cultural-Fit Management: Sustainable Success Factor of Thailand Public University***

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**Abstract**

This research aimed to study 1. The meaning and forms of Cultural-fit Management, 2. The factors affected to Cultural-fit Management and 3. The correlation between Cultural-fit Management and Sustainable Success Performance of Thailand public university. Data were collected by questionnaires from 250 academic officers of a leading public university in the Central region of Thailand, analyzed in the forms of mean, percentage and standard deviation for descriptive statistics and used inferential statistics by Simple regression and Pearson's correlation coefficient testing. The research found that 1. Cultural-fit management performs in 4 styles: 1. Club culture, Role culture, Task culture and Existential culture, each style consists of 7 components: Leadership, Motivation, Organization structure, Work features, Power & Formalization, influencing forces and Cultural context, and have 4 forms: Club culture, Role culture, Task culture and Existential culture. 2. Organizational culture and Individual culture affected to Cultural-fit Management. 3. Cultural-fit Management related to Work-Life satisfaction, Work performance, Internal process development and Creating learning society. The suggestion of this research was the university executive boards should construct the Cultural-fit Management with community participation to promote a sustainable success factor for Thailand public university development.

Keywords: Cultural-fit Management, Sustainable success factor, Thailand public university, Organizational culture, Individual culture

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## Introduction

Cultural-fit management refers to organizational culture that involve human resource management dimension by creating the best fit between organization and his members. Any organization with Cultural-fit will lead his staffs go to success performance no exception public university people. Both organization and individual aim to reach their expectation, desire and goal, then consistency with each other will affect the way to release conflict of them and take the cooperation to the fit management equilibrium. From literature reviewing, Organizational Culture comes from the identity of people in each organization that reflects indifferent belief, attitude, thought and behavior from others. This identity must push his organization road to the way of successful target goal. The construction of Organizational Culture begin with the Core Value setting then show the Desirable Future Picture, define culture conform to Organizational Values, create Value Added to the Culture and finally design assessment approach before make plan setting for Organizational Culture. Besides this factor, Individual Culture is the one influence Cultural-fit management. Demand for transactions and creativity are outstanding in knowledge management era, managing people in diversity status is very importance for today.

In public university like many businesses, Cultural-fit management related to success performance of Educational Institutions by impulsion of their staffs. The researcher try to use Balance Scorecard as a tool to prove this research question in Thailand case study.

## Research objectives

The objectives of this research were

1. To study the meaning and compositions of Cultural-fit management of Thailand public university.
2. To study the Organizational Culture and Individual Culture affected to the Cultural-fit management of Thailand public university.
3. To study the Cultural-fit management related to Sustainable Success Performance of Thailand public university.

## Scope of the study

1. Content scope:

- Cultural-fit management include God's personality, Symbolic analogy, Features, Style of Management, Kinds of organization, Strength of culture, Weakness of culture, Leader, Power, Decision making, Communication, Work pattern, Way of thinking and learning, Way of influencing and changing, Way of motivating and rewarding, Formalization and Centralization.
- Organizational Culture include Normative value and Behavioral value.
- Individual Culture include Personality, Capability, Characteristic, Behavior, Value/Belief, Need and Priority.
- Sustainable Success Performance include Work-Life satisfaction, Creating learning society, Internal process development and Work performance.

2. Population scope: This research used the 250 academic officers of a leading public university in the Central region of Thailand.

3. Time period scope: This research has done the survey for 6 months from January – Jun 2017 and implemented it in the later month.

### Research assumptions

The Research assumptions were

1. Organizational Culture have affected to Cultural-fit management.
2. Individual Culture have affected to Cultural-fit management.
3. Cultural-fit management have related to Sustainable Success Performance of Thailand public university.

### Conceptual framework

By reviewing related literature, Organizational Culture (Gordon, 1992), Individual Culture (Ogbonna and Harris, 2011), Cultural-fit management (Jittaruttha, 2010) and Sustainable Success Performance (Tungnarumit, 2016), the researcher could synthesize the research conceptual framework as shown in the figure below:

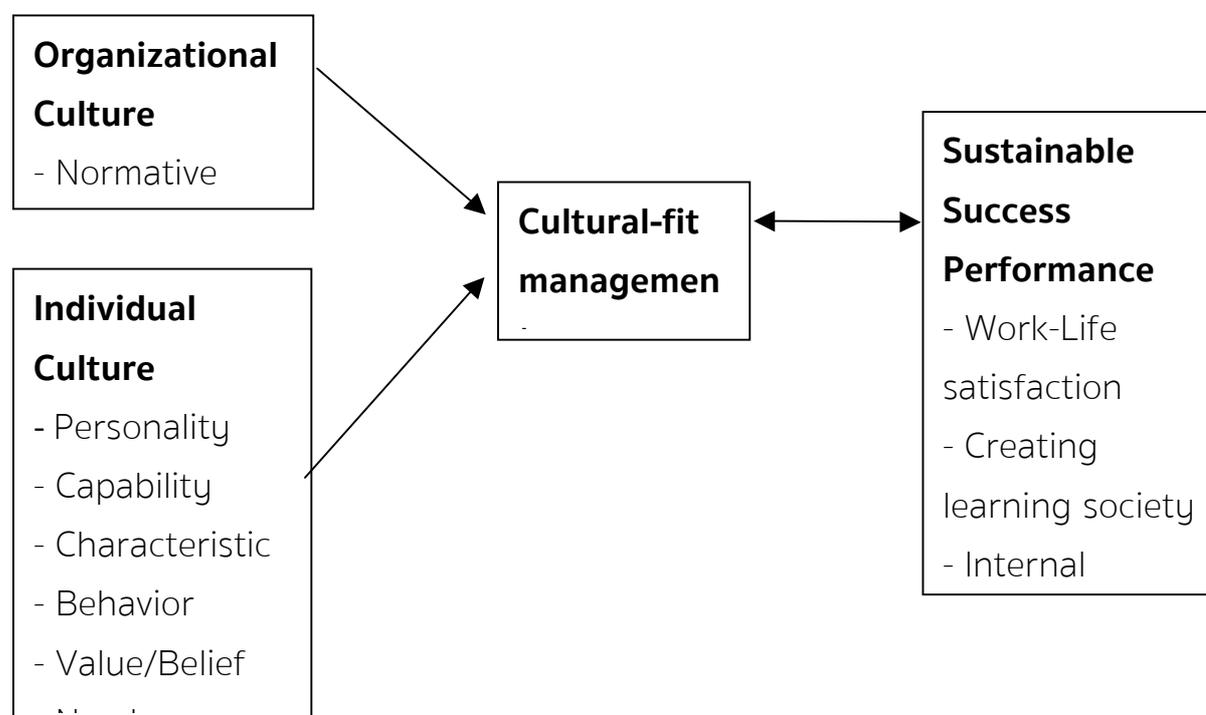


Figure 1: Conceptual framework

## **Literature review**

The current study about Cultural-fit management was clearly shown in the research about Expatriate personality and cultural fit: The moderating role of host country context on job satisfaction (Peltokorpi and Froese, 2014), “Cultural Fit”: Individual and Societal Discrepancies in Values, Beliefs, and Subjective Well-Being (Lu, 2010), Cultural-Fit Management in Expensive Cultural Organization: An Exploratory Case Study of Professional Organization on Advertising Agency (Jittaruttha, 2010), Performance appraisal-cultural fit: organizational outcomes within the UAE (Behery and Paton, 2008), Person-organization fit: The Match between newcomers’ and recruiters’ preferences for organizational cultures (Van Vianen, 2000), Managing Human Resources: The Issue of Cultural Fit (Mendonca and Kanungo, 1994). Almost of them try to link Cultural-fit management with the corporate performance especially in human resource management.

## **Research Methodology**

### Area selection and sources of information

This study was a quantitative research. It was studied in the form of survey research. The sample group was selected from 250 academic officers who are the lecturers of a leading public university in the Central region of Thailand.

Based on the total population number of lecturers of this public university are about 1,500 persons. This research determined the sample sizes by Taro Yamane’s approach that calculated to about 316 samples as a result. The data collection used questionnaire to gather primary source information but the returned questionnaires were 250. Besides, the researcher also gathered the secondary source data from literature review such as researches, books and academic articles.

## **Research Tools**

The researcher used questionnaires and interviewing as tools to collect data from the lecturers of a leading public university in the Central region of Thailand. In the questionnaire structure, it divided to 6 parts that composed of Personal data, Organizational Culture, Individual Culture, Cultural-fit management and Sustainable Success Performance for the closed-end part and the other related suggestions for the open-end part. This questionnaire developed from the related researches and tested by 30 lecturers of a leading public university in Thailand Southern Provinces. In addition, the return research tools were calculated by Cronbach’s Alpha Coefficient, the outcome was 0.89 for confidence interval of overall questionnaire parts.

## **Data Analysis**

All of questionnaire data were calculated by the SPSS, the results were analyzed and shown in the forms of percentage, mean and standard deviation for descriptive statistics. Then the mean values were taken to interpret the meaning by being based on criterion that divided to 5 levels for Organizational Culture, Individual Culture, Cultural-fit management and Sustainable Success Performance. Besides, this research had hypothesis testing: firstly, for Organizational Culture, Individual Culture affected

to Cultural-fit management was tested with Simple regression, and secondly for Cultural-fit management related to Sustainable Success Performance was tested with Pearson's correlation coefficients.

## **Research Results**

### 1. Meaning and compositions of Cultural-fit management of Thailand public university

Cultural-fit management refers to organizational culture that involve human resource management dimension by creating the best fit between organization and his members management.

From the surveying mixed to literature review it consists of 7 components: Leadership, Motivation, Organization structure, Work features, Power & Formalization, influencing forces and Cultural context.

In Thailand public university, Cultural-fit management performs in 4 styles: Club culture, Role culture, Task culture and Existential culture.

### 2. Organizational Culture and Individual Culture affected to the Cultural-fit management of Thailand public university.

When considering to affecting factors, the study found that Organizational culture and Individual culture affected to Cultural-fit Management by  $R^2$  Adj. 0.74 and 0.62 respectively at 0.05 significant levels.

For more explanation, Normative value plays important role in Organizational culture while Individual culture be dominated by Value/Belief.

### 3. Cultural-fit management related to Sustainable Success Performance of Thailand public university.

Cultural-fit management related to Sustainable Success Performance of Thailand public university at Pearson's correlation coefficients. "r" = 0.81 at 0.05 significant levels.

Sustainable Success Performance that related to Cultural-fit Management: firstly Work-Life satisfaction, following by Work performance, then Internal process development and Creating learning society at the last.

## **Research discussion**

### 1. Meaning and compositions of Cultural-fit management of Thailand public university.

The research results that show meaning, forms and it's compositions of Cultural-fit management of Thailand public university conforms to the study of Jittaruttha (2010) that have the same meaning and forms, and for compositions of Cultural-fit management covers: God's personality, Symbolic analogy, Features, Style of

Management, Kinds of organization, Strength of culture, Weakness of culture, Leader, Power, Decision making, Communication, Work pattern, Way of thinking and learning, Way of influencing and changing, Way of motivating and rewarding, Formalization and Centralization.

2. Organizational Culture and Individual Culture affected to the Cultural-fit management of Thailand public university.

Two affecting factors affected to the Cultural-fit management of Thailand public university consists with Lu (2010) that emphasized to the role of Individual Culture, and Behery and Paton (2008) that pay attention to the effect of Organizational Culture to Cultural-fit management.

3. Cultural-fit management related to Sustainable Success Performance of Thailand public university.

Sustainable Success Performance that reviewed from the Balance Scorecard Approach can use to explain how Cultural-fit management will survive and thrive in the long run. Considering by each factor, Job satisfaction or Work-Life satisfaction in this study accord with many research results such as Peltokorpi and Froese (2013), Work performance explained by Sheridan (1992), Internal process development proposed by Marcoulides and Heck (1993), and Creating learning society presented by Gordon (1992) consecutively.

## **Conclusion**

The research results displayed that Cultural-fit management constructs from 2 factors Organizational Culture and Individual Culture and be classified in 4 forms: Club culture, Role culture, Task culture and Existential culture with 7 compositions: Leadership, Motivation, Organization structure, Work features, Power & Formalization, influencing forces and Cultural context. It is a Sustainable Success Factor of Thailand public university measured by Balance Scorecard Approach because of closed up relationship between Organization Management and Human Resource Management. This correlation model can explain educational institution culture in Thailand Public University case study very well.

## **Recommendation**

This research has suggested that the related persons especially the government should take more actions than before about promoting Cultural-fit management. The traditional organizational culture even or Individual Culture was designed by the central government educational policy and could not apply with current dynamic situation. The new Cultural-fit management should tailor made to response changing to 21st Century Learning Skills that concentration in Interdisciplinary Learning Global Awareness, Financial Economic Business and Entrepreneurial Literacy, Civic Literacy, Health Literacy, and Environmental Literacy.

Moreover, the government assistance policy should include not only the supports to create educational innovations but also the promotion of knowledge transfers and

innovation assistance from external networks for innovations that required necessary condition of Thailand Public University incorporation.

As regards the next research, the interested researcher is advised to keep studying on how to determine suitable government policy for Cultural-fit management of educational institutions to match up the country development. Another useful research is the study about how to create and keep identity for Cultural-fit management of educational institutions especially Public University.

### **Acknowledgement**

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## ***Causes and Effects of Educational Innovation in Thailand Public University***

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### **Abstract**

The objectives of this paper were 1) to study the definition and forms of Educational Innovation in Thailand Public University, 2) to study factors affected to Educational Innovation in Thailand Public University and 3) to study effects of Educational Innovation in Thailand Public University. Data were collected by questionnaires from 250 academic officers of a leading public university in Thailand, analyzed in the forms of mean, percentage and standard deviation for descriptive statistics and used inferential statistics by Simple regression and Person's correlation coefficient testing. The research found that 1) Educational Innovation consists of 3 components: Newness, Economic Benefits and Knowledge and Creativity Idea. It displays in 5 forms: Curriculum Innovation, Learning Innovation, Media of teaching Innovation, Evaluation Innovation and Management Innovation. 2) For Internal factors: Leader is the highest factor, like Technology from external factor group affected to Educational Innovation. And 3) Educational Innovation related to all aspects especially in Education effect and Social effect.

Keywords: Educational Innovation, Thailand public university, Internal factors, External factors

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## **Introduction**

Arranging educational management of each university required many input resources such as, target and objective, strategic policy, implementation measure, facility, student and educational process for producing the educated people. These factors were influenced by the environment like a government policy, modern life style attitude and technological change. There are many risk factors that affected the situation of risk in many universities including public university during educational management process.

As regards government educational policy, Thai public university is now going to be out of system, under regulation, or in other word becoming private university. Most of the faculties of this university, especially the new born faculties tried to have more students in order to get more income to support them as they lacked of government financial support. This was the turning point that leads the public university to the market competition between each of educational institutions.

The educational quality involved in educational risk management. It came from many sources like executive command, decentralization of administration, resourcefulness, corruption, ethical behavior, participation & monitoring and the management process of the university. When these risk factors happened, they affected the university operation and their final goal.

By educational innovation development, some of public universities can survive and thrive from the serious situation and be able to confront with the changing society on the way to the next decade of Thailand education. This research try to find out what are causes and effects of educational innovation, one of the key factor affecting educational risk management by applying Thailand Public University as a case study.

## **Research Objectives**

1. To study the definition and forms of Educational Innovation in Thailand Public University
2. To study factors affected to Educational Innovation in Thailand Public University
3. To study factors related to Educational Innovation in Thailand Public University

## **Research Assumption**

1. Internal factors have affected to Educational innovation.
2. External factors have affected to Educational innovation.
3. Affected aspects have related to Educational innovation.

## **Scope of Study**

### **1. Content Scope**

This research emphasized on the study of the Internal factors (Leader, Policy, Facility and Knowledge Management) and the External factors (Social, Policy, Economic, Legal and Technology) that affected to Educational innovation. The Affected aspects

(Education, Social, Economic, Psychology) related to Educational innovation in Thailand Public University

## 2. Population Scope

This research used the samples size calculated from the population who are academic officers of a leading public university in Thailand.

## 3. Time period Scope

This research has done the survey for 8 months from November 2016 – June 2017

## Conceptual Framework

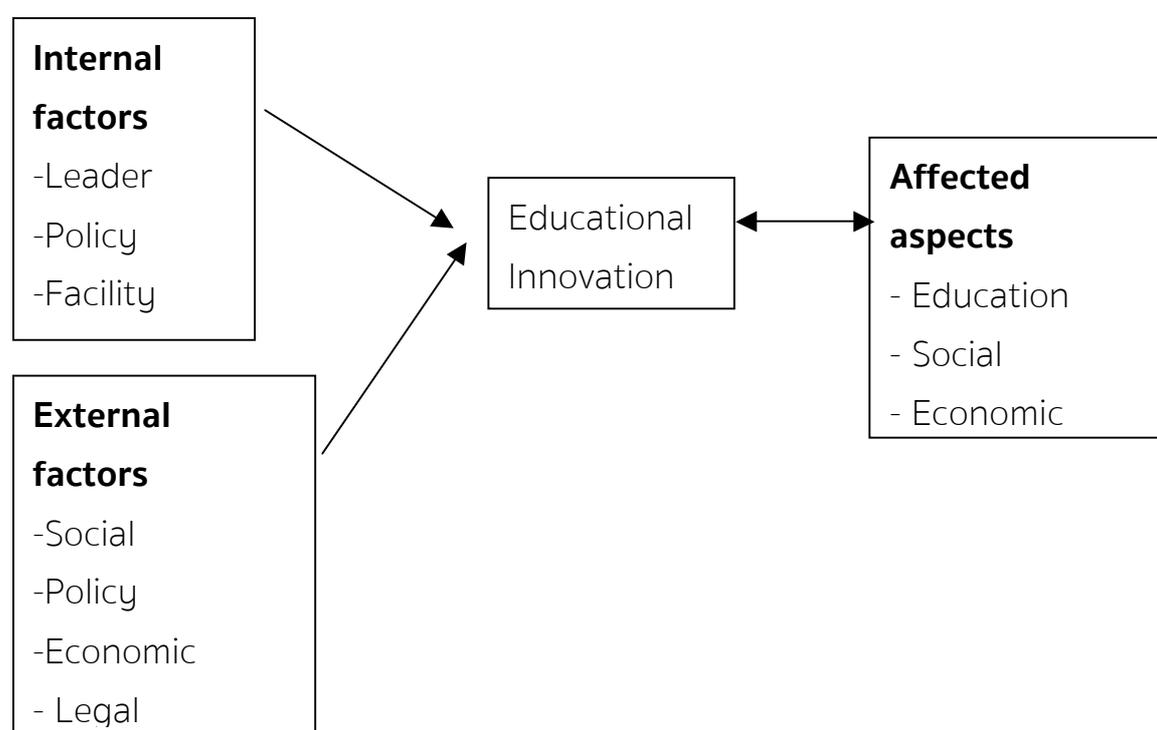


Figure 1: The conceptual framework

## Literature Review

Donald (1990) studied conditions that facilitate the implementation of Educational Technology Innovations. He suggested eight conditions that consist of dissatisfaction with the status quo, knowledge and skills, resources, time, rewards, participation, commitment, and leadership.

Elias et.al (2003) studied implementation, sustainability and Scaling up of social emotional and academic innovation in public school. They conclude 3 point: the need to prepare professionals with the array of skills needed to lead efforts at scaling up school reform, the importance of an action – research perspective and the need to better document the stories of educational innovation.

Janssen et.al (2013) presented how to make innovation practical. This study was designed as an analytical essay that theorizers teaching practice, teacher reasoning and a bridging methodology for connecting teaching practice with specific educational innovations.

Konings et.al. (2007) focused on teachers' perceptions of a Dutch innovative learning environment that called the "Second Phase" in Teachers' perspectives on innovations: Implication for education design.

Rattanapongpinyo (2014) found that the lesson from the educational risk management of Thai public university experience, it displayed that even though the executive tried to solve current problem, the visions for educational development was unclear and the strategic policy was also dominated by the leader without having community participation or monitoring in The Lesson from the Educational Risk Management Experience of Thai Public University.

Wright et.al. (2008) studied the important of promoting stakeholder acceptance of education innovations. They investigated difficulties in implementing education in innovations, and suggested possible strategies for educator.

## **Research Methodology**

### **1. Area selection**

This study was a quantitative research. It was studied in the form of survey research. The sample group was selected from academic officers of a leading public university in Thailand.

### **2. Source of information**

Based on the total population number of Educational officer of a public university in Thailand are 18,519 people. This research determined the sample sizes by Taro Yamane's approach that calculated to about 400 samples as a result but returned questionnaires to 250. The data collection used questionnaire to gather primary source information.

## **Research Tools**

The researcher used questionnaire and research guideline as a tool to collect data from academic officers of a leading public university in Thailand. In the questionnaire structure, it divided to 5 parts that Internal factors, External factors, Educational innovation, Affected aspects and the other related suggestions for the open-end part. This questionnaire and research guideline developed from the related researches and tested by 30 academic officers of a leading public university in Thailand that exclude the samples. . In addition, the return research tools were calculated by Cronbach's Alpha Coefficient, the outcome of total questions was 0.87 for confidence interval.

## Data Analysis

All of questionnaire data were calculated by the SPSS, the results were analyzed and shown in the forms of percentage, mean and standard deviation for descriptive statistics. Then the Educational Innovation consists of 3 components: Newness, Economic Benefits and Knowledge and Creativity Idea. And have 5 forms: Curriculum Innovation, Learning Innovation, Media of teaching Innovation, Evaluation Innovation and Management Innovation. Besides, this research had hypothesis testing: firstly, for Internal and External factors affected to Educational innovation was tested with Simple regression, and secondly for Affected aspects related to Educational innovation was tested with Pearson's correlation coefficients.

## Research Results

### 1. To study the definition and forms of Educational Innovation in Thailand Public University.

Educational Innovation composes of

1. Newness means the new thing develop from product, service or process that improved from traditional or created something.
2. Economic Benefits means innovation must be able to add value to the development of new things, the benefits that can be measured by directly in the money or not directly.
3. Knowledge and Creativity Idea means innovative things must come from the use of knowledge and creativity as the basis of development. It's not imitation or repetition.

Forms of Educational Innovation were:

1. Curriculum Innovation is the new method to develop curriculum in accordance with local environment and serve the needs of teaching more. Because the curriculum always change in accordance with the technological, social and economic.
2. Learning Innovation is improvements and develop new teaching methods. That can meet individual learner Centered Learning Participatory learning and Problem solving learning
3. Media of teaching Innovation is bringing the potential of modern technology into the production of teaching media such as self study, group study and mass education
4. Evaluation Innovation is using as a tool to measure and evaluate efficiently and quickly. The application of computer programs to support the measurement and evaluate the results of teacher education institutions.
5. Management Innovation is using of innovations related to the use of information to help manage the decision of the administrators for changing situation in the world.

### 2. To study factors affected to Educational Innovation in Thailand Public University

From the literature reviews and hypothesis testing, it revealed that internal factors: Leader is the highest factor ( $\bar{x} = 3.8$ , S.D. = 0.72). For external factors: Technology is the highest factor ( $\bar{x} = 3.2$ , S.D. = 0.84). In over all, internal factors have influenced to

Educational innovation more than external factors by  $R^2 \text{ adj.} = 0.76$  and  $R^2 \text{ adj.} = 0.64$  consecutively.

### **3. To study factors related to Educational Innovation in Thailand Public University**

The research shown that Education effect and Social effect related to Educational Innovation on 0.83 and 0.76 with Pearson's correlation coefficients at 0.05 significant levels.

#### **Research discussion**

##### **1. The definition and forms of Educational Innovation in Thailand Public University**

Educational Innovation means to take a new thing that cover thinking, method, acting or inventing something does not happen before or develop from traditional by using concept, theory testing until receive trust and taking to create the learning efficiency. The finding out for 3 compositions and 5 forms of Educational Innovation derived from Aujirapongpan (1990).

##### **2. Factors affected to Educational Innovation in Thailand Public University**

This research open that Leader is the highest factor among the other internal factors affected to Educational Innovation in Thailand Public University, the result conform to many studies like Ely (1990) and Wright, et. Al. (2008). These two papers concentrated in study about Factors and Conditions that facilitate the implementation of educational technology innovations and founded that leader vision is the most importance.

For external factors, technology play role as the key factor influences to Educational Innovation in Thailand Public University that consist with Thongwan (2010), Pakdeelao (2011) and Phongsichomphu, et. al. (2013) whose researches suggested about technology learning environment can support innovation organization development.

##### **3. Factors related to Educational Innovation in Thailand Public University**

Educational Innovation in Thailand Public University correlate with many aspects but Education effect and Social effect have been directly effects because when the social context change, the new generation must turn to the new thought, Educational Innovation may have two functions: as a generator and as a receiver affects at the same time. This conclusion accord with paper of Siripatrachai (2013).

#### **Conclusion**

The research results displayed that Educational Innovation consists of 3 components: Newness, Economic Benefits and Knowledge and Creativity Idea. And have 5 forms: Curriculum Innovation, Learning Innovation, Media of teaching Innovation, Evaluation Innovation and Management Innovation. Then, internal factors: Leader is

the highest factor, like Technology from external factor group affected to Educational Innovation. Finally, Educational Innovation related to all aspects especially in Education effect and Social effect.

### **Recommendation**

This research has suggested that the central government officers should determine a policy for preparing and promoting the educational institution leader who have a vision that response to the dynamic changing, meanwhile they must invest in up to date innovation technology and set a development program for educational people using these instruments. For Educational innovation, the leader should concentrate in education aspects especially in the 21 st century learning skills.

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***Authentic vs Non-Authentic Materials in Teaching English as a Foreign Language (EFL) in Indonesia: Which One Matters More?***

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**Abstract**

The popularity of English around the world, including Indonesia, results to the increasing demand of learning this language as a means of communication. Unfortunately, there has been a gap between the language taught in the classroom and the language used in the real life. In fact, many university students in Indonesia are still reluctant to speak in English. Thus, it is suggested that the language taught in the classroom should reflect how it is used by the native speakers. Consequently, authentic materials become popular. Klickaya (2004) characterises authentic materials as materials which expose the real life and how it is used in the target language. Similarly, Little, Devitt, and Singleton (1989) as cited in Peacock (1997) identify authentic materials as materials which are created and used for the social purpose of the native speakers. Some examples of authentic materials are a magazine, map, news, TV show, newspaper, and poster. Authentic materials are regarded as beneficial tools in teaching English in EFL countries since they reflect the naturalness of the language, trigger learners' motivation, contain cultural content and improve the communicative competence. However, the complexity of authentic materials makes the learning becomes more complicated (Guariento & Morley, 2001). Thus, it is believed that non-authentic materials are more relevant to be implemented as the materials are more simple and suitable for EFL context. Hence, using authentic materials in teaching English in tertiary level should take some considerations into account to minimise the risk and maximise their use in the classroom.

Keywords: authentic materials, non-authentic materials, teaching English, Indonesia, tertiary level

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## **Introduction**

Language is used as a medium of communication. People utter the language to communicate either in the form of oral or written language. Rogers and Medley (1988) state that people communicate with purposes. He explains that through language, people exchange the information, express ideas and emotions which make communication meaningful. As we know, there are many languages spoken in this world, and all of them share the same function; that is for communication. As a foreign language, English has been widely used by many speakers. Unfortunately, there has been a gap between the language taught in the classroom and the language used in real life. For example, English conversation taught in the textbooks and the classroom tend to be unable to represent the actual model of how it is conducted in real life of the native speakers. Thus, some conversation activities conducted by the students seem unnatural. Moreover, it is argued that although the learners have learned English in the classroom for years, they are still unable to employ English in real life.

As a result, there has been a demand to teach English in a more communicative method. It is suggested that the language taught in the classroom should reflect how the native speakers use it. Therefore, authentic materials become popular. Some examples of authentic materials are a magazine, map, news, radio or TV show, newspaper, reality show, and poster. Meanwhile, the textbook is an example of non-authentic material, which mostly teachers use in the classroom. Many experts have agreed that the use of authentic materials in teaching English in the classroom result to many benefits. The most important component which should be the concern of the teachers is on the way the authentic materials should be delivered and used in classroom activity to get maximum learning outcome. However, teachers and scholars also argue that non-authentic materials are also effective for teaching English because those materials such as textbooks are designed for teaching purposes so that it suits the learner's ability and needs. Thus, there has been a debate on which materials are more effective for teaching English in Indonesia.

In this paper, I will explore the notion of authentic materials and non-authentic materials in teaching English as a Foreign Language (EFL) in Indonesia and then I will critically discuss it. I will begin this paper by defining the concept of authentic materials and non-authentic materials and then analyse the advantages and the disadvantages. Some issues regarding their implementations will be discussed. Then, I will conclude by outlining several recommendations and solutions in delivering authentic and non-authentic materials and how teachers play a significant role in the classroom.

### **Definition of authentic materials and non-authentic materials**

To begin with, I will discuss the concept of authentic materials. There have been several variations of definition proposed by scholars. In fact, I can infer that all definitions explained by the scholars are associated each other. Authentic materials are also known as real-life or genuine materials. Martinez (2002) as cited in Al-Azri and Al-Rashdi (2014) defines authentic materials as materials which are aimed at native speakers daily

life and not for teaching purposes. Meanwhile, Klickaya (2004) characterises authentic materials as materials which expose the real world and how it is used in the target language. On the other side, Little, Devitt, and Singleton (1989) as cited in Peacock (1997) identify real-life materials as materials which are created and used for a social purpose in the language community of the native speakers.

Also, Rogers and Medley (1988) characterise authentic as materials which expose the genuineness and naturalness of the language and well-contextualised in the native speakers' context. These materials can be in the form of oral and written form. Moreover, Wong, Kwok and Choi (1995) describe that authentic materials are identified by their authenticity in time, people, and location. These materials exist in the target language country, used by the people of that country and exist in the current situation. Generally, I conclude that authentic materials are real materials which exist in the real world of the target language, used in their daily life and not produced for teaching purposes.

Furthermore, Gerbhard (1996) as cited in Oura (2001) informs that authentic materials vary into several types. They can be in the form of listening materials such as radio show and songs, visual materials like the TV show and movies, printed materials such as a magazine, poster, and map, and realia or real-world objects like dolls. Many authors have examined the use of authentic materials in the classroom practice. They agree that the use of the materials is very prominent for the students. The following parts will discuss the advantages and disadvantages of authentic materials in the classroom.

On the other side, non-authentic materials are teaching materials which are made and designed for teaching purposes only. These materials are planned, designed, and produced based on the curriculum and policy in each country, in this context, Indonesia. These materials are usually in the form of textbooks. These textbooks are also built upon the learner's needs and ability.

### **English language teaching in tertiary level in Indonesia**

English language in Indonesia is placed as a foreign language. Based on Lauder (2008), since the status of English as an international language, English becomes the most important foreign language to be taught in an educational institution in Indonesia. The use of English has been widely demanded in every sector such as economic and business, politic, media and communication, the cultural sector and many others. English subject becomes a compulsory subject in tertiary level in Indonesia, for every major or department. Thus, all university students are required to take one unit of English subject during their study at the university. Moreover, the students are not merely required to take the unit but also to show the outcome. Upon their completion of their study at the university, all students are demanded to take English proficiency test as one of the requirements to graduate (Emilia, 2005). One of the most common English proficiency tests in Indonesia is TOEFL test. Usually, every department put their own standard of TOEFL score for the students to achieve. If the students fail to accomplish the score, they need to retake the test so that they can graduate.

Since the demand to master English is really high in Indonesia especially at the tertiary level, thus, teachers are expected to be supportive and innovative in teaching English in order to help the students to achieve their target. One of the strategies is by applying appropriate teaching materials. A study conducted by Zacharias (2003) who analysed the teachers exposes that teachers in Indonesia prefer to use authentic or real-life materials from English speaking countries. This is because of several reasons. Firstly, they considered that local teaching materials are mostly incomplete and inaccurate. Secondly, they find it difficult to choose and design the materials which suit the learners' competence while authentic materials are easy to find. Thirdly, teachers believe that by exposing the students to authentic materials, it can positively improve the students cross-cultural understanding.

### **Advantages of authentic materials**

Now, I will present the benefits of authentic materials in five aspects. Firstly, genuine materials enable learners to experience the real language and have a closer interaction with the target language (Klickaya, 2004; Al-Azri & Al-Rashdi, 2014; Huang, Tindall & Nisbet, 2011). Klickaya (2004) states that the use of authentic materials gives learners genuine exposure of the target language. By using authentic materials, learners can feel directly how the language they learn is employed in the real situation. Moreover, it makes them feel closer to the target language as they use the items which exist in real world, in their classroom. This is also in line with Al-Azri and Al-Rashdi (2014) who underpin that real-life materials are significantly lessen the gap between the language taught in the classroom and the language used in real life. Other scholars who support this are Huang, et al. (2011) who argue that by experiencing the real language in the classroom, it will prepare them better to employ English outside the classroom and use them to communicate effectively. Once the learners are familiar with the language during the classroom practice, it will be much easier for them to employ it in the real situation.

Secondly, real-life materials are regarded effective to motivate learners in learning English. According to Oura (2001), triggering learners willingness and interest is still a challenging task for the teachers. Oura suggests that teaching material is one of the elements which determine learners' motivation. Thus, scholars found that authentic materials can effectively improve learners' willingness in learning English. One of the scholars who uphold this idea is Peacock (1997). Peacock in 1997 conducted a study involving university students in South Korea who learn English. The aim of his study was to analyse the use of authentic materials and their implication toward students motivation. His study involved 31 university students who were divided into two experimental classes. He applied both authentic materials and artificial materials such as course books in the two classes. As a result, the study indicates that authentic materials can improve learners' motivation and participation in the classroom. The data shows that students' on-task behaviour and motivation were increased during the meeting when genuine materials were delivered. He argued that the learners are being triggered to involve in the classroom when the teachers used authentic materials. As their motivation increases, their participation in the classroom arises as well.

Also, Peacock's argument shares commonality with Hwang (2005) who affirms that real-life materials can create interactive learning. It is because real-life materials are varied in different forms and models. Materials such as a magazine, songs, and poster are more interactive for the learners instead of textbooks. Teachers can develop various classroom activities which stimulate learners' participation through the real-life materials. For example, by using western songs, it can teach students many new vocabulary and language features, while at the same time, learners can also enjoy the song. Hwang also declares that the interactive learning will result in a better English language environment, where the learners feel pleased in learning the language.

Thirdly, real-life materials can increase learners communicative competence. My argument is supported by two studies. A quasi-experimental study was conducted by Gilmore in 2011 to discover the impact of implementing authentic materials and its relation to communicative competence. Same as Peacock, the participants of his study were also university students. Both studies were conducted in EFL countries. Peacock's research was conducted in Korea while Gilmore's was in Japan. The participants were 62 of university-level students in Japan. It compared the communicative competence of both control group who use textbooks and an experimental group who use authentic text as materials. The communicative competence was analysed through eight tests: a listening test, a pronunciation test, a C-test, a grammar test, a vocabulary test, a discourse completion task, an oral interview, and a role-play. The finding indicates that the students who use authentic materials develop their communicative competence better than students who do not.

Another study was done by Purcell-Gates, Degener, Jacobson, and Soler in 2002. Although the context of the study was not in EFL countries, the finding still proves the positivity of authentic materials. The participants were 159 of adult literacy students in the United States. The result shows that authentic materials improve learners literacy development. It indicates that using authentic materials and authentic activities in the classroom give better impact on the literacy of adult learners. It is argued that the learners are getting used reading and writing more complex text outside the classroom after the teacher introduced authentic materials.

Fourthly, Rogers and Medley (1988) further add that authentic materials are resourceful materials to learn the culture of the target language. They contain cultural information which may benefit the learners to increase their awareness of different culture. Through materials such as TV shows or magazine, students can learn the culture or the habit of the people in the target language which can satisfy their curiosity. Klickaya (2004) also shares the same idea. She argues that cultural content in English language teaching materials has been widely discussed in recent years. Learning language is not only about language features but also about the culture of the target language. She believes that through assistance and appropriate materials given by the teachers, cultural content can be a useful teaching strategy.

Lastly, authentic materials do not only benefit the students. Teachers can also feel the advantage of authentic materials. Wong, et al. (1995) suggest that real-life materials

allow teachers to develop and design the teaching curriculum. These materials are considered valuable to help teachers design the curriculum and organise the classroom activity based on learners' need and interest. They claim that sometimes non-authentic materials are way too easy or too difficult for the students. In other words, not every artificial material suit the learners' ability. Besides that, Huang, et al. (2011) also believe that authentic materials are effective means for teachers in encouraging and empowering students to achieve their goal of learning the language. However, a study conducted by Lee in 2010 reveals that teachers in China are not yet aware of the benefit of authentic materials. As a matter of fact, the authentic materials are not commonly used during the teaching process. Lee (2010) suggests that teachers awareness toward the use of authentic materials can be one of the key points to insert during teachers professional development training.

### **Disadvantages of authentic materials**

In this part of the essay, I will discuss the ideas which disfavour the use real-life materials. Besides the many benefits, scholars believe that authentic materials also result in several disadvantages. Firstly, Rogers and Medley (1988) argue that unedited authentic materials are too difficult to understand by learners. It is because authentic materials contain complex words and language features (Gilmore, 2007). The materials given in the classroom are genuine and delivered without any editing process. There will be many unfamiliar words which may be too hard for the English as a Foreign Language (EFL) learners. As a result, this will lead to frustration and confusion by the learners as claimed by Guariento and Morley (2001). The learners will feel frustrated because they do not completely understand the words while they are required to complete the classroom activity. Thus, some scholars against the claim that authentic materials are interesting. Moreover, a case study of Korean University students by Peacock (1997) shows that authentic materials are less interesting by the learners. Even though his study also reveals that real-life materials are effective in improving learners motivation and helping the learners to participate in classroom activities, ironically, the learners do not see those materials interesting and enjoyable.

Secondly, Martinez (2002) as cited in Al-Azri and Al-Rashdi (2014) note that authentic materials might be culturally biased. It is because most EFL learners have different cultural background with the target language. This may lead to confusion and misunderstanding since the learners are not fully aware of the cultural differences. Both teachers and students may find cultural exposure in the materials are worrisome. There are some culture and habit in the target language which may not be appropriate and unfamiliar in other cultures. If the learners are being exposed to new cultures, the cultural change may likely to happen.

### **Advantages and disadvantages of non-authentic materials**

Non-authentic materials are considered more suitable and appropriate for the learners. As it has been discussed earlier, real-life materials are too complex and difficult to be understood. On the other side, non-authentic materials such as textbooks are designed by

the teacher based on the learners' capability and language level. Thus, it is easier for the learner to master the lesson. In addition, cultural content in the real-life materials is also considered an issue in using them in EFL context such as Indonesia. It is believed that the use of language should suit the local context. Since real-life materials also contain some cultural difference between the target learner and the target language culture, it is considered better for the teacher to use their own materials which are non-authentic. Those non-authentic materials are argued as more culturally appropriate for the learners. Moreover, it is believed that there is no urgency in teaching English by using authentic materials since English has been considered as an international and global language. Thus, learning the target culture of English is no longer seen important. English as global language does not require the learners to internalize the local culture of the target language (Smith, 1976 as cited in Lauder, 2008).

However, as non-authentic materials are designed and simplified by teachers, it makes non-authentic materials seem unnatural. Textbooks and simplified learning materials are considered giving lack of exposure to the real English language use in daily life. Thus, it is argued that giving the learners authentic materials should be encouraged. Brosnan, Brown, and Hood (1984) as cited in Oura (2001) argue that authentic materials reflect the naturalness of a language. Learners should be exposed to the variety of language form and vocabulary. He claims that simplification of non-authentic teaching materials will increase the difficulty of the task. This statement is also supported by Guariento and Morley (2001) who clarify that the goal in using authentic materials is not to achieve a complete understanding. The focus is on the comprehensive process which takes place when the students extracting the information and knowledge from the materials and make use of them. Therefore, the complexity of the materials should not be a constraint. Also, Gilmore (2007) notes that the unedited authentic materials are suitable for learners to improve their English. As the materials expose various grammatical rules and language features, the learners will keep extracting new knowledge of the language. Gilmore then adds that learners will not be able to learn new things if they are not being exposed to it. Once they get used into the complicated world of the language features, their language proficiency will be more likely to improve.

### **Authentic materials or non-authentic materials?**

Due to the complexity and the problem of cultural content in authentic materials, simplification of authentic materials is proposed by many scholars. Teachers may edit and adjust the authentic materials so that it will suit the context. Thus, students can still be exposed to real-life materials. However, Guariento and Morley (2011) note that there is also a problem in simplification of authentic materials. According to them, if authentic materials are edited and simplified, then they are no longer authentic. Thus, if teachers are to give the students authentic materials, they need to maintain the originality of the materials. Adjusting the English materials with Indonesian culture, for example, will affect the naturalness of English itself.

The cultural difference between Indonesia and the English speaking countries where the authentic materials originally come from has become the most significant issue which

problematizes the use of authentic materials in Indonesia. It is believed that there is some cultural content presented in the materials which are different and even inappropriate with Indonesian culture or believe. Then, this reason is the idea why teachers should adjust and simplify the materials. Lauder (2008) then concludes that Indonesian educational policy has a certain sensitivity toward target language culture. Indonesian teaching tends to believe that target language culture may give bad effect toward the local culture. As a matter of fact, the cultural difference should be learned instead of avoided. Regarding this problem, Klickaya (2004) clarifies that learning a new language is not merely about learning the grammatical rules, vocabulary, and the language features. Learning a language means getting to know the culture as well. It is because language and culture are inseparable. She also argues that learning the culture does not necessarily mean accepting and adjusting the new culture into the learners' context. The culture according to her is used to trigger learners' interest and make the learning process more relaxing and enjoyable.

McKay (2000) as cited in Klickaya (2004) also discuss the same idea. He argues that the cultural content in the materials may vary. The materials are not aimed to expose only the culture of the target language, in this context Western culture. The learners will also learn the culture from different parts of the world. This is in line with Zacharias (2003) who notifies that since English has been regarded as an international language, thus English is no longer associated with any particular culture or country. People can learn various culture from different nations through learning the English language. Moreover, learners will also be able to integrate their culture with the culture of the target language or other countries. For example, when teachers use the poster. As we know, poster usually informs particular event or information. There are various posters which promote an annual event like Halloween and New Year. While showing the materials, teachers will explain the meaning of the events and how people across the world celebrate them. Hence, I conclude that cultural content in authentic materials is efficient to build learners enthusiasm, awareness and mutual understanding across the world.

The use of both authentic and non-authentic materials in English teaching classroom in Indonesia may face challenges. For authentic materials, it is believed that although authentic materials are resourceful sources to learn authentic target language and cultural lesson, they are rather difficult to learn due to its complex language content. On the other side, non-authentic materials are more suitable for EFL learners because the content has been adjusted to the students level and context. However, they may seem unnatural and do not present how the language used in real life. Thus, it can be seen that there is an endless debate about which kind materials should be implemented in English language lesson, either to use authentic or non-authentic materials.

## **Solutions**

To address the issues which surround authentic and non-authentic materials in English language teaching in tertiary level in Indonesia, some solutions are proposed. It is not about which materials should be taught but rather on how to maximise the use of both materials in the classroom to improve the students' language competence. Thus, it can be

inferred that both authentic and non-authentic materials play a significant role in language teaching. Although their issues may result in some problems, thus, some solutions can be taken into account.

Firstly, Lauder (2008) enhances that sensitivity toward target language culture should be minimised. As it has been mentioned before, learning different culture can also be beneficial for the students to improve their cross-cultural understanding. Moreover, Lauder also notes that learning target language culture does not necessarily mean to imitate that culture. Learning culture is also aimed to improve the students' awareness that they live in a diverse universe. Zacharias (2003) highlights the importance of teaching cultural awareness in English lesson. Moreover, teachers can still teach their local culture in English lesson. Moreover, Gupta, 2001, as cited in Zacharias (2003) believes that local culture where English is taught also needs to be presented to contextualize the teaching.

Secondly, as the content of authentic materials is too difficult for the learners, the materials should be delivered along with some pedagogical support from the teachers (Klickaya, 2004; Al-Azri & Al-Rashdi, 2014). Complete understanding of the materials is not the main goal of employing authentic materials as long as the students can make improvements (Guariento and Morley, 2001). Hwang (2005) enhances that support from teacher to learner in extracting the content of the materials is also essential. Teachers are required to introduce and explain the uncommon words or grammar rules presented in the materials to avoid confusion from learners. However, this explanation should not be the main activity and only take place as a reminder for students. For example, when displaying the content of English TV show, teachers should list and define the less-frequent words which appear in the magazine beforehand.

Thirdly, teachers are expected to be able to teach language where the pressure in learning a real language can be diminished. They need to pay attention to the way of preparing, choosing and executing the authentic materials. They are required to choose appropriate materials by considering the learners' ability, interest, and cultural background. For example, when teachers use English magazine in the classroom, they need to look carefully into the content in the magazine. Once the materials are appropriate for learners, they may bring the materials to the classroom. Martinez (2002) as cited in Klickaya (2004) later adds that teacher should encourage students during the learning activity and make them feel motivated so that the students will not find authentic materials burdening and frustrating. Moreover, Guariento and Morley (2001) further add that authenticity does not only rely on the text but also on the task itself. They address the issue that teachers should also pay attention to how task activity takes place during the learning process. The materials used will be pointless if the activities are not meaningful for the students. This is also in line with Rogers and Medley (1988) idea that authentic materials cannot be considered beneficial if the classroom activities following them are not well-executed by the teacher. Furthermore, they advise that the first step teachers need to do in teaching is to encourage and to facilitate the learners to access the message in the resources. Thus, they believe that activities following the authentic materials are just as significant as the materials itself.

Therefore, teachers are advised to use both authentic and non-authentic materials to make the learners familiar with both types of materials (Al-Azri & Al-Rashdi, 2014). It is because the use of both materials is significant to improve the students' language competence as well as cultural understanding. If the teachers can pay attention to the way in delivering both materials, the problems can be diminished, and the learning goals from both teachers and students can be accomplished.

## **Conclusion**

Authentic materials have been widely known by scholars as a beneficial medium to teach English in the classroom. As discussed above, the goal of learning a foreign language is to be able to employ them in real life. Thus, real-life materials are considered as the suitable materials for language learners as they reflect the naturalness of language, improve learners' motivation, contain cultural content and positively affect the communicative competence. On the other side, although non-authentic materials such as textbooks are not as natural as authentic materials, their use in the language classroom is also prominent because non-authentic materials are more simple and appropriate with learners context and language level. Therefore, the use of both materials can be combined during the lesson as both of materials has their own role in English language classroom. Finally, after critically discussed the issue surrounding the use of authentic materials and non-authentic materials, I suggest that both materials are effective to be implemented in English language classroom as they positively support the teaching and learning process of English classroom. Some problems drawn for the use of the materials can be decreased through some recommendations and solutions which has been discussed in the previous parts.

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***Saw Vocal Tradition in Local Schooling: The Contestation between Official Knowledge and Localized Knowledge***

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**Abstract**

The prevailing discourses on Thai Education indicate that school is highly institutionalized and culturally hegemonized. It serves an important apparatus for the reproduction of state ideology in disciplining and preparing desired citizen. This paper is a conceptual paper that aims to address the question of whether school is actually a negotiating space. The paper argues that school is an opening space for negotiation and contestation for knowledge, thought, belief, and cultural politics. Based on the examination of Saw Vocal Tradition (or Lan Na Oral Poetry) contained in local curriculum in Chiang Mai province, the study found that Lan Na sociocultural capital developed in the past two decades served as the important force that made it possible for knowledge and culture of the locals to be included in local curriculum of schools, which were highly oriented to localness. When Saw Vocal Tradition as a Lanna culture product was included and represented in local curriculum, it reproduced imagined Lan Na identity, on the one hand. On the other hand, it served to reproduce 'theatrical state'. The study also revealed that the presence of Saw Vocal Tradition in the local curriculum of the schools led to the institutionalization of local knowledge to become local official knowledge. This phenomenon restricted the inclusion of other local knowledge that was not institutionalized from local curriculum in school. This study concluded that ongoing contestation in school is needed in order to provide school with choices in teaching, developing, and cherishing students.

Keywords: Saw Vocal Tradition, Curriculum, Localized Knowledge, Contestation

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## Introduction

### “Saw Vocal Tradition”: The meaning and social space.

“Saw Vocal Tradition” is a kind of duet involving reciprocal songs between men and women. It is derived from traditional Lanna culture which has been gaining a large traction in the Thai state and among localist groups/ Lannaists/in the past two decades. The Saw performance and signing has been used to construct and explain about “Lanna identity” all along.

Historically, it could be assumed that “Saw Vocal Tradition” has been performed by people in Lanna with Chiang Mai as the center of local administrative powers. It has mainly fulfilled an entertainment purpose since King Menrai the Great (Songsak Prangwattanakul, 1989). Later when Lanna was a principality and semi-colonized by of Siam, the Lanna women dignitaries including Princess Dara Rasmi, a princess consort of Chulalongkorn, King Rama V of Siam has adopted Saw performance and had it performed in the ceremonies to greet and honor visiting dignitaries of high ranks from Siam (Chutima Khongsanthia, 2556). It shows how Saw Vocal Tradition has been existing across the classes of the Lanna people through generations. The performance itself is quite diverse in terms of the musical instruments, the melodies, and the language based largely on the dialect used locally.

Compared to other local cultures, Saw Vocal Tradition is similar to “Klon Mor Lam” in the Northeast, “Pleng E-Saew” in the Central Plain and “Lamtad” in the South since its musical genre is flexible and its melodies and lyrics can be subject to modification by the singers themselves or the artists. The lyrics can either be prepared in advance or improvised, or even a mixture of both. The singers of “Chang Saw” are at their liberty to choose part of the prepared words to sing or just mix it up with their improvised words and melodies.

Saw Vocal Tradition is therefore a kind of literature composed of “coding” or “symbolism” or “message” to convey the meaning between the artists (*Chang Saw*) – both men and women – so long as it is appropriate to the context and the feelings of the audience. It also depends on the intent of the artists as the performers. Work by Oraphin Sroyyana (1990, p. 8) reveals how Saw Vocal Tradition has been approached differently as a ritual or a medium of entertainment. On some occasion, Saw Vocal Tradition has also been vehemently used as a tool to gain political leverage from the state by various marginalized groups.

Academically, Saw Vocal Tradition is treated as a genre of Lanna local literature emphasizing entertainment, politics, culture, tradition and way of life. It helps to shed light on Lanna agrarian society and mirrors the way of life in society and about local people including their “eating, shitting, fucking and sleeping” daily pattern as well as the social life interwoven with the mundane and divine worlds. Saw Vocal Tradition is also approached through cultural study as a reproduction of the process to construct the identity permeated with cultural and political dimensions. In addition, Saw Vocal Tradition is treated as folk media by mass communication gurus from various schools as a powerful mode of communication. It has been instrumental in the development and evolution of the public sector, as the state has often adopted Saw Vocal Tradition songs to convey their messages to local people, such as by using Saw songs during the

campaign to encourage people to cast their votes (Bussakorn Samrongthong, 2552 ; Chiraporn Khunsri, 2014).

### **Saw Vocal Tradition as local knowledge.**

Schooling is part of social space and is instrumental in cultural transmission. Cultures and wisdom are passed on through the education system, rituals and all other aspects of learning process in the school. The school's pedagogy, curriculum, course activities, and rules have been developed to expose the students to a hidden curriculum which aspires to instill such consciousness and cultural norms among the students (Tierney, 2002; Nongyao Nawarat & Chayanisuan Yimsawat, 2017).

In addition, the schooling system has incorporated wisdom, knowledge or cultural production of villagers. It aims to reorganize local knowledge making it more compatible with modern society. All is aimed at making foreign knowledge become more Thai. This has happened inside and has expanded to outside the schooling system (Monthana Pipatpen, 2004). Saw Vocal Tradition as a cultural output of Lanna society is therefore part of such phenomenon. It is almost inevitable to avoid "clash" or "assimilation" with the new "education propellers" which have become more involved with, and have influenced the status of "Saw Vocal Tradition" in the education provided in local schools.

The present study attempts to use "Saw Vocal Tradition" as a key to shed light on and unveil what has been happening behind the scenes in Chiang Mai's local schooling. It aspires to draw the attention to the fact that "Schools are not just a closed and rigid space or a highly institutionalized space which tends to culturally dominate or reproduce certain ideologies to prepare desirable citizens for the state. Rather, Chiang Mai's curriculum and local schooling (as in other localities) can be a space with great flexibility which provides for the expansion of – and can be powerful enough to contend with – "official knowledge". It can give rise to leverage, contestation, clash and cooperation in order to re-localize knowledge and thought incompatible with – and in relation to – the construct of Lanna identity. It is also an attempt to ask: since schools are a cultural space, how have they incorporated "localism"? What are the educational actors? What are the discourses that have been produced by and have emerged from such schooling system?

All these questions should help us to come to term with the "complex education identity" emended in the contemporary Lanna social space which can be visualized through the rise of arts and cultures that move about and express themselves in and around the local schooling system. The aforementioned questions shall be tackled by documentary research and interviews as well as observations of teaching courses for children led by two senior local artists in Chiang Mai and Lamphun in July 2017. Both singers have made an attempt to form an association of the local Lanna Saw singers and have been playing an important role to pass on the tradition of Saw Vocal Tradition in schools. They have been instrumental to promote the teaching of Saw Vocal Tradition. With help from the Ministry of Culture, an attempt has been made to develop the curriculum on "the essence of local performing arts including Saw Vocal Tradition in 2007".

### **School and the construct of “Thainess”.**

On one hand, the state education provided for local people tends to focus on increasing Thai literacy through the schooling system in order that they can conveniently interact with the authorities and can use it as a springboard for their occupations. On the other, modern education by the Thai state has been flourishing through the bureaucratic system with an emphasis on the construct of “Thainess”. Emphasizing the teaching of Thai language makes it dominate and replace local dialects. Such education has been part and parcel of a political project by the state ever since public education has been developed in the Thai nation over one hundred years ago. During the time the Lanna political structure has been assimilated to the Siamese or Thai nation state, education has been used as a tool by the state to impose ideologies and to transform the imagination and mentality of local people imposing on them the same perspectives as Siamese or Thai people. This is to ensure national integration through focusing on teaching Thai language, Thai history, arts and culture in Thailand (Arsa Khambha, 2006; Nongyao Nawarat & Chayanisuan Yimsawat, 2017).

While such attempts have been made to assimilate, the weakness of Siamese education has also constantly been contested. It reflects a social truth regarding education that it is not fixed and durable. Instead it has been challenged by the disillusioned, particularly some local people who fail to live a sustainable livelihood, having to rely on such reductionist education without any relevance to their own lives or their social views. The questioning of the Thai education system has expanded to target policies and contents of the curriculum provided for by the state from 1973-1976.

A critique of such education systems has emanated from the leftist intellectuals. They have been influenced by literatures on education including by the pedagogical works such as Paolo Freire (1970) or Ivan illich (1971), among others. Then, around 1990s, the critique against the education system has been replaced by an education perspective pushed through by “the rise of community culture” and reflections made up on themselves among the Lannaists during the celebrations to mark the 720th anniversary of Chiang Mai. Nationally, a devolution project was revived and dusted off and gave rise to the promulgation of the 1999 Education Act gesturing an incorporation of local wisdom with curriculum in schools.

### **Conclusion**

#### **Saw Vocal Tradition and the construct of “imagined Lanna identity”.**

There is a dynamic political interaction of various sets of ideological culture in the official curriculum and the hidden curriculum in school. It should be noted that “Lannaness in school” has been systematically developed as contention to “Thainess in school”. This is different from the past when such Thainess was dispersedly permeated along with the state knowledge. That utilization of both state knowledge and Lanna knowledge to construct a complex Lanna identity has started from an education space when the Ministry of Culture has developed the curriculum on “the essence of local performing arts including Saw Vocal Tradition in 2007” (Office of the National Culture Commission, 2007). Meanwhile, senior teachers, men and

women, have formed themselves into associations of traditional Lanna Saw singers bearing various names in all eight provinces in the Upper North. From this time Saw Vocal Tradition could poignantly contend with other forms of knowledge in the schooling sphere. Groups of five senior Saw singers, with two singers and three musicians, have been assigned to teach in hundreds of schools. Based on the interviews of the senior singers highly revered as artists and maestros of Saw Vocal Tradition in Chiang Mai and Lamphun, it was found that their schedules were tightly full during the three-month-vacation.

In such context, Saw Vocal Tradition has expanded beyond just the monastic sphere, merit making ceremonies, or rituals performed in rich people's houses, to public performance of art and culture in public venues including the Art and Cultural Hall, a welcoming party for foreign dignitaries, broadcasting media, and "schools". Previously, Saw Vocal Tradition could not exist in any of these spheres. Such a phenomenon implies that schools through local curriculum development have explored and incorporated traditional cultures to reproduce them and put them on the map in response to the need of local educational institutions. It also demonstrates that the new Lanna identity has been developed through schools. This reflects the contestation and cooperation between the traditional Lanna and modern Lanna as well as the intense competition among the different sets of knowledge in order to construct the identity and the "imagined Lanna identity".

### **Saw Vocal Tradition as part of the official localized knowledge.**

The "official localized knowledge" of Saw Vocal Tradition has been incorporated into the school curriculum. Through the process to ensure local culture and wisdom be recognized as part of the official knowledge, the identity of such local wisdom has been reduced to merely serving the transmission and reproduction of culture and wisdom, being taught as part of the curriculum on "the essence of local wisdom". Therefore, Saw Vocal Tradition has to be adapted and adjusted to accommodate the modus operandi of the academic realm of schools. The officialization of such local knowledge as part of the formal education in order to pass on Saw Vocal Tradition as local culture and wisdom has appeared in the standardization of the singing, sitting posture, utterance and lyrics, or even how to walk during the performance. In other word, all the patterns of the performance have been changed and assimilated to the "Chiang Mai accentuation". It is believed that such standards shall garner beauty and popularity for the performance. Meanwhile, attempts have been made to ostracize and exclude any Saw performance which sounds and appears to be "Non-Chiang Mai". Such Non-Chiang Mai performances and the reproduction of such knowledge have been excluded from the mainstream. As a result, Saw singing has been divided into different standards to illustrate objectives of the curriculum, the contents, and how to train the teachers. In practical terms, there have always been competitions among avant garde Saw signers at the regional level. Such competitions have often been held in Chiang Mai whereby the singers from different schools in different provinces could compete. But such standards of arts and cultures have affected "traditional" local culture and wisdom. The young Saw singers have to adjust their dancing posture and the rhythm of their music to suit the Chiang Mai standards as well as their sitting posture and the politeness of the proses that have to accommodate to the Thai/Chiang Mai style of politeness and civility. This phenomenon implies a belief in the establishment of "genuineness", or "standard mold" or "the extreme quality of Muang

Chiang Mai” of the “ideal Lanna”. It has given rise to the concept of placing Lanna as the center of the region with the power of Lanna has derived from being a peripheral state of Siam.

### **A new phase of contestation.**

Thus in the past decade, an effort has been made to turn Saw Vocal Tradition into an identity and the officialized local knowledge as part of the movement for social transformation through education reform at the local level. Such education actions to integrate local culture and wisdom has led to a challenge of the aged-old landscape of knowledge that had been nurtured in the past one hundred years which rejected schooling system. It has facilitated the emergence of a space for contestation and competition of knowledge and ideologies between marginalized groups of people and the ruling class. The power of localism/Lannaism has become social and cultural capital that has given rise to new forces which help the transmission of local culture. Such new forces have provided the local Lanna society a narrative about the process to revive localism through education to prevent the monopolization and hegemonic powers. However, such local curriculum and local schooling systems have also given various groups, state, private and civil society, a space in which they can maneuver their powers in the struggle to achieve the maximum interests and to serve their own political and cultural goals.

A more thorough review of educational activities that have emerged in the official curriculum and hidden curriculum and hidden culture would shed light on the formation process (the reproduction, the invention, and the reorganization of knowledge) which is relating to the process to construct Lanna identity and Lannasim. This would demonstrate the structure of power contestation and cooperation among Chiang Mai, Siam and other forces that have emerged in the midst of modern development and urbanization of Chiang Mai.

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***The Curriculum Evaluation on Doctor of Optometry Program, Ramkhamhaeng University: The First Optometry Program in Thailand***

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**Abstract**

The purpose of this study was to evaluate the Doctor of Optometry Program of Ramkhamhaeng University, the first optometric curriculum in Thailand, based on CIPP Model. The population of this study was 10 teaching staff, 95 students, 31 graduates, 24 graduate employers and 5 stakeholders. The instruments were the demographic data sheet, and the researcher's five-level rating scale questionnaires examined by research experts. Descriptive statistics was used in data analysis. The results from context evaluation indicated that the curriculum objectives were consistent with social needs, unique, and practicable. The credit hours specified in the curriculum structure were appropriate. Most of the subject contents and learning outcomes were highly consistent with the curriculum objectives, social needs and up to date. The results from input factors evaluation showed that the suitability of the teaching staff qualification, admission requirement of the student and other factors conducive to the teaching learning process were highly appropriate except in the information resource services and library, which was rated average. The results from process evaluation revealed that the teaching-learning arrangement and course evaluation were highly appropriate. However, there was a suggestion that the examination-related regulations should be more rigorously enforced. The results from product evaluation in terms of the graduates' qualifications were highly consistent with the curriculum objectives and learning outcomes. The graduates can use information and communications technology appropriately and have good understanding in the principle of optometry concepts. However, the graduates' self-restraint, responsibility and English competency should be improved.

Keywords: Curriculum evaluation, Optometry, Thailand

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## Introduction

“Optometry” means the art of medical examination related to human eyesight. It consists of visual acuity test, visual diagnostic and evaluation using various instruments, and the correction using glasses, contact lenses and eye muscles exercise. However, it does not include the correction due to nervous system, the eye diseases not related to the refraction of light, the use of medicine, surgery and the use of lasers (Ministry of Public Health, 2003).

Ramkhamhaeng University’s Optometry curriculum is the first Optometry program in Thailand. The course was first offered since 2002 (Institute of Health Science, 2001) with the academic cooperation with Indiana University from the United States of America for the draft and the management of the curriculum in order to develop bachelor’s degree (6 years) graduates that can perform in the art of optometry profession. Optometrist is a well-known profession in many countries for several years but it is a new trend in Thailand and a certification is recently required from the ministry of public health in order to become an optometrist in Thailand (Ministry of Public Health, 2003).

Later on, many Universities such as Naresuan University, Rangsit University and Chiang Mai University started offering Optometry curriculum. And in conjunction with the revision of professional laws resulting in the appointment of the profession commission, which has the duty to specify the professional standard and evaluate and approve the Optometry curriculum degrees from various Universities. Therefore, the graduates who graduated from the approved curriculum can apply for the certification examination in order to perform the art of Optometry profession in Thailand (Bureau of Sanatorium and Art of Healing, 2012).

Ramkhamhaeng University’s Optometry curriculum was first revised in 2012 (Faculty of Optometry, 2012) in order to make the curriculum conform the Thailand Qualification Framework for Bachelor’s Degree (Office of the Higher Education, 2009) and the profession standard.

However, Ramkhamhaeng University’s Optometry curriculum, which is the first optometry curriculum in Thailand and is the prototype curriculum for various Universities, has been used for more than 10 years but has never been fully evaluated. The researchers were then decided to evaluate the Optometry curriculum (revision 2012) of the faculty of Optometry, Ramkhamhaeng University by studying from the lecturers and the students in the 3<sup>rd</sup> to 6<sup>th</sup> years participating in majored courses, the graduates who graduated from the program during 2013 – 2015, and the curriculum’s stakeholders from related establishments in order to use the data acquired from the evaluation to develop and improve the curriculum while keeping the curriculum in conformance with Thailand Qualification Framework for Bachelor’s Degree (Office of the Higher Education, 2009), the related standards and context of the University and society.

## Objective

To evaluate the Optometry curriculum (revision 2012) of the faculty of Optometry, Rakhamaeng University using CIPP model by evaluating input, process and output.

## Conceptual Framework

The researchers used the conceptual framework related to curriculum's evaluation (Stufflebeam, 1971), Thailand Qualification Framework for Bachelor's Degree (Office of the Higher Education, 2009), Bachelor's Degree Curriculum Standard (Ministry of Education, 2015) and the Standard for the Academic Institutes Developing Bachelor's Degree level Students in Optometry (Bureau of Sanatorium and Art of Healing, 2012) which led to the following conceptual framework:

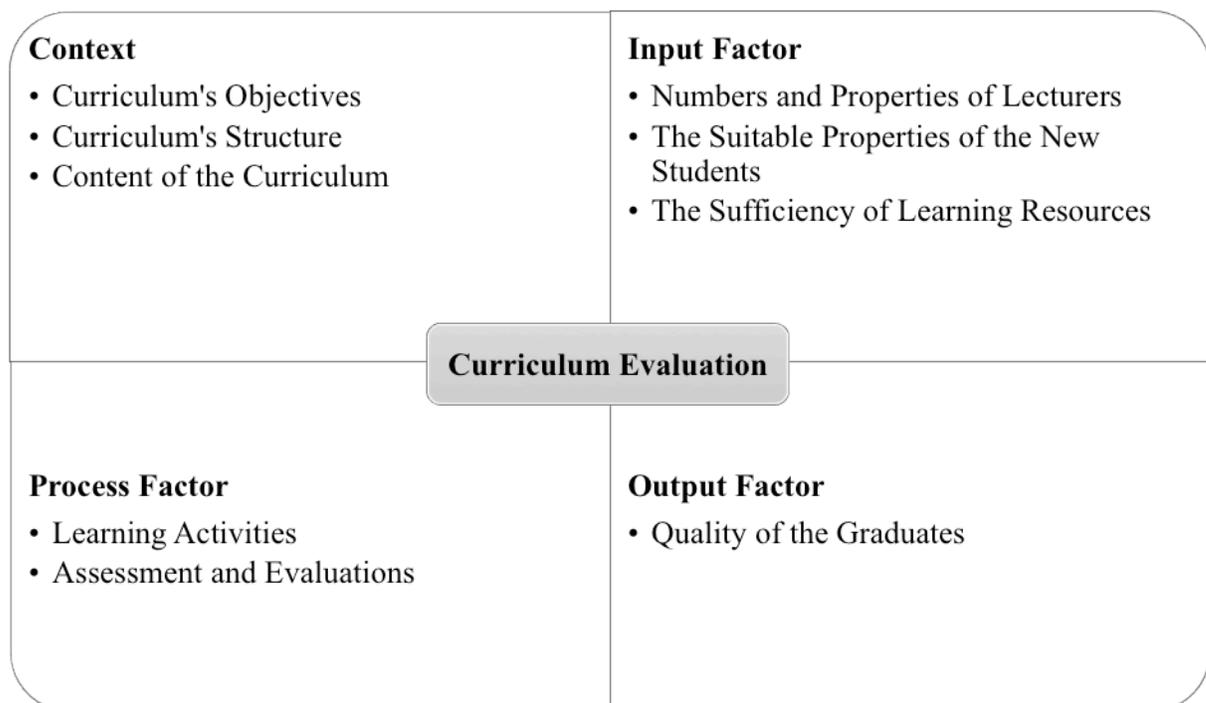


Figure 1: Conceptual Framework of the Research

## Research Methodology

### 1. Population and Sample Group

#### Population

214 participants consisting of 10 lecturers in the curriculum, 123 students in the 3<sup>rd</sup> to 6<sup>th</sup> years, 38 graduates who graduated from the program during 2013 – 2015, 38 employers of the graduates and 5 curriculum's stakeholders from related establishments were included in the study.

## Sample Group

This study used all of the population as the sample group. The number of the returned questionnaires was 165 or 77.10 percent.

## 2. Instrument Development

The instrument used in the research is a questionnaire. It is divided into two sections. The first section contains questions related to the basic and personal information of the participants. The second part contains multiple 1-to-5 scale rating and open-ended questions inquiry about the opinion on the curriculum. The content validity of the questionnaire was evaluated by three external matter experts and the result of index of item congruence calculation is 1. The reliability of the questionnaire was calculated using Cronbach's Alpha coefficient from 30 non-sample graduates with the reliability rating of 0.97.

## 3. Data Collection

After the research proposal was approved by the committees of the faculty of Optometry, the researchers collected the data from the lecturers, year 3 to 5 students and the curriculum's stakeholders using paper-based questionnaires and arranged the collection on premise. Online questionnaires were used for the 6<sup>th</sup> year students, which were training in various hospitals, and the graduates. For the graduates' employers, the questionnaires were sent and returned by post. All participants were informed regarding the purpose of the research that the participation was optional with no consequence to the result of their work or study, all data will be kept confidential and only the overview of the research will be disclosed.

## 4. Data Analysis

The collected data were analyzed using descriptive statistics. The data related to the basic information or participants and the structure of the curriculum use frequency distribution and then calculated for percentage, average and standard deviation. The open-ended questions were collected and presented using frequency distribution.

The average score can be categorized and described as follows:

4.50 – 5.00	Strongly Agreed/Highly Satisfied
3.50 – 4.49	Agreed/Satisfied
2.50 – 3.49	Neutral
1.50 – 2.49	Disagreed/Unsatisfied
1.00 – 1.49	Strong Disagree/Highly Unsatisfied

## **Research Result**

### **1. Basic Information of the Respondents**

The participants were divided into 5 groups as follows: (1) Ten academic staff in the Optometry curriculum with 50 percent of them had less than 5 years of experience. The highest level of education was bachelor degree (6 years) in Optometry (50 percent). Most of them (80 percent) were on lecturer rank. (2) Ninety five 3<sup>rd</sup> to 6<sup>th</sup> year students. Most of them are female (62.11 percent) and entered into the program during the year 2010 – 2015. (3) Thirty one graduates. Most of them are male (51.61 percent) and entered into the program during the year 2008 – 2010 and graduated during 2013 – 2014. All graduates were employed after the graduation (100 percent). (4) Twenty four graduates' employers. Most of them are female (45.83 percent) with bachelor degree (45.83 percent) and have on average 15 years of experience (S.D. = 14.11) in private sector (54.17 percent). (5) Five stakeholders from related establishments consist mostly of male (60 percent) with master degree (60 percent) and currently running their own business (60 percent) in private sector (80 percent). The average working experience of the stakeholders is 16.6 years (S.D. = 12.76)

### **2. Context Analysis of the Curriculum**

#### **2.1. The Objectives of the Curriculum**

The Optometry curriculum has 9 objectives, which is to develop the graduates that can (1) diagnose and correct eyesight-related problems for general public, (2) give suggestion and consultant in term of Optometry, (3) study and perform research on Optometry-related knowledge, (4) participate with the public health sector to plan eyesight correction for general public in all aspects, (5) manage eyesight and vision related organizations and medical centers, (6) plan and give knowledge in term of Optometry, (7) correct personal eyesight-related problems, (8) develop professional expertise and (9) conduct research related to Optometry.

The result of the study indicated that the academic staff (lecturers), students and graduates considered all 9 objectives as relevant to the current needs of the society, the curriculum has unique identity and practical in the high to highest level (table 1). However, by evaluating each item individually, the 9<sup>th</sup> objective has the lowest score especially in term of practicality with the average score (S.D.) of 3.50 (0.71), 3.83 (0.93) and 3.68 (1.01) from lecturers, students and graduates respectively.

#### **2.2. The Structure of the Curriculum**

The optometry curriculum requires the students to take 44 units of general education courses, 188 units of major required courses (93 units of which are professional foundation courses and 95 units are professional courses) and 6 units of free elective courses, 238 units in total.

In term of number of units in the curriculum structure, the lecturers, students and graduates all agreed that the number of units were suitable both in each category and in total.

### 2.3. The Content of the Curriculum

In majored course category, there are 35 professional foundation courses and 27 professional courses. Overall, lecturers, students and graduates considered that the courses offered by the program were relevant to the curriculum's objectives, relevant to the current needs of the society, and was up to date at high and highest level (table 2). However, when consider the courses individually, the course OPT3901 (Public health policy and the optometric profession) had the lowest score with the score (S.D.) of 3.46 (0.98), 3.44 (0.99) and 3.48 (0.94) in term of relevance to the curriculum's objective, relevance to the current needs of the society, and currency respectively when evaluated by the students and 3.35 (0.75), 3.35 (0.75) and 3.52 (0.68) when evaluated by the graduates.

Table 1: The Analysis of Curriculum's Objectives

Evaluation Factors	Lecturers (N = 10)		Students (N = 95)		Graduates (N = 31)	
	Average	S.D.	Average	S.D.	Average	S.D.
1. Relevance to Current Needs of the Society	4.61	0.52	4.11	0.86	4.00	0.92
	Highest		High		High	
2. Has Unique Identity	4.44	0.60	4.14	0.84	4.05	0.96
	High		High		High	
3. Practicality	4.32	0.70	4.12	0.85	4.07	0.95
	High		High		High	

Table 2: The Analysis of Contents of the Curriculum

Evaluation Factors	Lecturers (N = 10)		Students (N = 95)		Graduates (N = 31)	
	Average	S.D.	Average	S.D.	Average	S.D.
1. Professional Foundation Courses (35 Courses)						
	4.66	0.52	4.05	0.81	3.90	0.75
1.1 Relevance to the Curriculum's Objectives	Highest		High		High	
	4.43	0.68	3.98	0.83	3.91	0.77
1.2 Relevance to Current Needs of the Society	High		High		High	
	4.32	0.79	3.97	0.82	3.95	0.75
1.3 Currency	High		High		High	
2. Professional Courses (27 Courses)						
	4.78	0.44	4.49	0.67	4.31	0.73
1.1 Relevance to the Curriculum's Objectives	Highest		High		High	
	4.60	0.55	4.36	0.78	4.35	0.68
1.2 Relevance to Current						

Needs of the Society	Highest		High		High	
1.3 Currency	4.46	0.68	4.38	0.76	4.31	0.71
	High		High		High	

### 3. The Result of Input Factor Analysis

#### 3.1. Numbers and Qualifications of Lecturers

The analysis of the suitability in term of numbers and properties of lecturers indicated that both students and graduates had high opinion on all aspects (table 3). When evaluated individually, the highest scored item evaluated by the students was morality and professional ethics of the lecturers with the average score (S.D.) of 4.21 (0.77) and the lowest scored item was the sufficiency number of lecturers with the average score (S.D.) of 3.62 (0.94). On the other hand, the highest scored item evaluated by the graduates was teaching professionalism and generosity with the average score (S.D.) of 4.65 (0.49) and the lowest scored item was the supportiveness in term of students' opinion and analytical skills with the average score (S.D.) of 4.06 (0.81).

#### 3.2. The Suitable Properties of the Students

The analysis of the suitable properties of the students suggested that the students and the graduates agreed with the properties of the new students described in the curriculum on all aspects (table 4). The students further commented that the program should conduct health diagnostic on new students in order to screen the candidates with eyesight problems such as nystagmus, which may complicate the use of some required instruments. The candidates should be more rigorously tested in order to identify talented students especially those with high scientific knowledge. Also, the entrance process should not allow the students with high GPA to skip the examination since the grading standards from various schools are not the same.

#### 3.3. The Sufficiency of Learning Resources

The analysis of the sufficiency of learning resources indicated that both students and graduates had high opinion on all aspects regarding the sufficiency of learning resources except the academic resources, which was rated medium (table 5). The students wanted to have an accessible library opened to the students. In term of learning materials and resources, both students and graduates suggested that some items, such as microphones and projectors were damaged, the classrooms were too small and not well arranged, the light were too dimmed, the Wi-Fi network were sometimes inaccessible and learning materials were in black and white and not clearly visible.

Table 3: The Analysis of Numbers and Qualifications of Lecturers

Evaluation Factors	Students (N = 95)		Graduates (N = 31)	
	Average	S.D.	Average	S.D.
1. Teaching Preparation	3.93	0.86	4.40	0.67
	High		High	
2. Knowledge, Skills and Teaching Techniques	4.06	0.81	4.34	0.71
	High		High	
3. Morality and Professional Ethics	4.13	0.73	4.44	0.56
	High		High	

Table 4: The Analysis of the Suitable Properties of the Students

Evaluation Factors	Students (N = 95)		Graduates (N = 31)	
	Average	S.D.	Average	S.D.
1. Qualifications of the New Students	4.29	0.77	4.27	0.77
	High		High	
2. Properties of the New Students	4.34	0.74	4.32	0.74
	High		High	

Table 5: The Analysis of the sufficiency of Learning Resources

Evaluation Factors	Students (N = 95)		Graduates (N = 31)	
	Average	S.D.	Average	S.D.
1. Text Books and Learning Materials	3.81	0.97	4.23	0.82
	High		High	
2. Audio Visual Materials	3.74	1.03	4.19	0.82
	High		High	
3. Academic Resources	3.44	1.23	4.13	0.98
	Medium		High	
4. Information and Public Relations	3.75	0.94	3.93	0.76
	High		High	
5. Buildings and Classrooms	3.65	0.96	4.10	0.78
	High		High	

#### 4. The Result of Process Analysis

The result of teaching process analysis indicated that the students and the graduates had high opinions on the teaching process on all factors (Table 6). By analyzing the detail of each factor evaluated by the students, the highest scored factor was the suitability of the teaching process with the average score (S.D.) of 3.94 (0.77) and the lowest scored factor was the learning promotion activities outside the classroom with the average score (S.D.) of 3.50 (0.81). On the other hand, the highest scored factor evaluated by graduates was the learning activities that stimulate the opinion and knowledge exchange with the average score (S.D.) of 4.23 (0.67) and the lowest scored factor was the ethics promotion activities with the score (S.D.) of 3.74 (0.82).

Additionally, some students and graduates voiced their opinions that the program should increase the regulations regarding the final examination process especially in term of electronic equipment screening prior to entering the examination room to prevent cheating.

## 5. The Result of Curriculum Output Analysis

Overall, the result of curriculum output analysis indicated that the graduates evaluated themselves as high in all factors with the highest score in the area of mathematical analytical thinking, communication and IT skills and the lowest score in knowledge development. In contrast, although the graduates' employers also evaluated the graduates as high as well, the employers considered that the highest score was in the area of intellectual development while the interpersonal relationship and responsibility had the lowest score. The stakeholders, such as the companies that have never recruited the graduates from this curriculum, stated that the expectation in all areas were at the highest level and suggested that the intellectual development was more important than knowledge development. (Table 7)

Table 6: The Result of Process Analysis

Evaluation Factors	Students (N = 95)		Graduates (N = 31)	
	Average	S.D.	Average	S.D.
1. Learning Activities	3.70	0.81	3.97	0.81
	High		High	
2. Assessment and Evaluation	3.71	0.84	3.89	0.84
	High		High	

Table 7: The Result of Curriculum Output Analysis

Evaluation Factors	Graduates (N = 31)		Graduates' Employers (N = 24)		Stakeholders (N = 5)	
	Average	S.D.	Average	S.D.	Average	S.D.
1. Morality and Ethics	3.94	0.73	4.28	0.58	4.75	0.39
	High		High		Highest	
2. Knowledge Development	3.90	0.80	4.29	0.53	4.56	0.47
	High		High		Highest	
3. Intellectual Development	3.94	0.81	4.29	0.62	4.95	0.11
	High		High		Highest	
4. Interpersonal Relationship and Responsibility	4.09	0.81	4.21	0.62	4.73	0.48
	High		High		Highest	
5. Mathematical Analytical Thinking, Communication Skills, and Information Technology Skills	4.11	0.85	4.25	0.70	4.67	0.51
	High		High		Highest	

When evaluated individually, the graduates evaluated themselves as highest in the area of mathematical analytical thinking, communication and IT skills with the average score (S.D.) of 4.11 (0.85) and the lowest score in term of the planning and selecting methods to resolve customers' issues where the average score (S.D.) of 3.84 (0.86). On the other hand, the graduates' employers evaluated that the graduates had highest skills in term of client handling with the average score (S.D.) of 4.21 (0.62) and has the lowest score in the area of Thai and English communication skills with the average score (S.D.) of 3.83 (0.64). Furthermore, the stakeholders indicated that the ideal graduates should has highest skill in term of planning and selecting methods to help resolve the customers' issues with the average score (S.D.) of 5.00 (0.00) while considered Thai, English communication and IT as the least required skills with the average score (S.D.) of 4.60 (0.55).

### **Discussion and Conclusion**

The result from the research, The Curriculum Evaluation on Doctor of Optometry Program, Ramkhamhaeng University, can be discussed as follows:

1. The objectives of the curriculum are the expectations of the curriculum regarding the properties of its graduates (Sornwut, 2004). The result indicated that the lecturers, the students and the graduates considered that the curriculum objectives were relevant to the current society's needs, had unique identities, and can be applied in real life at high to highest level. The result was also corresponded with a research by the institute of health science, Ramkhamhaeng University (McQuaid & Barney, 2012) regarding the inadequate number of Optometrist in Thailand.
2. For the curriculum structure, the result indicated that the numbers of units, both in total and in each category, were advisable. The curriculum structure was suitable to be used as a guideline in education planning that will lead the students to reach the curriculum objectives as described in the curriculum standard, which suggested that the total number of units must be at least 180 where 30 units or more belong to general education courses and 144 units or more for majored course (Bureau of Sanatorium and Art of Healing, 2012).
3. In term of readiness and suitability of the lecturers, the result suggested that the lecturers were appropriate both in term of the number and qualification at high level. The students had high opinion on the morality and ethics of the lecturers and considered them as a role model. However, the lowest score in this category was the adequate number of lecturers comparing to the number of students which may cause by the inadequate number of Optometrist at the national level (McQuaid & Barney, 2012) and some lecturers were on study leaves.
4. For the readiness and suitability of the students, the result suggested that the primary factor to support their decision to select this curriculum was because the students wanted to work in this area and because it was suggested by their parents. Thus represented that the needs for this curriculum were still in high demand. The properties of the new students, which required the students to graduate from high

school with the branch of science-math, were highly appropriate because Optometry requires the use of scientific reasoning and principals. However, the screening process including entrance examination and health screening should be thoroughly enforced.

5. For the factors supporting learning activities, the result indicated that the satisfactory were at high level in all aspects except the learning resources which was rated at medium by the students. The students mentioned regarding the operation of the library, the services over the Internet, and damaged or inadequate clinical instruments. The program should correct these issues by increasing the number or improving the condition of learning articles, classrooms and buildings. The program should also develop the public consciousness of the students in order to keep the public resources clean and in good conditions.

6. The readiness and the appropriateness of the learning activities were rated as high. However, there were suggestions that the regulations should be more thoroughly enforced, especially the regulations regarding the examination and the examination scheduling. These suggestions were also corresponded to the research by the faculty of Engineering, Ramkhamhaeng University (Santisirisomboon, 2016).

7. For the properties of the graduates, the study suggested that the graduates' employers were satisfied with the knowledge and skills of the graduates at the highest level, which confirmed academic strength and the public stance of the curriculum. And the least satisfied aspect was the interpersonal relationship and responsibility of the graduates especially regarding Thai and English communication skills, which the curriculum should focus on during the next curriculum revision.

### **Suggestion**

The management in various levels should specify the fund allocation policy in order to purchase and maintain learning articles in good working orders and have sufficient number for the students. Furthermore, the condition of the classrooms should be improved to cope with increasing number of the students due to market demand. The manpower and study-leave planning for the lecturers should be considered to cover the whole duration of program in order to have a sufficient number of qualified lecturers for the students. The students should be able to use the faculty's library and the learning resources such as books, journals, and the Internet should be maintained in good condition and in a timely and sufficient manner. The number of computers should be increased to cover the number of students and lecturers. Dedicated personals should be arranged to maintain and support the use of computer laboratories, learning and audio-visual articles and should be able to solve the problems with the instruments that may arise during class sessions.

Regarding the next curriculum revision, the responsible parties should modify the content of the courses in the curriculum based on each course's evaluation result. The changes to each course should focus on developing the identity of the graduates along with English language ability in accordance to the English proficiency policy in the higher education institutes of the Office of the Higher Education (2016). Prior to the

use of the revised curriculum, the revisers should arrange the meeting to clarify the objectives, structure, learning activities guidelines and the assessment and evaluation process to the lecturers.

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