

The Asian Conference on Education

ACE2018

Official Conference Proceedings

SURVIVING & THRIVING Education in Times of Change

Toshi Center Hotel, Tokyo, Japan | October 13–15, 2018

Published by The International Academic Forum (IAFOR) in association
with the IAFOR Research Centre at Osaka University

ISSN: 2186-5892

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The Asian Conference on Education 2018

Official Conference Proceedings

ISSN: 2186-5892



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The International Academic Forum (IAFOR)
Sakae 1-16-26-201
Naka Ward, Nagoya, Aichi
Japan 460-0008
www.iafor.org

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*The Economics And Politics Of The Shift From K To 10 To K To 12:
The Philippine Experience*

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

After several years of hesitation the Philippine government finally adopted a 12-year basic education program in 2013 with the signing of Republic Act No. 10533 known as the K to 12 law. The law was in response to the perception of substandard quality in Philippine education which resulted in Philippine graduates being discriminated in the global workplace. The law was implemented in academic year 2014-2015. Before the passage of the law Philippine basic education was only up to ten years. With the implementation of the law two more years were added thus making basic education from Kindergarten to the end of secondary education to 12 years. Despite the political unpopularity of the K to 12 law it had to be passed to keep the Philippines at par with the rest of the world in terms of education. With the country dependent on incomes sent by overseas Filipino workers and rising standards in the Philippines, the K to 12 law had to be passed. This paper examines the logistics needed to implement the K to 12 law and the creation of a new pedagogy towards creating a 21st century-ready graduate. The paper also examines the human cost in terms of teacher dislocation and unemployment and what the Philippine government has done to address this problem.

Keywords: K to 12, K to 12, economics, politics, problems, solutions

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Introduction

The Philippines is one of the world's major labor-exporting countries. Beginning in the early 1970s the country began sending workers overseas on a massive level. Traditionally the destination of foreign-bound workers would be the United States and Europe. However with the construction boom in the Middle East in the 1970s the region became the favored destination of many Filipino overseas workers. Of great demand by employers were skilled workers doing professional and technical jobs such as those in the health sector such as physicians, nurses and medical technicians; in the construction sector such as engineers, architects, welders, draftsmen and electricians. Teachers and seamen also form part of the skilled manpower force. Even for jobs like domestic helpers employers prefer those that had some level of education. (Pe, et. Al, 1)

The Philippines on its own cannot readily absorb the number of workers it produces. At least a million new graduates from the country's universities and colleges join the work force. The alternative was to facilitate the deployment of Filipino workers abroad. Fortunately there is a demand for workers overseas especially skilled workers. The ability of the Filipinos to speak English which is the language preferred by many foreign employers and the reputation of the Filipinos as good workers abroad gave them an added edge over other foreign workers. There are about 10.2 million overseas Filipinos and about 52% of them are overseas workers. Their remittances to the Philippines amounted to billions of dollars. In 2017 the amount reached \$26.92 billion. (Gmanetwork.com)

The effect of the billions of dollars of remittances from the earnings of overseas Filipino workers can be seen in the countryside. Their homes are now improved from the traditional wood and palm leaf structures they can now afford to build concrete and stone houses. The families of overseas Filipino workers or OFWs as they are now called, can now own appliances like the latest televisions, refrigerators and gadgets which were only dreamed a few decades ago. OFWs also send their family members to study in colleges and universities whereas before only a few select family members can do so if they were fortunate enough. OFW families were also able to start their own businesses. (Felongco)

The great value of the OFWs was demonstrated when the Philippines weathered the Asian financial crisis of 1997-1998 which caused the near-collapse of the economies of countries in Southeast Asia. It is for these reasons the Philippine government called the Overseas Filipino Workers as the Bagong Bayani or the new heroes of the Philippines. (Dumlao, 16)

The Need for Educational Reform

However a serious challenge faced Filipino workers. Since the recognition of Philippine independence by the United States in 1946, education for most Philippine graduates lasted for only 10 years from Grade 1 to Fourth high school. These consist of ten years basic education from Grade 1 to Grade 6 which is the elementary level in

the Philippines while high school or secondary education lasts for four years. College education on the other hand lasts for four years, thus giving a total of 14 years. With the addition of kindergarten that would make a total of eleven years. Philippine basic education therefore was called K 10 or kindergarten plus 10 years of elementary and high school education.

On the other hand most countries of the world had more years in their basic education. Most western countries have adopted a K to 12 or a twelve year basic education curriculum plus kindergarten. Lacking two years in the education of its graduates, Philippine graduates were considered as substandard in terms of academic experience. They were subjected to discrimination by employers and there were threats to remove them from their jobs because their education was considered substandard. For example an engineer trained in the Philippines cannot be accepted as an engineer in the Middle East because of a two-year deficiency in his education. Such an engineer can only be accepted for an inferior job such as technician. Likewise Filipino architects can be only accepted as draftsmen. They will be able to qualify for the work they agreed to take further studies. Countries which used to hire Filipino workers began to warn the Philippine government that unless reforms were undertaken they will be forced to lay off their workers.

Not only overseas Filipino workers were affected by the lack of two years of education. Even students applying for higher education in other countries such as Canada, and in European countries were affected. For example a student trying to enter a master's program in Canada cannot be accepted in a Canadian university because his high school transcript shows a deficiency of two years. In the basic education, a graduate of a master's program in the Philippines cannot enter the doctoral or Ph.D. program because he is just considered a college graduate. (Abueva, 1)

Reforms in Philippine education were therefore considered as necessary and urgent. To refuse to do so will isolate the Philippines from the rest of the world. Before the adoption of K to 12, only the Philippines and Botswana were still having the K to 10 program. For a country that relies on the income of its overseas labor keeping the educational standards at par with the rest of the world became imperative.

But to implement K to 12 would be a politically unpopular act. Previous administrations already considered implementing a 12-year plus kindergarten program however it was resisted by various groups. Among them were parents, college teachers and professors, student and militant groups. For parents K to 12 is a financial added burden. It means shelling out at least P65,000 for tuition fee per year. Not included are funds for allowance, uniforms, books, school supplies, transportation and meals. To maintain a student in a private school would cost at least triple the amount of tuition fees. Multiply the total costs by two years and education could cause a mind-boggling amount of at least P300,000.

College teachers and professors for their part fear, dislocation in their jobs during the adjustment period to K to 12. There would be no freshman college students when the

country starts to offer Grade 11 or the additional year after secondary school. There would be no second year or sophomore students when Grade 12 or the second additional year is offered. This dislocation will affect the third and fourth year of college where there would be no enrolment for those levels.

For the students it would mean being delayed for graduation by two years. They would not be able to help their parents or their families if they stayed in school for those two years. Militant groups such as the Bagong Alyansang Makabayan (New Nationalist Alliance or NPA) criticized the government for bowing to international pressure. It called instead, on the government to increase job opportunities for graduates.

Another reason by the opponents was the doubt that the government may not have the funds to implement the program. It would mean hiring new teachers, provision of new school buildings and classrooms. The needed amount for the implementation of K to 12 will run into billions of pesos.

The Passage of the K to 12 Law

To ensure compliance into the adoption of educational reforms it was best that such reforms must be backed by the force of law. Since 2003 the Philippine Congress conducted hearings on educational reforms. There was stiff opposition from many lawmakers who saw extending basic education as unpopular with voters. Yet the feedback they received from resource persons was grim- Philippine graduates would be shunned as substandard and with the Philippines heavily dependent on its labor exports. After several years of consultations Congress passed a bill that that became Republic Act No. 10533. It was presented to President Benigno S. Aquino, III for his signature on May 15, 2013.



President Benigno Aquino (center) with Speaker Feliciano Belmonte and Senate President Edgardo Angara with students at the signing ceremony of the Enhanced Basic Education Act of 2013 held on May 15, 2013.

The law which is called the Enhanced Basic Education Act of 2013 but popularly known as the K to 12 law extended basic education in the Philippines from 10 to 12 years. With the inclusion of kindergarten, basic education in the Philippines is now 13 years thus the terms K + 12 or K plus 12 or simply K to 12. The law created the senior high school. This was where the additional two years were added. The senior high school is different from the junior high school. The former will mark the transition from basic education to college or vocational courses.

It was the decision then of the lawmakers to add the two years to basic education instead of adding two additional years in college so that more students will be included. It was based on the findings of the Education Committee that about 60% of high school graduates would elect to enter college. Thus the two additional years were added to the old high school which was renamed junior high school. It was envisioned that the graduate of the senior high school will be employable after finishing the two year curriculum.



Image showing students being led to better education under K to 12 (DepEd website)

The Department of Education (DepEd) was mandated to supervise K to 12. Even before the passage of the K to 12 law, the DepEd has been revising the curriculum. The high school levels were not anymore called first year, second year, third year and fourth year but are continuation of the elementary grades such as Grade 7 which is the former first year, Grade 8, second year, Grade 9, third year and Grade 10, fourth year. The grades under the senior high school would be called Grade 11 and Grade 12. K to 12 did not only add two years to Philippine basic education but it is actually a complete overhaul of the system. The courses have been revised and the pedagogy has been changed. Instead of the traditional lecture method, the DepEd adopted the Outcomes-Based Education (OBE) Approach in teaching the course.

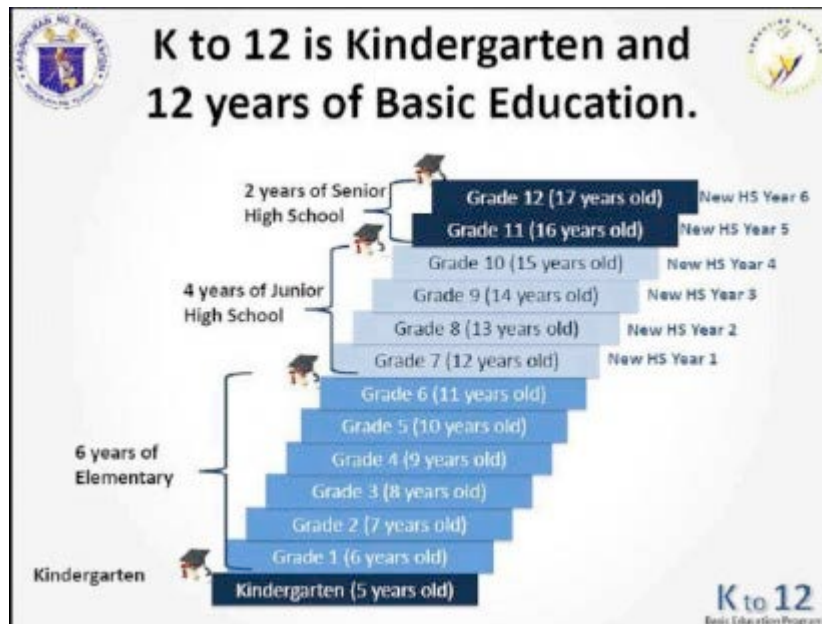


Diagram of the new K to 12 Program provided by the Department of Education

Through the outcomes based approach, the students are required to come out with concrete evidences of their learning. These include the writing of papers of their own authorships, concepts and audio-visual materials and intellectual works that are solely by the students. The courses in the basic education were also changed and it placed emphasis on research and individual thinking and analysis rather than memorization of lessons. The curriculum from Grade 1 to Grade 12 was revised and it added more subjects that were formerly taught in college such as calculus, taxation, Philippine government, methods of research.

K to 12 actually began not in 2013 but ten years before in 2003 when the first batch of students entered Grade 1. Teachers were given training and seminars to prepare themselves to the new program. By 2013 the year marked the full implementation of K to 12 with the rollout of Grade 11 nationwide.

According to Nelson Cainghog , a political analyst from the University of the Philippines (UP) Diliman, said the K to 12 – one of the "game changer" reforms in basic education – not only brings the Philippines at par with most countries in the world, but also prepares students for their preferred careers. (Geronimo)

There are eight strands in the Philippine senior high school system: the first is the Academic strand which is intended for students intending to enter college. The academic strand has the following tracks (Department of Education, 1)



Senior high school curriculum showing the various strands or specializations

Academic Strand

- a. General Academic Strand (GAS) – This track is intended for students who are still undecided which specialization to take. They may choose may choose elective courses from the different academic strands such as the humanities, social sciences, applied economics, organization and management and disaster preparedness.
- b. The Humanities and Social Sciences (HUMSS) - The HUMSS is designed for those interested to take up journalism, communication arts, liberal arts, education, and other social science-related courses in college. If a student takes this strand he could train in college to be a teacher, a psychologist, a lawyer, a writer, a social worker, a reporter, even a priest or nun someday.
- c. The Science, Technology Engineering and Mathematics (STEM) strand – This track is geared towards the sciences. Under this track the student may look forward to becoming a pilot, an architect, an astrophysicist, a biologist, a chemist, an engineer, a dentist, a nutritionist, a nurse, a doctor, marine engineer and a lot more.
- d. The Accountancy, Business and Management (ABM) track – This track focuses on the basic concepts of financial management, business management, corporate operations, and all things that are accounted for. An ABM graduate can study to enter college and eventually becoming managers, human resources, marketing director, project officer, bookkeeper, accounting clerk, internal auditor, and a lot more.

Technology, Vocational and Livelihood (TVL) Strand

The Technology, Vocational and Livelihood (TVL) strand This strand is geared towards technology and the vocational arts.

- a. Livelihood strand - Under this track are agri-fishery, Home Economics. industry. TVL involves the technical vocational curriculum and graduates may move on to become industrial and mechanical engineers or installers and construction workers.
- b. The Information and Communication Technology (ICT) strand. – This track under the TVL strand is intended for students who are computer savvy. The student can learn writing computer programs, illustrating, and designing websites.
- c. Visual and Media Arts The last track under the TVL strand is the Visual and Media Arts. If the student has an inclination to animation and design, he can be prepared to enter a career in of multimedia production, advertising, corporate communications, graphic designing, filmmaking, photography, and desktop publishing.

The Sports Strand

There is also the Sports track which aims to give an understanding of the basic principles with regards to physical education and recreation. Graduates of this course may become fitness trainers, game officials, tournament manager, recreation attendant, masseur, or gym instructor. Part of the curriculum includes track safety and first aid. Another area for this strand is physical therapy. The student will have the chance to help people recover from their injuries and sicknesses.

Arts and Design Strand

Arts and Design Track - Under this strand are tracks that prepare the student for a life of design, performance and creative arts. It exposes the student to various types of media architecture, interior design, industrial design, graphic design, animation, painting, fashion design, photography, and film. Included under the arts and design track are the Performative Arts. The student may learn to become a singer, song writer, or scriptwriter. He can also make his own studio for making furniture, jewelry, costumes, and set design.

Preparing for K to 12: Logistics



Logo of the Commission on Higher Education.

The Department of Education (DepED) anticipated that its present facilities will not be able to accommodate the estimated 1.5 million students who will graduate from fourth year high school in 2013. In 2012 it proposed its biggest budget in its history. For its 2013 budget it allotted P118.8 billion or \$2.4 billion to be used for the construction of new classrooms, the repair of existing ones and acquiring basic educational needs. Included here are 47,492 classrooms and 66,492 sets of school seats for the K-12 program. The DepEd will also purchase 55 million textbooks and instructional materials as well as equipment for science and mathematics for 5,449 schools. (Ibid, 1)

The DepEd also initiated partnerships with private institutions to deliver basic education. This means government will now subsidize private education. Students that cannot be accommodated in public schools will be accommodated in private schools. Under the Government Assistance to Students and Teachers in Private Education (GASTPE) will receive P35.8 billion or (\$722.95 million as assistance grants to over 2.6 million beneficiaries. (Ibid, 2)

Opposition to K to 12



Opposition Senator Senator Antonio Trillanes: Government has no resources for K to 12.

There was serious opposition to K to 12. The oppositors called K to 12 *pahirap* (burden). They filed at least 6 petitions questioning its constitutionality and seeking its suspension. The issue reached the Supreme Court where it was left pending as of this writing.¹ Critics say that the program did not undergo an experimental or pilot stage. This was because there was simply no time for pilot testing as the fate of the country's graduates wishing to be deployed for overseas employment was at stake.

The oppositors also noted that the DepEd does not have the facilities to accommodate the number of students entering the Senior High School. Though the DepEd already made preparations to give vouchers to private schools so they can accommodate students who could not be handled in the private schools, the oppositors especially those aligned with leftist groups branded the voucher program as privatization of education. (Geronimo, No Senior Student Left Behind)

¹ On November 12, 2018, the Philippine Supreme Court ruled with finality on the constitutionality of K to 12 and It also ruled that Filipino courses need not be repeated in college.



High school students protesting the adoption of K to 12 program: Their relatives call it another burden on the Filipinos.

There was also an observable increase in dropout rates compared to the students under K to 10. Two years into the program opposition Senator Antonio Trillanes IV warned that dropout rates will soar because of the additional expenses that come with two more years of high school. Estimates from opponents say that K to 12 added P20,000 for two years but the left-leaning Kabataan party placed the expenses could go over P100,000. (Geronimo, *ibid.*)



Graduates of the University of the Philippines protesting educational reforms among other issues.

Another characteristic of K to 12 is that it seeks to tap the tech-savvy of today's youth. It was assumed that K to 12 graduates in the Philippines are knowledgeable with computers and information technology. There are courses that require students to do their lessons online. Some parents began to complain as their children were required to purchase their own laptops or read their lessons through e-books which

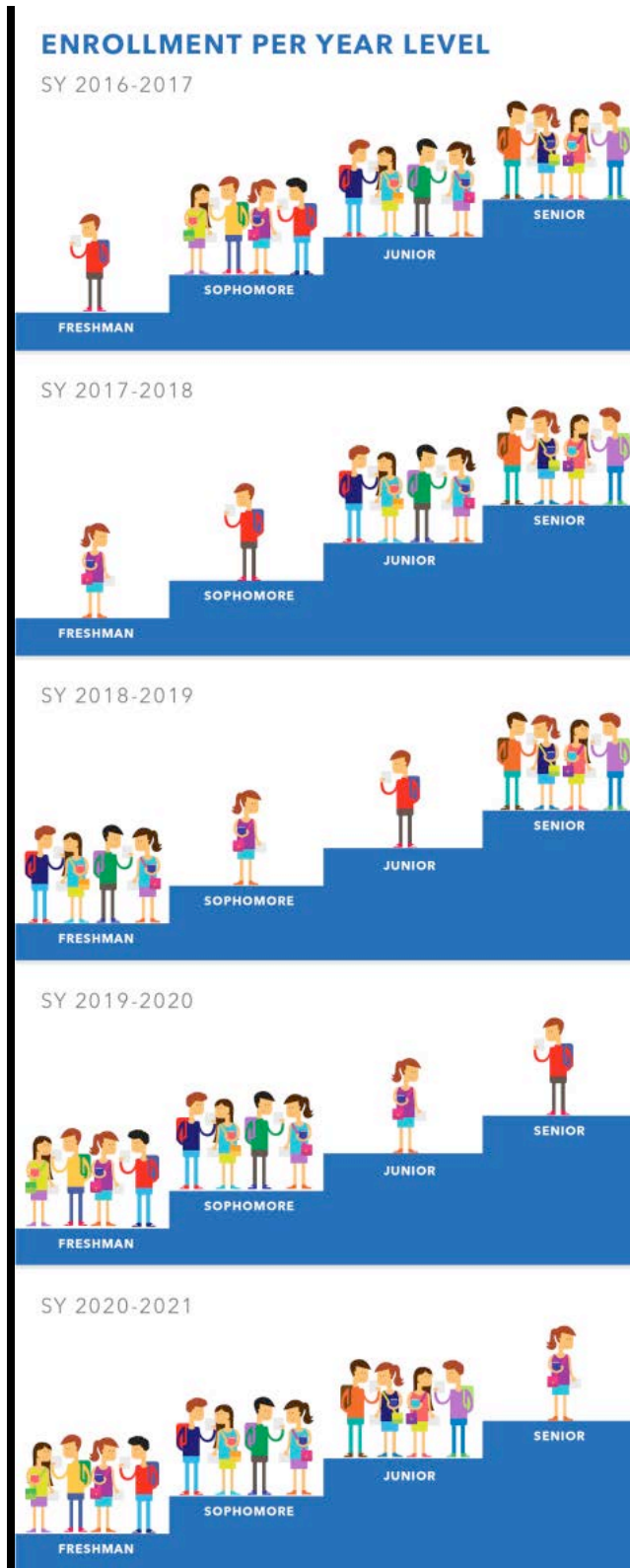
had to be bought. The costs are simply beyond the means of the ordinary Filipino student.



Students crossing a river on a makeshift raft to go to school (Rappler photograph)

The Role of the Commission on Higher Education

The other government agency in charge of implementing the K to 12 reforms was the Commission on Higher Education which had jurisdiction over post-secondary education. Aware about the impact of



A graphic projection by the Commission on Higher Education on the enrolment in college during K to 12 transition. (Commission on Higher Education website) <https://ched.gov.ph/k-12-project-management-unit/> [accessed September 20, 2018]

K to 12 to college professors and instructors, the Commission launched various programs to assist affected educators. These are: (Commission on Higher Education, 8-26)

a. Offering of scholarships - Displaced college faculty are encouraged to avail of scholarships in which they can study for their masters and Ph.D. in any university. Government subsidy includes the payment of payment of tuition fees, book allowance, (subject to availability) insurance. A total of P700 million pesos was allotted for scholarships. With the expected applications for scholarships there is a cap of P25,000 tuition fee per successful applicant .

b. Thesis and dissertation or capstone project – College instructors and professors who are about to write their theses and dissertation may avail of this government grant. The research must be finished within one year of the grant.

c. Graduate studies abroad – Displaced faculty members may do their graduate studies abroad in cooperation of international partner institutions. Government support is usually partial assistance.

d. Stand up grants – In cooperation with partners in the academe and industry the college professors may avail of grants involving research and development of educational materials.

There could be research grants from food production and security, environmental climate change and disaster risk reduction.

e. Creative arts grants - These will be in partnership with the National Commission for Culture and the Arts in which they may do research on culture and heritage.

f. Immersion – The displaced college professors may implement research through immersion in the communities as part of a commissioned grant or as an extension activity.

g. Post doctoral study grants - these will be given to holders of doctoral degrees who may do their postdoctoral work overseas or locally in partnership with other agencies.

h. Senior High School – College professors may opt to teach at the senior high school and the high school will waive its requirement for the teacher to have licensure status for the first five years teaching. .

i. Teaching materials development – the displaced faculty in cooperation with the Department of Education or the Commission on Higher Education may do activities to make instructional teaching materials.

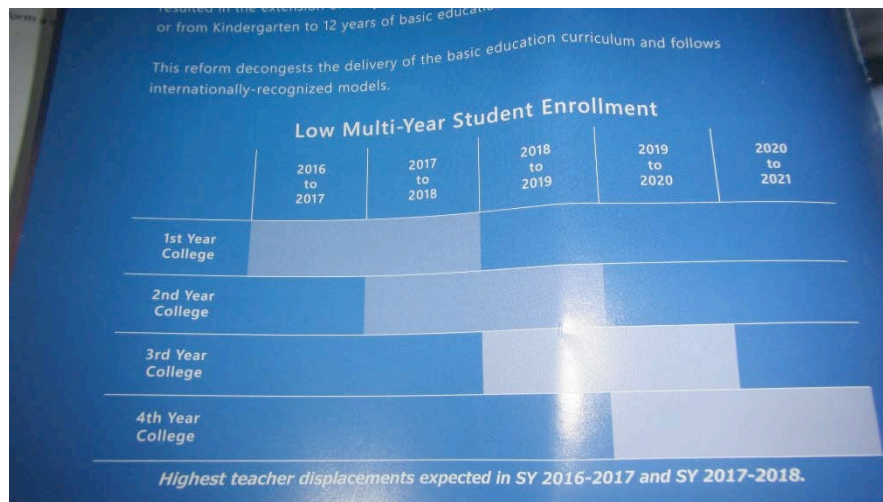
j. Possible financial support – It was contemplated that displaced colleges teachers may avail of P25,000 monthly for the duration of his displacement but this was not followed.

As for funding to assist the affected college professors and instructors, the bulk of the budget of the Commission on Higher Education was intended to assist these personnel. In its budget proposal for 2016, it requested P10.54 billion or \$225.63 million a huge jump from 3.4 billion or 72.85 million budget in 2015.

Out of the P10 billion plus budget, P8.28 billion or \$177.42 million will be allocated for the transition program for affected personnel under the K to 12 transition program. These are: (Commission on Higher Education)

Scholarships	3,286,293	5,909 Masters and PhD scholarships
Senior high school training	245,400	1,227 teaching staff
Faculty development grants	3,516,308	9,365 faculty
Staff development grants	727,020	4,241 staff
Innovation grants for higher education institutions	500,000	100 institutions
Source: Commission on Higher Education, K to 12 Transition unit.		

According to CHED findings a total of 13,634 teaching staff and 11,456 non-teaching personnel will be displaced. Already college professors feared massive retrenchments due to K to 12. These personnel will have no teaching load at certain times during the implementation of K to 12 in college form 2013 to 2021. As a result many colleges and universities offered early retirement schemes for their affected personnel. Higher education institutions expect a drop in their freshman enrolment because of the full implementation of senior high school under K to 12.



Projection by the Commission on Higher Education on the abnormal enrolment from 2013 to 2021. (Commission on Higher Education)

Shortcomings of the K to 12

Since the Senior High School under the K to 12 program is quite new, there were birth pains on its introduction. Many schools were just feeling their way on how to offer the additional two years of basic education. Shortages of classrooms and school materials like textbooks were common. These were also the same problems felt in the Junior High School and the elementary grades. There is also the digital divide among rich and poor students. The rich students can easily acquire the needed software and hardware for their classes involving information technology but not the poor students who had to make do with what they have.

Though Senior High School graduates were said to be employable because they already had the skills needed for jobs, they were not well regarded as the college graduates. They were also subject to exploitation by employers.

The role of the Commission on Higher Education was to cushion the impact of K to 12. Its programs were not totally successful in their implementation. The main problem was the funds were not enough to accommodate all the affected college academic personnel. Scholarship support was limited to P25,000 or \$US500 a semester. The amount maybe good for enrolling in a provincial college but it not enough for a college or university in cities like Manila or Cebu. Adding to the problem were the bureaucratic problems which cause the slow release of scholarship funds. Many scholars could not continue their studies because the funds were not released by the Commission.

There were few takers for foreign scholarships because the counterpart of the Philippine government was not enough. There was senior high school training and training for the new courses under the K to 12 program. But these were stopped after the second batch of trainees were trained as the funds intended for K to 12 support were diverted to the free college program of the government.

In the present school year, the K to 12 had its first graduates. As expected many wished to enter college. It was expected that the graduates of the said strands will continue on to the college or school of their specialization. However the Department of Education decided that Senior High School graduate of any strand and track may enter any college of his choice. This directive defeats the purpose of having the strands in the Senior High School. The student should have been required to undergo a bridging course if his training was not related to the university he would like to enter. However this requirement was made optional and bridging courses were implemented only upon the discretion of the administration of the university or college.



It was envisioned that K to 12 will tap the computer-saviness of today's students

Conclusions

The adoption of the K to 12 program is the response of the Philippine government to be at par with global standards. Since it is dependent on remittances of overseas Filipino workers, such workers should be at par with the rising standards otherwise they would be left behind. They would either be treated as underemployed or as unskilled workers

It took a long time for the Philippine government to implement K to 12 because it was politically unpopular. It was considered an added burden for parents, students, and a threat to the jobs of affected teachers and other school personnel.

The alternative of not reforming the Philippine basic educational system is to endanger the status of the Philippines as a labor-exporting country. The Philippines

will also be left behind academically. It would mean isolation of the Philippines in the field of international labor and in education. Where other administrations hesitated in implementing K to 12, credit belongs to the Aquino administration which showed ample political will.

On the other hand the adoption of K to 12 was an opportunity to overhaul and reform the basic education system of the Philippines. It gave an opportunity to start a student-centered and outcomes based education. Since the program adds two more years to the curriculum, the graduates of 12 year basic education will certainly be more mature and more capable in meeting the challenges of the 21st century world. It also harnesses the technology of the times which enables the students and faculty to use the latest information and communication technology.

The Philippine government took steps to help the affected sectors. Budgets of both the Department of Education which handles basic education and the Commission on Higher Education which was in charge of college were increased to historic levels. These increases were meant to implement K TO 12 and to provide safety nets for those who are adversely affected. However these measures were hampered by inadequate funds, slow bureaucracy and the demand to give free college education which sapped the money intended for K to 12. Further training and scholarships are now left to the individual schools, colleges and universities. Finally, there were no clear cut policies on where the graduates of students should continue their education. The order to allow senior high school graduates to enroll in any course destroyed the purpose of the education strands and tracks.

As the first graduates of K to 12 now enter college, we can now observe a different kind of student. One who is more mature, more serious in his or her education and more experienced in the rigors of school work.

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Internationalization & the Impact of International Students in the Japanese Classroom

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

One of the immediate measures adopted by the Japanese government in response to the needs of internationalization was to increase the number of incoming foreign students to Japan (Ikeguchi, 2016). As a result, the number of foreign students as of May 1, 2017 was reported at 267,042, according to the Annual Survey of International Students in Japan conducted by JASSO. This showed an increase of (11.6%) 27,755 students more compared to that of the previous year. Research on the internationalization of Japanese higher education (Lie, 2001; Yoshizawa, 2009) has reminded us that the presence of international students alone does not mean that the institution or students are reaping the benefits of internationalization. This study assumes that the presence of non-Japanese learners have far-reaching benefits (as well as issues) that both teachers and administration have usually overlooked. The purpose of this paper is to discuss intercultural learning as a consequence of internationalization of higher education in Japan. It shows how the presence of foreign students can be utilized to promote intercultural learning in the classroom. At the same time, it discusses three fundamental considerations and related concepts such as peer learning, cooperative learning and active learning.

Keywords: internationalization, active learning, cooperative learning

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Introduction

One of the immediate measures adopted by the Japanese government in response to the needs of internationalization was to increase the number of incoming foreign students to Japan (Ikeguchi, 2016). As a result, the number of international students as of May 1, 2017 was reported at 267,042, according to the Annual Survey of International Students in Japan conducted by JASSO. This showed an increase of (11.6%) 27,755 students more compared to that of the previous year. As to classification, a total of 188,384 students (an increase of 17,262 %) were in higher institutions, out of 78,658 students (an increase of 10,493 persons(15.4%) who were in Japanese language institutes.

Research on the internationalization of Japanese higher education (Lie, 2001; Yoshizawa, 2009) has reminded us that the presence of international students alone does not mean that the institution or the students are reaping the benefits of internationalization. Since the number of foreign students is readily measurable, many have focused on increasing the number of foreign students and overlooked other less quantifiable aspects, such as intercultural interaction, which is beneficial for both domestic (Japanese) students and the foreign students. This paper discusses the impact of foreign students in the context of Japanese internationalization. Specifically, it will demonstrate a teaching method that is based on the fundamental issues of active and cooperative learning. Assuming that the classroom is a microcosm of the larger social context, lessons of this design are meant to train students to deal with situations of intercultural differences meaningfully and effectively.

Japanese Internationalization and Foreign Students in Japan

What does it really mean to have foreign students attending your class? This study assumes that the presence of non-Japanese learners have far-reaching benefits (as well as issues) that both teachers and administration have usually overlooked. The purpose of this paper is to discuss intercultural learning as a consequence of internationalization of higher education in Japan. Specifically, it presents a sample lesson that demonstrates how the presence of foreign students can be utilized to promote intercultural learning in the classroom. At the same time, this study discusses three fundamental considerations and related concepts such as peer learning, cooperative learning and active learning.

The presence of international students alone, even in large numbers, is insufficient in itself to promote intercultural interaction, develop intercultural friendships and to result in international understanding. Situations must be structured to foster these processes. It behooves the schools, and the classroom teacher to increase and enhance intercultural interaction. Coleen Ward (2006) extensively describes the impact of foreign students have on three levels: interpersonal level, institutional, and to society at large. This study focuses on the impact of foreign students in the classroom. What does it really mean to have foreign students attending classes with domestic, Japanese students? The presence of non-Japanese learners have far-reaching benefits (as well as issues) that both teachers and administration have usually overlooked.

When we say foreign students in the classroom, we often think, first of all, about foreign language use in the classroom. This paper, however will explore specific ways

in which the principle of peer-learning and teaching in a culturally mixed class can make both teaching and learning more meaningful.

As a consequence of rapid internationalization in education, intercultural learning has become a vital 21st century learning tool for school communities. Schools, parents and teachers face such situations more and more frequently and they must be ready to provide answers and take actions to address several challenging issues. It behooves the schools, and the classroom teacher to increase and enhance intercultural interaction. Schools have a key role in developing intercultural and global competences of both the domestic as well as foreign students. These competencies are “the targeted knowledge, skills and attitudes that lead to visible behavior and communication that are both effective and appropriate in intercultural interactions (Dearoff, 2006).

Some related concepts

The idea of domestic (Japanese) and foreign students learning together calls for some theoretical consideration to maximize its results. The following section describes this briefly.

1. The concept of intercultural learning

Intercultural learning establishes, first of all, a more creative and healthy learning environment where students learn to accept and respect differences. They work with and support classmates who are different. In these classes, students learn and come to know more about themselves and their culture as a first step to comprehend cultural complexity. Thus, intercultural learning allows students first of all, to develop their own global competencies by first understanding their culture and themselves as a product of that culture. Beyond knowledge competencies, intercultural learning helps foster skills necessary outside of the classroom. These skills first and foremost include empathy and flexibility. Empathy allows students to understand others and see the world from their perspective, as well as to be sensitive to their needs. Flexibility, in thinking and feeling trains them to behave in changing environments and adapt using appropriate behavior.

Broadly, the challenge has become increasingly urgent for schools to adapt curriculums that are more globally-minded to adequately help students develop a global worldview and master intercultural skills. Several strategies have been proposed to cope with the demands of increased intercultural learning but three strategies have been used, evaluated and proven to foster specific positive intercultural perceptions and relations on the personal level. These include ① peer-pairing, ② cooperative learning and ③ residential programs. The focus of this paper relates to the first and second issues.

The intercultural classroom can be a rich source of learning when students are highly engaged in the own learning. The sample lesson provided, here based on the three principles peer learning, peer learning and teaching, and cooperative learning, produce enthusiastic, intense involvement among students. A sample lesson like this provides structures, which unlike activities, don't get used up. The teacher does not have to worry about how to teach abstract concepts. For instance, “it is hard to train cooperative learning, but it is easy to train one structure” (Kagan, 1994). Practical lesson plans help teachers nudge critical thinking, suspend judgement and foster

curiosity, all considered crucial for global and intercultural competence

2. Peer learning and Peer teaching in an intercultural classroom

Peer learning is not a single, undifferentiated educational strategy. It encompasses a broad sweep of activities. Several research has been done, both qualitatively and quantitatively, on strategies of this technique. Researchers from the University of Ulster identified 10 different models of peer learning (Boud, 2000) that are both useful and relevant to this paper.

Cooperative learning ranged from the traditional proctor model, in which senior students tutor junior students. To the more innovative learning cells, in which students in the same year form partnerships to assist each other with both course content and personal concerns. Other models involved discussion seminars, private study groups, pairing (a buddy system) or counseling, peer-assessment schemes. It encompasses both collaborative project and laboratory work, projects in different sized (cascading) groups, workplace mentoring and community activities.

3. Cooperative Learning in an intercultural classroom

Ikeguchi suggests several techniques in the application of cooperative learning both in the teaching of English to second language learners (2016) but the application of cooperative learning in this context extends beyond language learning. The sample lesson attached in a latter part will show its application; a short summary of its effectiveness is given below.

The class is divided into small heterogeneous groups which constitute the learning units. Heterogeneous in this sense refers to culturally mixed groups. Students interact directly with one another in different forms: sharing insights, asking questions, teaching (Japanese) language difficulties, summarizing, and all sorts.

Interaction includes mutual cooperation, assistance and exchange of ideas in pursuit of a common goal, since there are tasks each group has to accomplish. In a sense, cooperative learning in an intercultural class encourages competition because the groups are encouraged to present a discussion summary towards the end of each session. Unlike the traditional lecture method where learning tasks are not routing and imposed, students are empowered to explore, ask questions, interview and make choices regarding the smaller themes they wish to focus on within the umbrella of the class theme. It goes without saying that meaningful learning involves student participation. Cooperative learning in an intercultural classroom not only engages students in their own learning; it also involves the self and others in pursuit of the classroom goal.

4. Active Learning in an intercultural classroom

Like peer learning and cooperative learning active learning has been discussed in so many several ways and in different learning environments. Summed up, active learning is an approach to instruction that involves actively engaging students with the course material through several methods like discussions, problem solving, case studies, role plays and other methods. It involves both the concepts described above. Active learning is not possible without peer involvement in learning and student cooperation in their learning.

Active learning approaches place a greater degree of responsibility on the learner than passive approaches such as lectures, but instructor guidance is still crucial in the active learning classroom. Active learning activities may range in length from a couple of minutes to whole class sessions or may take place over multiple class sessions. Within the group, students share responsibility to participate and collaborate, take advantage of each participant's strengths, and rely on each other for good project management and effective learning.

The application of active learning in an intercultural classroom can be more challenging than its usual implementation in other learning tasks. The students are responsible for their own learning. Contrary to passive learning, students are challenged to think about the intercultural issues and tasks presented in the classroom. Active learning tries to get students to continually explore in the process of learning with opportunities to talk and work together, perceptions change. And this is the goal of active learning in an intercultural classroom: a change in perception and a change in behavior.

The section below presents a sample lesson plan on the actual implementation of these concepts in teaching culture to a culturally mixed group of students. This lesson is a part of a series of lesson in a Course called International Communication, focusing on Intercultural Communication. The challenges of teaching, making students learn culture, means effecting a change in students' thinking, attitude and behavior based on a true awareness of themselves and others. It is the hope of this paper that a series of lesson plans with focus on each aspect of culture and communication can truly cause an effect on students' learning.

TOPIC: Noises in Intercultural Communication
 - Explorations on Intercultural Common Sense –
 -

PROCEDURES:

Warm-up:

1. Ask students to read once again the handouts given the previous week as assignment. (3-5 minutes)
2. A class leader for the day (previously assigned) reads the handout in parts, as guided by the teacher, aloud in class.
3. Everybody answers the Self-check exercises. Items include for example:
 - Q1: Which of the following items are common sense for you?
 - Q2: If someone does this • says this to you how would you feel?
 - ① You're late for an appointment with a friend.
 - ② You received a gift from a friend. What is your initial reaction?
 - ③ You feel you're catching a cold. What would you do?
 - ④ Your friend gives you a piece of his/her food using their chopstick. How would you feel?

Group work No ①:

4. The class is split into 4-5 groups (depending on class size) of intercultural mix, with 1-2 Japanese students in each group. (15~20 minutes)
5. The groups are to accomplish the following tasks in order:
 - ① Spend some time for the foreign students to ask questions to Japanese students about meaning of words and expressions.
 - ② Share each member's answers with the whole group.
 - ③ Uncovering differences. Discuss why members feel differently in each situation. Discussion can be done in either English or Japanese, whichever is more convenient.
 - ④ Every member takes note of differences, while the group secretary records the main points and the group leader makes sure each member of the group is given a fair chance to talk.
 - ⑤ Each group is to give a definition of common sense, and explain why CS is a noise in intercultural communication.

Feedback:

1. The Japanese student leader reports to the whole class a summary of the group discussion.
2. Any member of the group can freely add ideas to support or strengthen the group report.
3. The teacher summarizes main ideas from each group on reports on the board.

Expansion of Basic Concept:

4. Based on the items reported by each group, the teacher DRAWS students' attention to the PYRAMIDICAL SCOPE of common sense (Yashiro, et al, 2001).
 - ① Behavior level: varied concepts of cleanliness – taking off shoes before entering the room, taking a bath before sleep is a MUST in Japan.
 - ② social practices: bowing in everyday life in Japan (Ikeguchi, 2007)
 - ③ social rules and laws: returning a favor or a gift received
 - ④ social values: keeping low profile in conversations
 - ⑤ beliefs: following group harmony and the decisions of authority
 - ⑥ Religion: going to shrines on New Year's Eve
5. The teacher asks students to think and list up examples of the common sense in their own country according to each of the six levels. (5~10 minutes)

Group Work No. ②

6. Students go back to their group to share and discuss (15-20 minutes)
7. Students are given time to write their personal reflections for the day's lesson on their class diary.

Summary and synthesis:

8. Teacher asks random feedback and makes notations on board: common sense across cultures
 9. Students may seek to express the core values underlying their stances.
-

CAVEATS and ISSUES :

1. The Japanese language ability of international students is the first concern. Since the materials and the lessons are conducted in Japanese, there is a need to make sure every foreign student understands to get maximum results.
2. Student personality is a crucial factor in the discussions. A high level of motivation is necessary especially for the shy, both the domestic and international, students to engage in insightful sharing.
3. Besides personality, culture background and learning styles influence and determine to a large extent the success of the discussions. Culture dimensions has been found to be one of them (Ladeira, 1995). The classroom is a microcosm of the educational institutions, which are in turn a microcosm of the larger society and reflects its values, traditions and practices. Two dimensions that exert strong influence on classroom communication and interactions are individualism-collectivism (IC) and power distance (PD). Students from individualistic cultures tend to stand out and speak out, and draw attention. Those from collectivist cultures (most Asian countries), are more strongly nonverbal, unexpressive and unwilling to draw people's attention to themselves. Closely related to IC is power distance, and those students from high PD are less likely to argue, question or debate. These students are more strongly motivated to show respect to teachers and maintain formal relationships with them.
4. Differences in teacher-learning roles vary across culture and have strong influence on classroom approach. Extensive discussions of Smith, Miller and Crassini (1998) and Barnhardt (2000) include individualistic and competitive learning, intrinsic and extrinsic motivation, and even concepts of intelligence. Some of these of interest to this paper are learning styles and preference for cooperative learning. For instance, overseas students generally favor acceptance of authority, and more likely to agree rather than question or negate teacher ideas. Both qualitative (Lieberman, 1994) as well as quantitative research reveal international students from African and Asian countries were often critical of informality in the classroom interactions.

MERITS

Be that as it may, to date, students express positive attitudes about discussions in culturally mixed groups. Another point of concern pointed out earlier is that the presence of international students in the classroom or at an institution rarely prompts faculty members to internationalize what they teach. A result is domestic students becoming uninterested in international education in a serious way (Burke, 1990) (p5). This study has proven that the teacher can change the content and approach of the curricula to enhance its potential for internationalization

To date, Japanese students' comments largely reflect a willingness and a strong interest in the insights of international students. The same is true with the reflections of international students. Some comments include the following. "It is a good idea to have group work where people mix. It gives you perspectives and ideas about how people think and behave. It is a valuable experience, a substantial part of learning.

Conclusions

The class of this design provides some form of DIVE training in its microscopic form in the classroom, when confronted with unfamiliar intercultural situations or ambiguous circumstances (Bennett, 2015). DIVE (Describe, Interpret, Verify, and Evaluate) is a tool designed to help individuals:

1. Learn to temporarily suspend judgement and verify insights before making a final assessment or taking action.
2. Help them navigate situations where they encounter something or someone different in everyday life to have more effective, appropriate and meaningful interaction with others.

As students listen to the sharing of international students, and vice versa, they are encouraged to ask themselves the following questions:

Describe: What do I see/hear in an objective, factual way?

Interpret: What do I think about what I have described?

Verify: What do others think? Is my interpretation accurate?

Evaluate: How do I judge what I think and others think?

The classroom is a microcosm of the educational institutions, which are in turn a microcosm of the larger society and reflects its values, traditions and practices.

“Education gives us the chance to understand that we are all tied together as citizens of the global community and that our challenges are interconnected.” (Ban Ki-moon, UN Secretary General. 2017, March 22). The intercultural classroom has a large role to play.

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***Crisis Marketing Strategy Antecedents of Performance
of Higher Education Institutions (HEIs) in Region III in the Philippines***

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

This paper studies the marketing strategy antecedents of performance of higher education institutions in Philippines in the light of the crisis brought about by the K-12 Curriculum. Antecedents include Market Focus, Market Expansion, Program Offerings, Program Differentiation, Cost Leadership in Tuition, Place/Location Expansion, Advertising, Sales Promotions, Events & Experiences, Public Relations, Direct & Interactive Marketing, Word-of-Mouth, Personal Selling, and Attack Competition. It made use of descriptive – correlational research design, which covered ninety four (94) HEIs covering School Year (SY) 2015-2016. Factor analysis with varimax rotation, Cronbach's alpha coefficient, independent t-tests (for normally-distributed data) or Mann-Whitney U tests (for non-normally distributed data), Pearson r (for normally-distributed data) or Spearman rho tests (for non-normally distributed data) were also used. Four components determined were mass communication strategies, differentiation strategies, personal communication strategies, and target market strategies. Compared to school year 2014-2015, HEIs performed favorably in changes in revenue, profits, assets / investment, and enrollment in school 2015-2016. Compared to public HEIs, private institutions' marketing strategies were found to be significantly different in market focus, market expansion, cost leadership in tuition, sales promotion, event and experiences, public relations, direct marketing, and attack competition. Significant correlations were found to be positively moderate between place / location expansion strategy and profit performance; between place / location expansion, word-of-mouth attack competition strategies and asset / investment performance. Negatively moderate correlation was found between cost leadership in tuition strategy and revenue performance; between direct marketing strategy and enrollment performance.

Keywords: crisis marketing strategy, institutional performance, higher education institutions (HEIs)

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Crisis Marketing Strategy Antecedents of Performance of Higher Education Institutions (HEIs) in Region III in the Philippines

Market performance metrics serve as strategic measures to analyze market position in relation to competition and customers and to determine the impact the company offerings may have in the performance of the company as well as what opportunities and challenges exist. Marketing strategies served as antecedents to the organizational performance. Cavusgil and Zou (1994) found that in the relationship of marketing strategy and performance, marketing strategies such product, price, distribution and promotion served as antecedents or the causes to performance. Similar relationship was also examined and proven that marketing characteristics and programs were antecedents of performance (Townsend, Yenyurt, Deligonul, & Cavusgil 2004 and Julian, 2009). So, marketing strategies are considered antecedents since they are precursors or forerunners of organizational financial performance. In a cause and effect relationship, marketing strategies are the cause and organizational financial performance are the effect. In essence, marketing strategies are considered as antecedents which influence organizational performance.

Strategic marketing is regularly conducted regardless of the situation especially so in time of radical market changes. Once the crisis has occurred crisis denial is no longer an option, instead a coherent and strategic marketing plan must be developed to deal with the crisis and to resolve it. In every crisis lies opportunity (Calvo-Porrall, Stanton, & Mangin, 2016). Winiarski (2010) stated that crises are the natural test for economic decisions. This is the very essence of crisis marketing. It is mainly about opportunity seeking time. It is also anticipatory marketing in approach which is proactive in nature.

Every organization resorts to crisis marketing to proactively address challenges, risks, and uncertainties happening in the market situation. This is true to all industries including the education sector or the academe, which is facing a critical period with the impending implementation of the K-12 curriculum. Such implementation is causing a big financial impact to higher education institutions (HEIs) due to non-enrollment of college freshmen for two years (School Years 2016-2017 & 2017-2018) and the huge budget needed for teachers, who will be retrenched. Both will lead to financial crisis to HEIs. Marketing strategies have to be anticipatory in nature to allow proactive approach in facing every time crisis happens. This crisis will not only happen in the two school years but for the succeeding school years as illustrated in the next page.

School Year	College Enrollment				
	First Year	Second Year	Third Year	Fourth Year	Fifth Year
2016-2017	-	+	+	+	+
2017-2018	-	-	+	+	+
2018-2019	+	-	-	+	+
2019-2020	+	+	-	-	+
2020-2021	+	+	+	-	-
2021-2022	+	+	+	+	-

- Non-enrollment + Enrollment

These marketing strategies have to be analyzed to determine their relationship on the institutional performance of the HEIs. It is for this reason why this study was conducted to determine the crisis marketing of universities in Region III. It was patterned after the research of Koksal and Ozgul (2005) on the relationship between marketing strategies and performance in an economic crisis conducted in Turkey. It further identified specific marketing strategies these universities were doing to survive a crisis.

Specifically, it addressed the following research questions:

1. What are the marketing strategies used by the HEIs in Region III given the opportunities brought about by the effects of the K-12 Curriculum in terms of the following:

- 1.1. Market Focus
- 1.2. Market Expansion
- 1.3. Program Offerings
- 1.4. Program Differentiation
- 1.5. Cost Leadership in Tuition
- 1.6. Place/Location Expansion
- 1.7. Advertising
- 1.8. Sales Promotions
- 1.9. Events & Experiences
- 1.10. Public Relations
- 1.11. Direct & Interactive Marketing
- 1.12. Word-of-Mouth
- 1.13. Personal Selling
- 1.14. Attack Competition Strategies

2. What are the changes in the institutional performance of HEIs in Region III during the school 2015-2016 compared to School Year 2014-2015 in terms of the following:

- 2.1. revenue
- 2.2. profits
- 2.3. assets/investment
- 2.4. enrollment

Is there a significant difference on the marketing strategies between the private HEIs and the public HEIs?

Is there a significant difference on the institutional performance between the private HEIs and the public HEIs?

Is there a significant relationship between the marketing strategies and institutional performance of the HEIs in Region III given the opportunities brought about by the effects of the K-12 Curriculum?

A conceptual framework, Hierarchical Marketing Performance (HMP) framework developed by Huizingh and Zengerink (2001) states that marketing performance is a

Methods

Research Design

The researcher made use of descriptive – correlational research design to find out the relationship between marketing strategies and performance among HEIs in Region III given the opportunities brought about by the effects of the K-12 Curriculum.

Participants

This study covered ninety four (94) HEIs. The sampling is based on the Rule of 5, where the subjects-to-variables ratio should be no lower than 5 (Bryant & Yarnold, 1995). Of these, eighty seven (87) are private HEIs while seven (7) are public HEIs. Of the ninety four (94) HEIs, Eighty four (84) HEIs are listed with the Commission on Higher Education while ten (10) are listed with Technical Skills and Development Authority. See Appendix B for the combined lists.

Sources of Data

Primary data were gathered from the presidents or authorized personnel of these HEIs through a survey questionnaire. Secondary data were also gathered from the relevant book, journals and internet websites as well as reports from government agencies.

Instrument

A questionnaire was used to collect data. It was patterned after the study of Koksai and Ozgul (2005). On Appendix A is the questionnaire of the said study. However revisions were made on Parts II and III of the questionnaire in consideration of appropriateness and relevance to HEIs' operations in the Philippine education setting. An informed consent was included in the cover letter accompanying the questionnaire given to the HEI presidents or their authorized personnel/representative.

Procedure

Frequency and percentage distribution was used to summarize categorical data. Quantitative data were described using mean (if normally-distributed), median (if non-normally distributed), minimum and maximum values. Normality was tested using Shapiro Wilk test.

Factor analysis with varimax rotation was applied in order to identify the main underlying dimensions of marketing strategies used during the impending crisis. The internal consistency reliability of the strategies in each identified factor was determined using Cronbach's alpha coefficient.

Comparisons between the marketing strategies and institutional performance of private and public HEIs were made using independent t-tests (for normally-distributed data) or Mann-Whitney U tests (for non-normally distributed data).

To determine correlation between marketing strategies and institutional performance, Pearson r (for normally-distributed data) or Spearman rho tests (for non-normally

distributed data) were used. The computed correlation coefficients were interpreted based on the following ranges (Zou, Tuncali & Silverman, 2003):

Correlation Coefficient Value	Direction and Strength of Correlation
-1.0	Negative Perfect Correlation
-0.80 - (-0.99)	Negative Very Strong Correlation
-0.50 - (-0.79)	Negative Strong Correlation
-0.20 - (-0.49)	Negative Moderate Correlation
-0.01 - (-0.19)	Negative Weak Correlation
0	No Correlation
0.01 - 0.19	Positive Weak Correlation
0.20 - 0.49	Positive Moderate Correlation
0.50 - 0.79	Positive Strong Correlation
0.80 - 0.99	Positive Very Strong Correlation
1.0	Positive Perfect Correlation

Table 1: Degree of Relationship

All statistical tests were performed using a free trial version of Stata 14. P-values less than or equal to 0.05 were considered significant.

Results

I. Marketing strategies used by the HEIs in Region III given the opportunities brought about by the effects of the K-12 Curriculum

As found in Table 2, the HEIs' use of all the marketing strategies included in the survey generally increased given the opportunities brought about by the effects of the K-12 Curriculum.

Total responses to some of the variables do not total to 94 due to no responses from the other participants.

		Very High Decrease	High Decrease	Medium Decrease	Small Decrease	Unchanged	Small Increase	Medium Increase	High Increase	Very High Increase	Mean
		-4	-3	-2	-1	0	1	2	3	4	
Market Focus	f	1		1	4	7	15	33	24	8	1.9
	%	1.08		1.08	4.3	7.53	16.13	35.48	25.81	8.6	
Market Expansion	f		1	3	1	6	13	26	24	19	2.2
	%		1.08	3.23	1.08	6.45	13.98	27.96	25.81	20.43	
Program Offerings	f	2	1	1	6	19	12	22	15	12	1.4
	%	2.22	1.11	1.11	6.67	21.11	13.33	24.44	16.67	13.33	

Program Differentiation	f		2	1	2	23	22	21	11	4	1.2
	%		2.33	1.16	2.33	26.74	25.58	24.42	12.79	4.65	
Cost Leadership in Tuition	f			1	2	25	27	14	13	8	1.4
	%			1.11	2.22	27.78	30	15.56	14.44	8.89	
Place/Location Expansion	f	3		3	6	39	16	13	8	2	0.6
	%	3.33		3.33	6.67	43.33	17.78	14.44	8.89	2.22	
Advertising	f	1	1	1	1	15	20	23	22	9	1.7
	%	1.08	1.08	1.08	1.08	16.13	21.51	24.73	23.66	9.68	
Sales Promotion	f	3		1	4	20	21	24	13	6	1.2
	%	3.37		1.12	4.49	22.47	23.6	26.97	14.61	6.74	
Event & Experiences	f	1			3	10	18	35	15	10	1.8
	%	1.09			3.26	10.87	19.57	38.04	16.3	10.87	
Public Relations	f	1	1	1	1	15	18	31	16	8	1.6
	%	1.09	1.09	1.09	1.09	16.3	19.57	33.7	17.39	8.7	
Direct & Interactive	f	1	2	2		7	16	29	23	12	1.9
	%	1.09	2.17	2.17		7.61	17.39	31.52	25	13.04	
Word-of-Mouth	f			2		6	12	31	25	16	2.3
	%			2.17		6.52	13.04	33.7	27.17	17.39	
Personal Selling	f			3		5	10	25	30	19	2.4
	%			3.26		5.43	10.87	27.17	32.61	20.65	
Attack Competition	f	2		1	3	23	26	19	15	3	1.2
	%	2.17		1.09	3.26	25	28.26	20.65	16.3	3.26	

Table 2: Mean Change Marketing Strategies by HEIs given the opportunities brought about by the K-12 Curriculum

As indicated in Table 3, the first component accounting for 19.07% of variance consisted of mass communications strategies such as advertising, sales promotion, events & experiences, and public relations, which had factor loadings of 0.656, 0.777, 0.645, and 0.743, respectively. The second component, accounting for 17.91% of the variance comprised of differentiation strategies such as program offerings, program differentiation, and cost leadership in tuition, which had factor loadings of 0.856, 0.814, and 0.747, respectively. The third component, accounting for 16.30% of the variance consists of personal communications strategies namely, direct marketing, word-of-mouth, and personal selling, which had factor loadings of 0.544, 0.872, 0.761, respectively. Lastly, the fourth component, accounting for 11.75% of the variance consists of target market strategies, namely market focus and market expansion, which had factor loadings of 0.816 and 0.796, respectively

Lorenzo-Seva, (2013) stated loadings can range from -1 to 1. When loadings are close to -1 or 1, they indicate that the factors strongly affect the variable. Only the strategies with factor loadings of at least 0.50 are to be retained (Matsunaga, 2010).

Cronbach's alpha is generally used as a measure of the reliability of a set of questions in a survey instrument. It measures the interrelatedness of a set of items. Cronbach's alpha coefficients for all the factors extracted were within the acceptable range (i.e. 0.70 and above) (Tavakol & Dennick, 2011). So there is reliability of the set of questions used in the survey instrument.

	Factor Loading	% of Variance Explained	Cronbach's alpha
<i>Factor 1: Mass Communications Strategies</i>		19.07%	0.841
Advertising	.656		
Sales Promotion	.777		
Event & Experiences	.645		
Public Relations	.743		
<i>Factor 2: Differentiation Strategies</i>		17.91%	0.831
Program Offerings	.856		
Program Differentiation	.814		
Cost Leadership in Tuition	.747		
<i>Factor 3: Personal Communications Strategies</i>		16.30%	0.762
Direct Marketing	.544		
Word-of Mouth	.872		
Personal Selling	.761		
<i>Factor 4: Target Market Strategies</i>		11.75%	0.716
Market Focus	.816		
Market Expansion	.796		

Table 3: Results of Factor Analysis with Varimax Rotation on the Marketing Strategies by HEIs given the opportunities brought about by the K-12 Curriculum

II. Institutional performance of the HEIs in Region III during the school 2015-2016 compared to School Year 2014-2015

In terms of changes in the institutional performance of the HEIs in Region III in School Year 2015-2016 compared to School Year 2014-2015, it can be seen in Table 4 that the changes in revenue generated, profits earned from the total revenue, assets / investment, and enrollment were generally favorable.

Total responses to some of the variables do not total to 94 due to no responses from the other participants.

Change	Change in Revenue		Change in Profit		Change in Asset/Investment		Change in Enrollment	
	f	%	f	%	f	%	f	%
+10 (45% + Increase)	3	3.66	3	3.80	5	6.58	1	1.11
+9 (40% - 44% Increase)		0.00		0.00	1	1.32	1	1.11
+8 (35% - 39% Increase)	3	3.66	1	1.27	4	5.26	5	5.56
+7 (30% - 34% Increase)	5	6.10	3	3.80	2	2.63	3	3.33
+6 (25% - 29% Increase)	1	1.22	1	1.27	2	2.63	4	4.44
+5 (20% - 24% Increase)	2	2.44	6	7.59	5	6.58	7	7.78
+4 (15% - 19% Increase)	4	4.88	4	5.06	4	5.26	2	2.22
+3 (10% - 14% Increase)	14	17.07	10	12.66	16	21.05	12	13.33
+2 (5% - 9% Increase)	11	13.41	11	13.92	6	7.89	10	11.11
+1 (1% - 4% Increase)	17	20.73	14	17.72	11	14.47	14	15.56
-10 (45% - + Decrease)	1	1.22	2	2.53	3	3.95	1	1.11
-9 (40% - 44% Decrease)	1	1.22	1	1.27	1	1.32	1	1.11
-8 (35% - 39% Decrease)	1	1.22	2	2.53		0.00	2	2.22
-7 (30% - 34% Decrease)		0.00		0.00	1	1.32	1	1.11
-6 (25% - 29% Decrease)	2	2.44	2	2.53		0.00	2	2.22
-5 (20% - 24% Decrease)	3	3.66	2	2.53	2	2.63	2	2.22
-4 (15% - 19% Decrease)	4	4.88	4	5.06		0.00	1	1.11
-3 (10% - 14% Decrease)	6	7.32	5	6.33	4	5.26	5	5.56
-2 (5% - 9% Decrease)	1	1.22	4	5.06	1	1.32	8	8.89
-1 (1% - 4% Decrease)	4	4.88	4	5.06	8	10.53	9	10.00

Table 4: Changes in the institutional performance of the HEIs in Region III during the school 2015-2016 compared to School Year 2014-2015

III. Difference on the marketing strategies and institutional performance of the private HEIs and the public HEIs

On Table 5, statistical comparison tests showed that private HEIs were found to have used the following marketing strategies more than the public HEIs: market focus, market expansion, cost leadership in tuition, sales promotion, event and experiences, public relations, direct & interactive marketing, and attack competition (p-values < 0.05). Conversely, private and public HEIs did not vary significantly in terms of their use of strategies on program offerings, program differentiation, place/location expansion, advertising, word-of mouth, and personal selling (p-values > 0.05).

	Mean / Median Rating		p-value	Interpretation
	Private HEIs	Public HEIs		
Marketing Strategies				
Market Focus	2.00	1.00	0.0310 ^M	Significant Difference
Market Expansion	2.00	1.00	0.0445 ^M	Significant Difference
Program Offerings	2.00	2.00	0.9382 ^M	No Significant Difference
Program Differentiation ⁿ	1.20	0.83	0.5388 ^t	No Significant Difference
Cost Leadership in Tuition ⁿ	1.42	0.33	0.0014 ^t	Significant Difference
Place/Location Expansion ⁿ	0.63	-0.50	0.0845 ^t	No Significant Difference
Advertising	2.00	1.00	0.1140 ^M	No Significant Difference
Sales Promotion	1.50	0.00	0.0004 ^M	Significant Difference
Event & Experiences	2.00	1.00	0.0037 ^M	Significant Difference
Public Relations	2.00	0.00	0.0122 ^M	Significant Difference
Direct & Interactive	2.00	1.00	0.0096 ^M	Significant Difference
Word-of Mouth	2.00	2.00	0.1199 ^M	No Significant Difference
Personal Selling	3.00	2.00	0.1751 ^M	No Significant Difference
Attack Competition	1.00	0.00	0.0069 ^M	Significant Difference

n – normally distributed; *M* – Mann Whitney test; *t* – independent *t* test

Table 5: Comparison of the Marketing Strategies Used by Private and Public HEIs

While on Table 6, public HEIs indicated a significantly higher change in enrollment as opposed to private HEIs (mean = 3.86 vs 0.88; p-value < 0.05). On the other hand, no significant differences were noted between public and private HEIs in terms of change in revenue (mean = 3.83 vs 1.24; p-value > 0.05), change in profit (mean = 2.83 vs 0.73; p-value > 0.05) and change in asset / investment (mean = 1.40 vs 1.96; p-value > 0.05).

	Mean Rating		p-value	Interpretation
	Private HEIs	Public HEIs		
Institutional Performance				
Change in Revenue	1.24	3.83	0.0716 ^t	No Significant Difference
Change in Profit	0.73	2.83	0.1301 ^t	No Significant Difference
Change in Asset/Investment	1.96	1.40	0.3980 ^t	No Significant Difference
Change in Enrollment	0.88	3.86	0.0371 ^t	Significant Difference

t – independent *t* test (one-tailed test; H_a : Mean(Private) < Mean (Public) except for Change in Asset / Investment)

Table 6: Comparison of the Institutional Performance of Private and Public HEIs

IV. Relationship between the marketing strategies and institutional performance of the HEIs in Region III given the opportunities brought about by the effects of the K-12 Curriculum

Table 7 shows the correlation analysis of the marketing strategies and institutional performance of the HEIs in Region III given the opportunities brought about by the effects of the K -12 Curriculum which shows that greater use of the strategy cost

leadership in tuition is associated with less increase in revenue (Pearson $r = -0.22$; p -value = 0.05) while greater use of the strategy place / location expansion is associated with greater increase in profit (Pearson $r = 0.22$; p -value = 0.05). Likewise, greater use of the strategy place / location expansion is associated with greater increase in asset / investment (Spearman $\rho = 0.27$; p -value = 0.02). Similarly, greater use of word-of-mouth marketing strategy is associated with greater increase in asset / investment (Spearman $\rho = 0.26$; p -value = 0.03). Also, greater use of strategies to attack competitors is associated with greater increase in asset / investment (Spearman $\rho = 0.23$; p -value = 0.05). Lastly, greater use of direct marketing strategy is associated with less increase in enrollment (Spearman $\rho = -0.23$; p -value = 0.05).

	Change in Revenue		Change in Profit		Change in Asset/Investment		Change in Enrollment	
	Correlation Coefficient	p-value	Correlation Coefficient	p-value	Correlation Coefficient	p-value	Correlation Coefficient	p-value
Market Focus	-0.02	0.86	0.01	0.93	0.03	0.81	-0.06	0.59
Market Expansion	0.12	0.32	0.16	0.17	0.13	0.27	0.03	0.78
Program Offerings	-0.08	0.49	-0.08	0.48	0.06	0.64	0	0.99
Program Differentiation	0.17 ^r	0.13	0.01 ^r	0.9	0.12	0.29	0.10 ^r	0.35
Cost Leadership in Tuition	-0.22 ^r	0.05	-0.19 ^r	0.11	0.02	0.88	-0.16 ^r	0.15
Place/Location Expansion	0.17 ^r	0.14	0.22 ^r	0.05	0.27	0.02	0.13 ^r	0.23
Advertising	0	0.97	-0.08	0.5	0.04	0.72	-0.1	0.41
Sales Promotion	-0.1	0.4	-0.08	0.52	0.08	0.5	-0.14	0.22
Event & Experiences	0.02	0.84	0.04	0.72	-0.02	0.84	-0.15	0.2
Public Relations	0	0.97	0.02	0.88	-0.07	0.58	-0.06	0.63
Direct Marketing	-0.04	0.73	-0.06	0.6	-0.02	0.88	-0.23	0.05
Word-of-Mouth	0.18	0.13	0.13	0.29	0.26	0.03	0.01	0.95
Personal Selling	0.02	0.84	-0.05	0.65	0.02	0.89	-0.02	0.86
Attack Competition	0.12	0.31	0.06	0.62	0.23	0.05	0.15	0.2

All correlation coefficients are Spearman rho correlation coefficients except those marked with "r" which are Pearson r correlation coefficients

Table 7: Correlation of the Marketing Strategies Used by the HEIs in Region III to their Institutional Performance

Discussion

Marketing strategies were consciously increased given the opportunities brought about by the effects of the K-12 Curriculum. Similar to the findings of Feliciano (2015), Schüller and Rašticová (2011), Hawkins and Frohoff (2010), Huang, Binney, and Hede (2010), Hesel (2004), Lewison and Hawes (2007) marketing strategies of HEIs were found to include product/service, pricing, place or location, integrated marketing communications, and competition.

Factor analysis determined the data for patterns as well as reduced the many marketing strategy variables to a more manageable number. Doing this allowed the identification of four components namely the mass communication strategies, differentiation strategies, personal communication strategies, and target market strategies.

Reissenweber (2012), Wang (2010), and Allen, Burgess, Rasul, and McKenna (2010) identified the school performance indicators as revenue, profit, and revenue growth, growth in the number of customers, and accounting performance (business-unit revenues, profit margins, and return on sales). Compared to school year 2014-2015, HEIs performed favorably in term of institutional performance of changes in revenue generated, profits earned from the total revenue, assets / investment, and enrollment in school 2015-2016.

As to the comparison of their marketing strategies, significant difference were found on market focus, market expansion, cost leadership in tuition, sales promotion, event and experiences, public relations, direct marketing, and attack competition. They were more competitive in choosing their market, pricing their tuition, and communicated these strategies to their present and prospective students. However, no significant difference was found program offerings, program differentiation, place/location expansion, advertising, word-of mouth, and personal selling.

As to the comparison of their institutional performance, public HEIs indicated a significantly higher change in enrollment as opposed to private HEIs. Both private and public HEIs believed in keeping strong and differentiated program offering.

Guided by the environment-strategy-performance paradigm of Sin, Tse, Yau, Chow, and Lee (2003) and HRMP model of Huizingh, and Zengerink (2001), this study found positive correlation between the marketing strategies and institutional performance of the HEIs in Region III during an impending crisis showed that greater use of the strategy cost leadership in tuition is associated with less increase in revenue makes a lot of financial sense. Greater use of the strategy place / location expansion is associated with greater increase in profit due to successfully catching students by convenience of location. Very much related is the greater use of the strategy place / location expansion is associated with greater increase in asset / investment. Expansion in facilities or in campus area necessitated corresponding increase in investment. Both greater use of word-of-mouth marketing strategy and attack competition was associated with greater increase in asset / investment since both lead to more enrollees. Word of mouth strategies motivated present students to stay in the HEI as well as attracted potential enrollees like what attack competition strategy did in persuading students from competing HEIs to transfer. However, greater use of direct marketing strategy, was associated with less increase in enrollment must be due to

possibilities that enrollment prospects may find the strategy too aggressive that may turn them off to enroll in the campaigning HEI.

It is to be noted that all the foregoing correlations were found to be moderate according to Zou and Silverman (2003).

Conclusion

Among the strategies, the use of personal selling was found to have increased the most followed by word-of-mouth and then by market expansion.

Through factor analysis, the study was able to reduce the number of marketing strategy variables to four components; namely; the first component of mass communications strategies, the second component of differentiation strategies, third component, of personal communications strategies, and the fourth component of target market strategies.

Change in institutional performance of the HEIs in Region III for School Year 2015-2016 in terms of revenue generated, profits earned from the total revenue, assets/investment, and enrollment were investigated in the study. These changes experienced by the HEIs were favorable. Despite the impeding financial crisis, the changes were positive this year compared to the past year.

The study presented a statistical comparison of private and public HEIs. Such differences were found in the marketing strategies such as market focus, market expansion, cost leadership in tuition, sales promotion, event and experiences, public relations, direct marketing, and attack competition. No significant differences were however found in program offerings, program differentiation, place/location expansion, advertising, word-of mouth, and personal selling. As to the comparison of their institutional performance, significant difference was found in the change of enrollment. On the other hand, no significant differences were noted between public and private HEIs in terms of change in revenue, change in profit and change in asset / investment.

Like Koksall and Ozgul (2005) who investigated the effects of marketing strategy changes on company performance during times of crisis, this study similarly discovered the impact of marketing strategies to the HEIs performance given the opportunities brought about by the effects of the K-12 Curriculum. This study was able to prove the Hierarchical Marketing Performance (HMP) framework (Huizingh & Zengerink, 2001), which states that marketing performance ultimately leads to financial performance, holds true for the HEIs in Region III during the conduct of the study in School Year 2015-2016.

With moderate correlation found on these marketing strategies with institutional performance of the HEIs, makes them more relevant strategies. Making greater use of them will cause corresponding favorable impact on the institutional performance. Correlations findings however implying that there are other variables accounting for the institutional performance of the HEIs other than their marketing strategies such as quality of education, graduation rate, board exam performance and employability of graduates.

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***Skills of Analyzing and Synthesizing Textual Information in University Students:
Interdisciplinary and Intercultural Approach***

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

One of the most important tasks that the field of higher education is facing in the epoch of information technologies is the formation of a new type of specialist who is a professional in one's area of expertise as well as an informational erudite having the necessary skills to productively work with large flows of information. Presently, this task is far from completion. Two researchers, a journalist and a psychologist, with different cultural backgrounds combined their pedagogical experience and the results of long-term research of the contemporary university students. They studied their students' abilities to analyze and synthesize information in the texts when performing various learning assignments, such as titling publications, annotating sources of information, and writing research papers. The results showed that most students in each specialty and culture had underdeveloped information skills, i.e. were informationally incompetent. Their mistakes were systematic and similar. The most difficult task for them was to identify key words, phrases and fragments in the texts. Consequently, such students had no full-fledged understanding of the semantic aspect of information. To denote this feature of cognitive activity of many university students, the authors the study used the term *fuzzy thinking*. The authors concluded that the educators' efforts should be aimed at teaching university students how to work with texts professionally. Students in academia should be trained on developing skills to analyze and synthesize information because they are the main mechanisms which assure meaningful intellectual activity.

Keywords: information competence, analytical skills, textual information, fuzzy thinking, university students.

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Introduction

One of the most important tasks which the field of higher education is facing in the epoch of information technologies is the formation of a new type of specialist. In addition to being an expert in one's area of knowledge, such a specialist is an informational erudite having skills to productively work with large flows of information. Specialists of this kind can find the information needed for their professional activity in electronic libraries, classify, analyze, select data and make decisions about the reliability of information. At present, the task of forming such a specialist is still far from completion.

This task, if unsolved, can turn into a serious social problem that prevents progress. Problems can already be found today in representatives of different specialties and in different cultures, even technologically advanced societies. In this work, we discuss how these problems are manifested in students specializing in social sciences in some universities of USA and Russia.

Theoretical Frame

The concept of information competence (*IC*) appeared at the end of the last century in connection with the rapid development of information technology. It reflects the ability of a modern individual to adapt to new conditions of life and activity in the information environment.

Information Competence was viewed, first, as an essential characteristic of human activity related to the research in electronic libraries. Eventually, when the *IC* development programs were integrated into the curriculum of colleges/universities across the country, the definition also developed. In the Information Literacy Competency Standards for Higher Education (2000) we find that *IC* is the ability to a) determine information needed, b) access it efficiently, c) evaluate it and its sources critically, d) use it effectively for solving a specific task, e) incorporate it into one's knowledge, f) access and use it legally and ethically. This definition with little variations can be found today in many publications available in the Internet (Smiths, 2007; Held, 2011; College of San Mateo Library, 2018).

There is also a broader definition: *IC* consists of "library literacy, computer literacy, media literacy, technological literacy, ethics, critical thinking, and communication skills". This understanding of *IC* was documented and adopted by the Academic Senate for California Community Colleges (1998) and eventually by other US educational institutions. Similar definitions can be found in the works of Russian specialists (Udovik, 2011; Zaryeva, 2015).

The latter definition includes requirements for the psychological features included into *IC*. In our study, we adhere to this paradigm and focus on the role which cognitive processes play in the development of *IC*. It is necessary to consider such cognitive functions as analysis and synthesis, basic components of formal-logical thinking. They are the important cognitive mechanisms underlying *IC*. Another important type of thinking that is needed for effective work with information, specifically textual information is semantic thinking. Adequate operating with the meanings contained in the information is another cognitive mechanism underlying *IC*.

Authors of this paper speak about the *IC* of the university students in the fields of social sciences. *IC* is viewed here as the complex of cognitive skills required for working with textual information to perform daily learning assignments either with the use of information technology tools or without them.

Methodology

To collect empirical data, authors used methods of observing, conversations with students, and analyzing their intellectual work. Participant observation and conversations were the basic techniques for the study of the students' learning activities in a traditional classroom of Moscow State University (McLeod, 2015).

In Touro University System, a combination of observation techniques and the analysis of the students' research papers were used. Courses were conducted on the Internet. The participant observation was applied to check homework and discuss them with students in the asynchronous mode. The non-participant observation took place in some forums on the Discussion Board where the instructor, not being involved, checked the students' collaborative work related to solving learning tasks. An analysis of the students' papers was carried out with the use of a simplified version of the content analysis (Content Analysis, 2018).

Studies of the Skills for Analyzing and Synthesizing Textual Information

Titling a note

Country: Russian Federation
Educational Institution: Moscow State University
Department: Journalism
Course: Basics of Editing Media Texts
Students: Undergraduate level; seniors (the 4th year)

In the modern world which is overwhelmed with information, people, when looking at a title, want to understand what a publication is about and whether it makes sense to read it. Of course, the publications must meet this audience's need (Gilyarevsky, 2003). The titles should be informative that is, it should provide the fullest possible reflection of the publication's content (Inshakova, 2017). Informative titles for printed and electronic issues are important for all areas of mass communication: education, religion, culture, and even advertising, in which the accuracy of the commercial proposal determines the response of a future consumer.

Dr. Natalia Inshakova, one of the authors of this article, when she taught the topic "Work on the title", used all forms of instructional methodology. She specified features and values of the informative titles in her lectures, demonstrated informative titles on numerous examples during practicums. In those classes, the students were familiarized with the strategy for analyzing titles and the algorithm for constructing meaningfully adequate titles (Gendina, 2013).

Then, the students received a small newspaper's note for their homework assignment. Its title did not adequately reflect the content of the note. The students' task was to determine whether the title was informative and propose a more informative one.

To formulate the title, it is necessary, first, to determine the topic of the note. The topic consists of three key-concepts: the subject of activity, the object of activity, and the event. The key-concepts have their textual indicators in the note. Identifying the textual indicators is a central part of any task of this kind; it cannot be solved without a proper analysis of the text. The note, key-concepts, and their textual indicators (highlighted in colors) are illustrated in Figure 1.

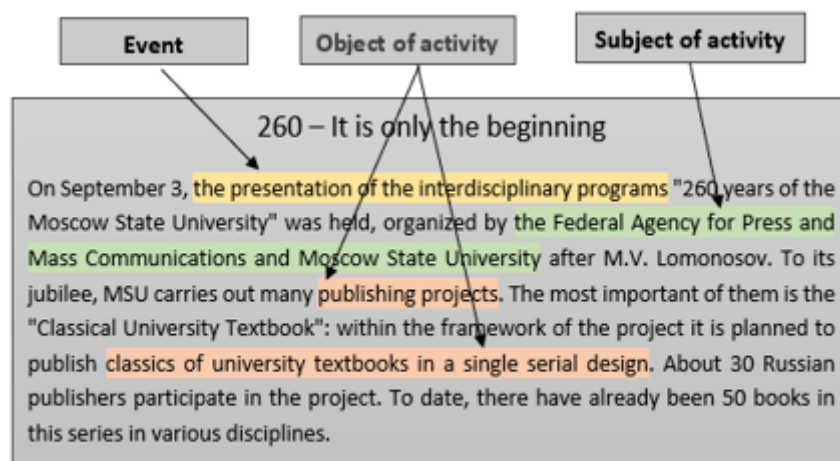


Figure 1. The note and a sample of its correct analysis

The study lasted from 2013 to 2018. The results showed that the search for textual indicators of key-concepts was difficult for the students. Identifying the event described in the note turned out to be especially hard. The instructor tried to find out the cause of it. When discussing with the students the results of their homework, she asked, “What is the note’s main event?” The most common answers were “publishing projects”, “publications for jubilee.” From semester to semester, most students were losing sight of the main event – they missed “the presentation”.

The students experienced even greater difficulties when they were composing their own titles for the note. These results are illustrated in Figure 2. The answers can be divided into 4 categories.

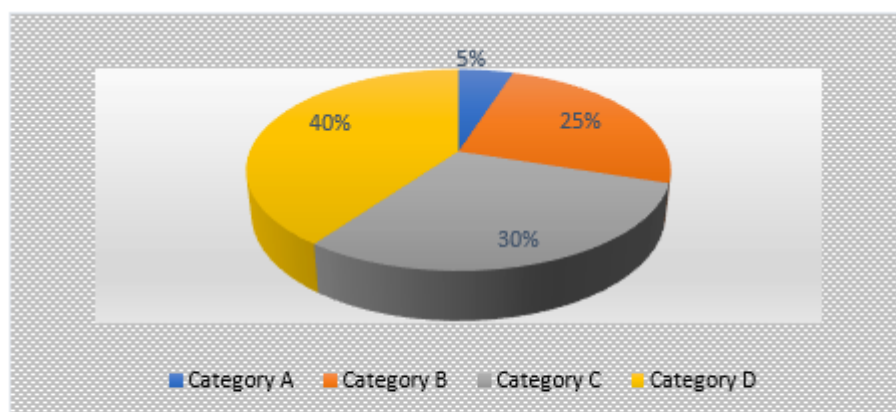


Figure 2. Distribution of students between categories of answers across 2013-2018 years

The category A represents correct answers. 5% of students proposed informative titles which reflected the essence of the note to the greatest degree: “Project *Classical*

University Textbook: Presentation of Publishing Programs for the 260th Jubilee of Moscow State University".

The category B represents incomplete answers. 25% of students, although determined the specific aspects of the topic, proposed non-informative titles: "Textbooks for the jubilee of the University", "Moscow University: publishing projects."

The category C represents wrong answers. 30% of students did not cope with the task. They substituted it by offering the advertising titles: "In the jubilee with a new textbook", "Learn, learn and learn!". Quite often their titles were misinforming: "Age of maturity".

The category D represents absence of answers. 40% of the students refused to perform the task considering the given title effective and believing that "nothing was wrong with unclear and incomprehensible titles". Many of them were also convinced that "to attract attention of the readers is more important than anything else". "You want us," – they were saying to their professor, – "to create boring titles, but titles must not be boring!"

Drawing up an annotation

Country: Russian Federation
 Educational Institution: Moscow State University
 Department: Journalism
 Course: Basics of Editing Media Texts
 Students: Undergraduate level; seniors (the 4th year students)

The annotation is the next, – after the title, – step in informing the readers about the publication. Annotation is derived from the Latin word *annotatio* (note). An annotation is a brief description of the publication's content and form: it has information about the publication's main characteristics. In fact, any book or article in mass media, art, or science, – may be accompanied by an annotation; in English-language scientific journals it is usually called *abstract*. For some majors including journalism an annotation is an obligatory element for qualification works.

Dr. Inshakova in her lectures familiarized her students with requirements for writing an annotation and with technology of its composing (Suminova, 2001; Baryakina, 2018; Nikitenkova, 2018). The requirements were related to various aspects of the text which are mandatory for inclusion in the annotation. Namely: a) author, compiler, translator, b) genre, c) content, d) year of publishing, e) the composition of its reference apparatus, f) specific of publishing and printing form, g) the reader's address.

The students were also informed about the requirements for the literary format of annotation (Methodology of Composing Annotation, 2006), and about what is not allowed in the annotations: stamps, quotations from the text of the annotated work, exceeding the normative volume (600 characters).

Then, the students were offered an annotation to a published novel with a bibliographic description of the book: Lewis C. (2010). *Till we have faces*. Translated from English by I. Kormiltsev. Moscow: Foreign Literature; B.S.G. – PRESS. 304 p.

Till We Have no Faces is a philosophical parable, a “retold myth”, by the author's own definition. The eternal story of Amur and Psyche raises eternal questions about the Fate of man and the nature of Love - and gives answers to them. 220 characters.

The students’ task was to find errors in this annotation and propose their own, more informative options. Acquaintance with the book was not a prerequisite for this assignment. However, students were recommended to search for missing and necessary information in the Internet.

The instructor, when analyzing results of the students’ work on this task, found the following:

1. Many students were able to detect errors in someone else's annotations, but they could not compose their own.
2. In the annotations drawn up by students, the most common mistakes were:
 - a. absence of the main book’s characteristics (for example, on the account of its content).
 - b. excessive amount of insignificant details and/or mandatory data (about the author, the circumstances of the creation of the work, etc.)
 - c. lack of language discipline (verbosity, repetition, many words with undefined meaning)
3. In the average, only one third of students drew up informative annotations which met most formal requirements.

The short annotation given to students for their homework met only two formal requirements: it had the textual indicators of the book genre (“philosophical parable”) and its content (“eternal story of Amur and Psyche”). So, the students generally completed the first part of the assignment. However, most of them still failed with the second part of it. Only about 30% of investigated population were able to compose an informative annotation which met from 6 to 9 formal requirements. One of the informative annotations with the highlighted textual indicators of formal requirements is illustrated in Figure 3.

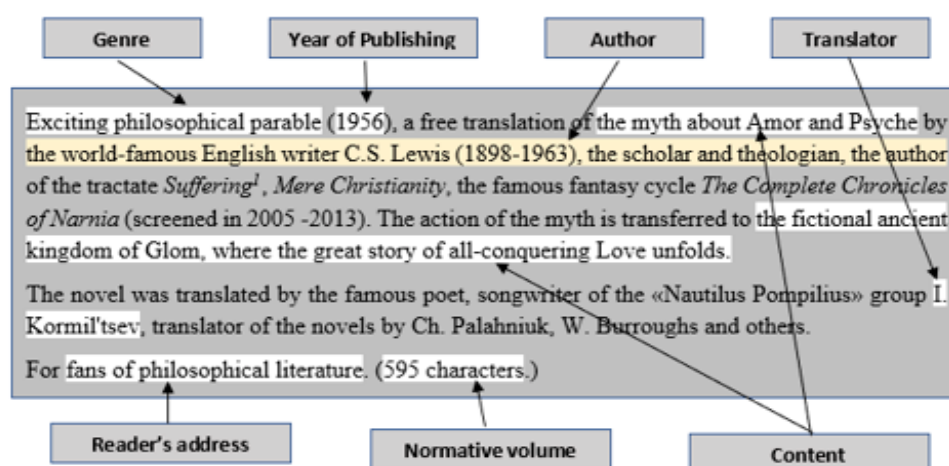


Figure 3. An informative annotation and a sample of its correct analysis

Writing a research paper

Country: USA
Educational Institution: Touro College & University System
Department: School of Education and Special Education
Course: Child Development and Learning in Cultural Context
Students: Graduate level; the first year

The research paper (*RP*) is a kind of academic writing which aims to explore and communicate ideas and arguments and is based on the search of information in traditional and virtual libraries. (Difference between creative and academic writing, 2018; Types of academic writing, 2018). Currently, the *RP* is widely incorporated into the college/university curriculum. It is the most advanced and reliable form of testing learners' knowledge and skills on a subject. An effective *RP* is an indisputable indicator of a student's information competence.

Dr. Anna Toom, another author of this article, assigned *RPs* in her online psychology course which she taught from 2014 to 2016. Students wrote papers on the topic *Comparative Analysis of Theoretical Approaches to Child Development and Learning*.

The study was conducted in two stages. The first stage in which 81 students studied lasted during the summer and fall of 2014. The instructor guided students by her virtual lecture about specific features of the research paper as a genre and its difference from other types of writing. Additionally, the students were given certain requirements for the paper's content and format.

The main criterion for evaluating the *RPs* was the quality of the comparative analysis of theoretical approaches carried out in them. Accordingly, all students' works were divided into the following categories. They were papers in which a comparative analysis: was not done (category 1), was done incorrectly (category 2), was done correctly (category 3). An additional category was allocated, which counted non-submitted papers and those in which the topic was replaced (category 4).

Distribution of the students' *RP* between categories is illustrated in Figure 4. Since the number of students in the summer and fall semesters was not the same, the data was normalized. Numbers of *RP*-s in categories are represented in percentages.

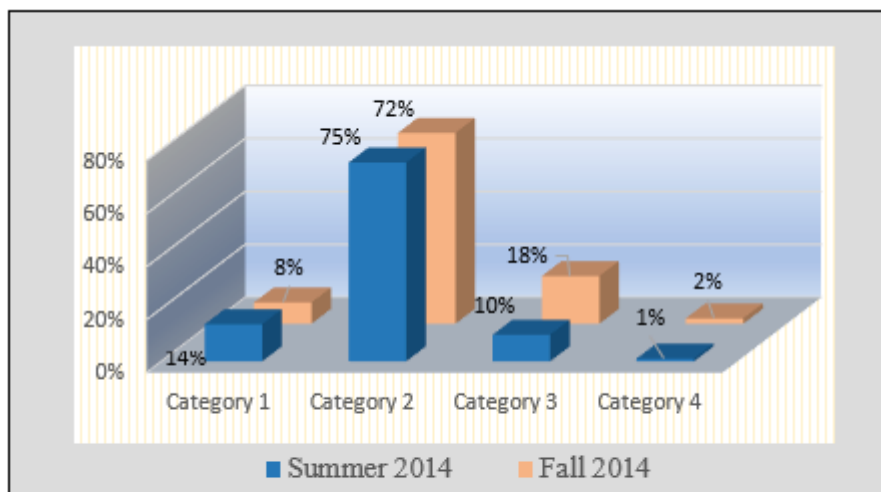


Figure 4. Distribution of the RPs between categories across the two semesters, 2014.

The two most significant results are as follows:

1. The most populated category in both semesters was compounded by the students who performed a comparative analysis incorrectly. Together with those who did not accomplish the task, they formed an overwhelming majority in the investigated population.
2. The distribution of the papers between the four categories appeared consistent from one semester to the next. Such a similarity of graphic compositions for different semesters indicated the reliability of the results.

These were the alarming facts. It looked like about 85% of our graduate students did not have sufficient analytical skills for accomplishing the final course work.

The second stage of this study took place during the 2015 and 2016 academic years. At this time, 222 students took the same course and wrote their RPs on the same topic. The only difference was in assigning a preliminary training for writing effective papers.

The new instructional methodology was based on the theory of G. Polya which explained how people should solve problems (Polya, 1973). According to Polya, to be effective, a solution of any problem must begin from the analysis of its statement; after that a plan for solving this problem should be developed, and finally, this plan should be executed. Our preparatory training included analysis of the topic's statement and writing of the RP outline.

Analysis of the topic's statement. Students determined: 1. Three basic independent key-concepts in the topic's statement, 2. Semantic content of key-concepts, 3. Hierarchy of key-concepts. A fragment of this analysis' results pertaining the key-concept *Theoretical Approaches* is shown in Figure 8. When the topic's key-concepts were identified, the content of each was found, and their hierarchy in the statement was determined, the learners were required to write the research paper outline (Reamy, 2016).

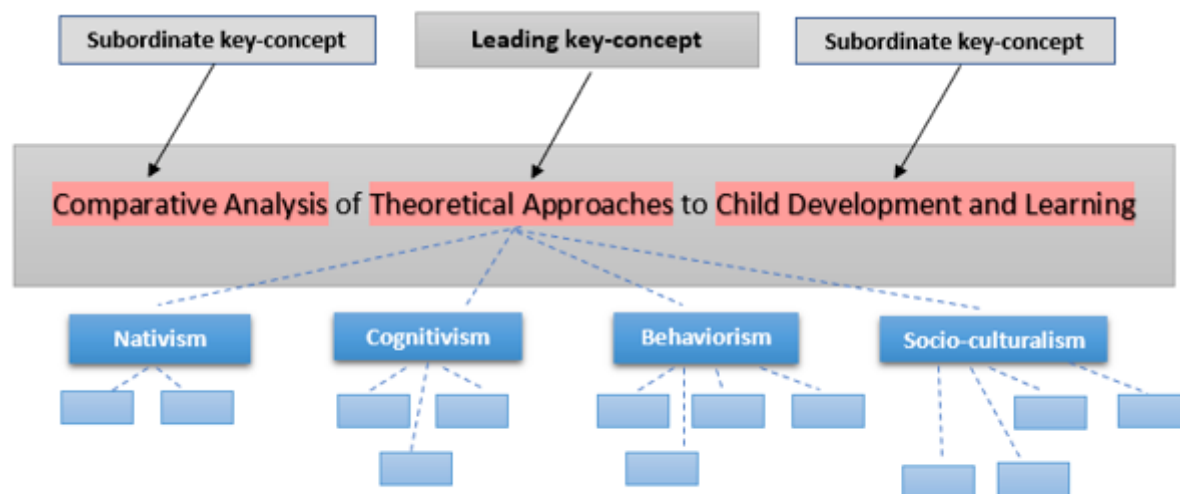


Figure 8. Results of analysis of the topic's statement (fragment)

Writing the *RP* outline. According to a common definition, “an outline is used to present main points (in sentences) or topics (terms) of a given subject” (Outline, 2018). Research paper outline done in full sentences gives a very accurate picture of what the students' final paper will be about (How to Make an Outline, 2005). An effective outline is a reliable indicator of a task's understanding and a subject's knowledge.

The main criterion for evaluating the outlines was the quality of the comparative analysis described in them. Accordingly, all submitted outlines were divided into four categories. They were the outlines in which a comparative analysis: was not done at all (category 1), was done superficially and cursory (category 2), was done in detail and in-depth (category 3). Non-submitted outlines made up an additional category (category 4). The distribution of the outlines between categories is illustrated in Figure 9. The numbers of *RPs* in categories are normalized and represented in percentages.

The three most significant results are the following:

1. The most populated category in both years was constituted by the outlines in which comparative analysis of theoretical approaches was included (on average 94.5%);
2. Most outlines were done in full sentences (on average 65.5%);
3. The distribution of the outlines between categories appeared consistent from one year to the next. The similarity of the graphic compositions for different years indicated the reliability of the results.

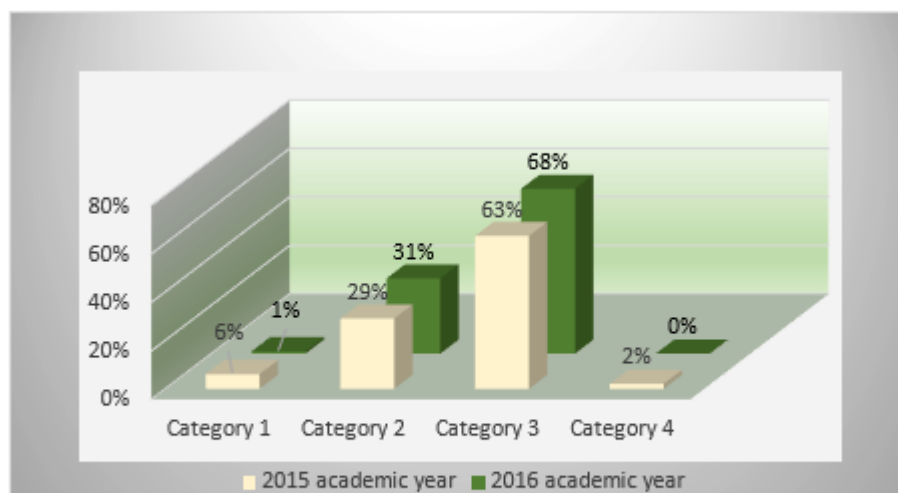


Figure 9. Distribution of the students' *RP* outlines across categories (based on the quality of descriptions) and years (2015-2016).

Discussion

At the Journalism department of Moscow State University, the students solved different in genres, but methodically similar tasks: “find errors in someone else's solution and offer your own, better option.” The first part of the task required mainly analytical skills, the second part – mainly the synthesizing skills of processing information. The second part of the assignment was fulfilled by only 5% of students which solved the task “Titling a note” and 30% of those which solved the task “Drawing up an annotation”. This indicates insufficiently developed skills to synthesize information in most students of investigated population. Even the first part of the assignment was completed only if it was small in volume. This allows the authors to assume an insufficient preparation of investigated population of students-journalists for solving the tasks proposed in the course and students' information incompetence.

In the American University, for successful completion of the assignment “Writing a Research Paper”, the graduate students lacked the same cognitive skills. In 2014, only 14% of learners who were taking the course Child Development and Learning in Cultural Context succeeded competently conduct a comparative analysis of theoretical approaches to child development. However, in 2015-2016, having passed a special training prepared by the instructor within the framework of this course, 85% of students accomplished this task when creating the paper outlines.

Analysis of the mistakes made by students in the performance of assignments allowed the authors to examine the features of the cognitive activity of students. The inability to compare two theories (in the research paper task) indicates underdeveloped skills of analysis and synthesis, problems of formal-logical nature. The inability to distinguish the important from the minor when searching and selecting data from electronic libraries (in the titling task), the tendency to use words with uncertain and vague semantics (in the annotation task), and, most importantly, the inability to find in the text indicators of concepts (in all the three tasks), – all this points to underdeveloped skills to operate with meanings, to problems of semantic nature.

The latter result is of especial scientific interest – due to insufficient research. Although, recently it was confirmed in the study of the students' comprehension of a fiction story. Participants of that study had difficulties in understanding the semantic structure of the fiction story's text (Toom, 2015).

This feature of our university students' cognitive activity can be called *fuzzy thinking*. This means that they fail to distinguish important from unimportant, paramount from minor. Their understanding of the reading's content is flat, there are no reliefs in it. As Gestalt psychologists would say, there are no figures on the background for them: everything is either a solid figure or a solid background. In such students' mentality, many different concepts merge into one undifferentiated, confused picture. The authors suggest that a new instructional methodology is needed to teach young people a culture of perception and understanding of textual information.

Conclusions

This article presents the studies of authors belonging to different cultures and different fields of knowledge. One of the authors works in Russia, the other – in USA. One is a philologist, the other is a psychologist. One of the authors teaches exclusively in the classroom, the other – only online, and the tasks solved by their students in New York and Moscow were different. However, their results turned out to be surprisingly similar.

The university's students specializing in journalism and education in both undergraduate and graduate levels demonstrated weak skills of analyzing and synthesizing the texts. They experienced difficulties when they were working with large flows of information, which is an indisputable indicator of their information incompetence. Moreover, for many learners it was difficult to identify the key words / phrases / fragments in the texts that is, to operate with meanings. Therefore, such students had no full-fledged understanding of the semantic aspect of information. The authors called this phenomenon "fuzzy thinking." It deserves a thorough study.

However, the authors also showed that improvement of instructional methodology may lead to a significant improvement in the quality of the students' work. Therefore, both learners' various cognitive skills and information competence developed. To make it happen, special trainings are needed. One of such methods based on an application of the outstanding educational theory by G. Polya was demonstrated in this work.

The authors concluded that the educators' efforts should be aimed at teaching our students how to work with texts academically and professionally. It makes sense to begin such teaching not in bachelor's or master's programs of the universities, but much earlier. In many ways, it depends on us, today's educators, whether the younger generations will become information competent specialists.

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Gamification as a Way to Reduce the Operating Method at Engineering Classes

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

As a result of the low grades found by the university students of engineering, the teaching staff of the second year of the Degree in Environmental Sciences, in the Faculty of Biological and Environmental Sciences of the University of León, proposes a plan of action on the students. The proposal goes in order to work on two aspects that are considered as vital when dealing with these type of engineering students. On the one hand it is proposed gamification as a way to reduce the stress with which students deal at university classes and ,on the other hand, it reduces the operative character with which the students try (in the wrong way in the judgment of the teaching staff) to solve the engineering problems raised in the cited subject. In this way, it was introduced a new concept for resolving the conventional engineering problems based in a game (for the incorporation of the gamification and produce a reduction of the stress). This game consists in to solve a problem without initial dates. The students have to obtain the dates choosing between several dates (some of them are no necessary for solving it) changing points for the dates. The objective is to know if this methodology improve the satisfaction of the students and their results in the subject. Then, with the present work, it has been shown statistically (t-Test of equality of means proceedings) that both actions improve both, satisfaction and results if we compare with a control statistically similar group.

Keywords: Academic stress, engineering problems, operativism, gamification

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1. Introduction

University tutors usually consider that the stress of engineering students during learning period at University is not an important problem for them. However, current literature stated that university success could be improved if stress was considered during the learning period.

Previous experiences indicate that almost 75 % of our engineering students suffer anxiety, fear and stress during the learning process at University and, in the same way, all the researches of our staff group consider that this situation is far away to be a good situation for the health of the students, and, therefore, for obtaining good academic results.

Therefore, the question that we have to consider is:

Is it possible to reduce the stress of our students without the loss of academic rigour? Gamification is known as the process of game-thinking and game mechanics to engage users and solve problems (Zichermann & Cunningham, 2011). In this way, any game implicit in the concept of gamification must not only influence the psychological and social behaviour of the player. However, it must also serve to help the player to achieve some answers to certain problems, in such a way that the players, the more they play, the more time they want to dedicate to the game by increasing their comfort and the number of responses found (Kapp, 2012).

In addition, the second question to consider is if we introduce reducing stress factors in classrooms, can we improve our students capacities and labor skills?

In this sense, we are talking now about to improve the capacities and labor skills of our students reducing their operating method: we want thinking students and not mimic or simple operator students.

Johan Hizinga (1872-1945) was a Dutch philosopher and he was one of the first persons who worked in a pioneer project about the influence of the game in education process. In his book *Homo Ludens* (1938), he explained the influence of the game in the brain process of the players.

In this way, when we introduce gamification and learning based games we can improve the learning process of our students, reducing, at the same time, the common stress situations present in higher education.

It is important to know the difference between Game based Learning and Gamification videogames (Hamari & Koivisto, 2013).

Game based learning describes an approach to teaching where students explore relevant aspect of games in a learning context designed by teachers. Teachers and students collaborate in order to add depth and perspective to the experience of playing the game. Within an effective game-based learning environment, we work toward a goal, choosing actions and experiencing the consequences of those actions along the way. This keeps us to practice behaviors and thought processes that we can easily transfer from the simulated environment to real life.

Gamification is a different type of learning experience. Gamification takes game elements (such as points, badges, leaderboards, competition, achievements) and applies them to a non-game setting. It has the potential to turn routine, simple task into refreshing, motivating and mainly, reduce the stress situations in the engineering university class.

Although in our research group, we worked with both concepts, but in this paper, we are going to speak only about Gamification Learning, and we are going to introduce this concept in engineering classes by a free Application for Smartphones, this is to say, by the use of ICT.

Although there are many experiences of the use of ICT in the university classroom (Overland & Mindt, 2002), the use of the same by the student is conditioned to the educational approach given by the teacher, differentiating, according to (Galvis, Galvis, & Giraldo, 2015), between ICTs that support transmission, ICTs that support active learning and ICTs that facilitate interaction. However, the literature does not consider the existence of an ICT that involves a profound change in the way of solving problems by engineering students, reducing their operational procedure to make way for a much more rational model and close to their future work. (de Sandoval & de Cudmani, 1992).

2. Objectives

2.1. General objective

The main goal of this research is to destroy the pure operating method used for students to solve engineering problems. Our initial hypothesis is that we can obtain an improvement of engineering students academic results by reducing stress conditions using a gamification models based in PWD (Problems without Data). For that, we have to specific objectives.

2.2. Specific objectives

- a) Design a gamification model based in PWD (problems without dates) that allows to our engineering students reduce learning stress conditions and mimic or operating conditions to resolve engineering problems, improving, in the same sense, the thinking conditions of learning.
- b) Verify, in statistical terms, that gamification model based in PWD (problems without data) meet with the stated purposes

3. Methodology and methods

3.1. Statistic population

In this research, we worked with 67 students who studied the Environmental Science Degree at University of León (Spain). All of them were studying one subject called Principles of Environmental Engineering during the academic course 2016-17. They are scientific students, but this subject is an engineering subject, so the capacities that they have to acquire are different to the capacities of other subjects of the Degree.

Without considerer any variable (it is to say, randomly), the students were divided in two groups. In one side, students who followed Gamification Model based in PWD by the utilization of our original application for smartphones called BINQUI (acronym of

Principles of Chemical Engineering in Spanish); in the other hand, students who don't followed that model and they utilized the classical way for teaching in engineering classes at University (with blackboard).

3.2. Methodology

Gamification model based in PWD (problems without data) was implement with a free App available for both, IOS and Android. I invite you to download it and, in this way, you can analyse how it runs. In essence, students create a profile in the app and, after that; they can observe that the app has set of problems placed in increasing order of difficulty.

These problems have no data inside the text of the problem, and, for that reason, students have to "buy" (not with money, obviously, they buy data through spending points).

There are two important things for a better understand of gamification process:

- Not all data are necessary to solve a problem
- A same problem can be solved in various ways, spending more or less points.

In this way, the student who resolve spending the fewest quantity of points will be the winner, and the App shows a ranking including time to solve it.

Students will be fully aware, from the first day of class, of their participation in the proposed dynamic as well as the objectives pursued. The breakdown of operating method followed by students when they solve certain questions will be encouraged.

In resume, the main idea that we have to learn is that one of the most important capacity for them is to know what dates they need for solving an engineering problem. In the first place, it could happen that the students react surprised to this proposal. Likewise, ambiguity must be avoided in order to students can focus on the correct resolution of the problem. Ambiguity, or, in other words, open situations, is an essential characteristic of genuinely problematic situations, being one of the fundamental tasks of scientific work to limit the open problems and impose simplifying conditions. In addition, it is the best way to simulate the labour conditions out of the university environment. Another setback that can be pointed to this type of dynamics refers to the possibility of eliminating the data and precisions of the usual problem definitions and constructing more open problems able to eliminate a resolution according to the characteristics of the scientific work. In this regard, the experience of the teachers involved in the activity has made possible to verify that the usual problem definitions are easily "translatable" to general problems statements without data.

3.3. Measuring instruments

In order to know if the targets have been achieved, it will be necessary to collect a series of data that allow the results evaluation of the proposed activity. In this way, to assess the degree of achievement, the use or non-use of the App will be evaluated as an independent variable (considering if it has been downloaded or not). A relation between this variable and the student academic result of the student will be sought (evaluating both the subject pass and the final grade).

3.4. Reliability and validity of the measuring instruments

This paragraph encompassed an explanation about how the different variables have been measured to guarantee their validity and reliability.

a) **BINQUI.** It means if the student used the App named as “BINQUI” for the exam preparation. The value of this variable is collected directly from the interface of the App Manager”, which guarantees the validity (measures what you want to measure) and reliability (accuracy of measurement). “Use of BINQUI” is called by letter B and “Do not use of BINQUI” is called by letters NB.

This is our independent variable.

b) **Stress of our students after the research.** Quantitative variable (on a scale from zero to ten) of the final stress of the student (after the research). We have measured this value with the Hamilton Anxiety Scale (Hamilton; Xiao-Wei et al. 2018) and it was called as Y2. This variable is a dependent variable.

c) **Academic results of our engineering students.** . It is categorical variable related to the mark obtained by the student in the subject. It is a quantitative variable (on a scale from zero to seven) of the result of the student (after the research). We have called it as Y3.

3.5. Analysis of critical points and risks in the achievement of the goals

The realisation of the project implies a risk in terms of acceptance by the students, since it represents a radical change in the way of approaching the study of their university classes. The critical points referred to the students are listed below:

- Lack of confidence in the teacher.
- Absence of participation.
- Lack of seriousness.
- Lack of maturity of certain students.
- Other aspect not considered

Therefore, the development of the proposed tasks is related to a series of risks. Once these risks have been identified, strategies that minimize their impact or even prevent their appearance can be defined. The management of the work carried out has been based on the PDCA continuous improvement cycle and the UNE 166002 R & D Management Standard.

For the critical points identification, periodic meetings were established between the teacher and a representation of the students in order to know both opinions about the development of the activities. Likewise, to resolve the identified critical points, actions are proposed to be carried out in order to solve any problems.

4. Results and discussion

A free and without advertising App has been created. It was called “BINQUI”. Each student, after download and log in, has 200 starting points. A series of PWD (Problems without Data inside the text) related to the subject linked to this project will be presented. They must decide, among all the data offered by the application, what are necessary to solve them. The acquisition will be related to a decreasing in the students points (the more data they request, the more points they will spend). Once the problem will be solved, a ranking of players for that exercise can be

accessed. The first position will be for the student who, having solved the exercise has spent less points. It should be noted that in equality of points, the winner will be the one that has taken less time. A series of the App screenshots are depicted in Figure 1.

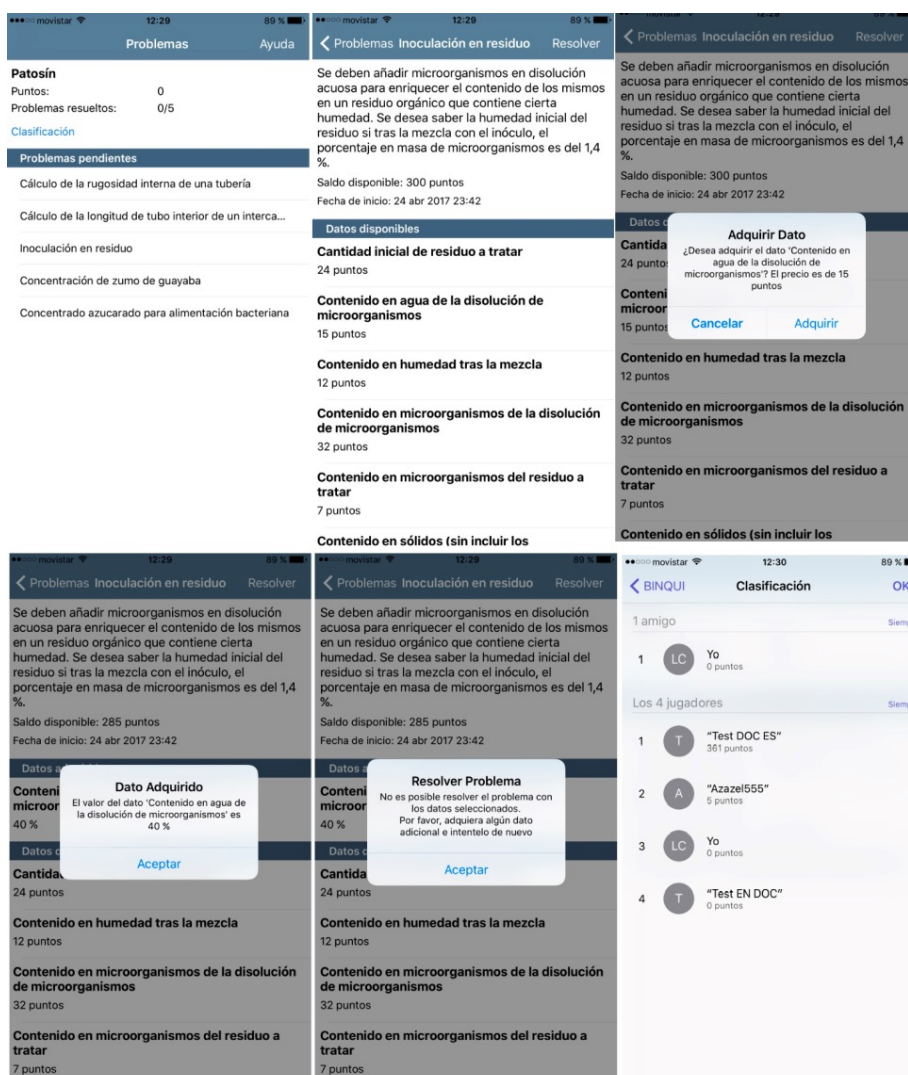


Figure 1. Screenshots of the original application that allows the use of Gamification model based in PWD

It is necessary to clarify that App use has been voluntary. This fact allowed the authors to form two students groups according if the employed or not the App. The variables used in this work were the shown in Table 1.

Table 1. Independent and dependent variables used in the research

Variable	Name of the variable	Escale	Measurement range
Use of BINQUI (independent variable)	BINQUI	Nominal	0: no 1: yes
Stress of the student after the research	Y2	Quantitative	0-10
Academic Results of our students	Y3	Quantitative	0-7

4.1. Statistic descriptive results

Table 2 shows the statistic descriptive results of the variable called Y2 obtained by SPSS statistic program for both: the group of the students that did not followed the proposal methodology (Y2NB) and the group of the students that followed de gamification model based in PWD with the use of BINQUI (Y2B).

Table 2. Statistic descriptive results of Y2 (Stress of the students after the research)

Variable Y2 (Stress after research)		Statistic	Std. Error	
Y2NB	Mean	5.9767	0.2986	
	95% Confidence interval for mean	Lower bound	5.3742	
		Upper boun	6.5793	
	Median	6.0000		
	Variance	3.8330		
	Std. Desviation	1.9578		
	Range	9.0000		
	Kurtosis	0.5370	0.7090	
Y2B	Mean	3.4583	0.2480	
	95% Confidence interval for mean	Lower bound	2.9452	
		Upper boun	3.9714	
	Median	4.0000		
	Variance	1.4760		
	Std. Desviation	1.2151		
	Range	1.0000		
	Kurtosis	-0.4350	0.9180	

We can observe that the stress of the students that did not followed the gamification model based in PWD was 5.98, but if BINQUI has been used this variable takes a value of 3.46, almost 1.5 points lower. In this sense, we can verify that the stress situation of our students has been reduces when they have been used BINQUI in their learning process. These results are agree with results showed in current literature about the use of gamification in learning process (Leah S., et al 2017; Joana D. 2017; Chris P., et al 2016).

Table 3 shows the statistic descriptive results of the variable called Y3 obtained by SPSS statistic program for both: the group of the students that did not followed the proposal methodology (Y3NB) and the group of the students that followed de gamification model based in PWD with the use of BINQUI (Y3B).

We can observe that the mean values if BINQUI was not used is 1.67 but if BINQUI has been used this value is 3.19. This is a very important difference and we can verify, with these dates, that academic results of the students have been improved.

Table 3. Statistic descriptive results of Y3 (Academic results of our students after the research)

Variable Y3 (Academic results)		Statistic	Std. Error
Y3NB	Mean	1.6653	0.1687
	95% Confidence interval for mean	Lower bound	1.3250
		Upper bound	2.0057
	Median	1.5300	
	Variance	1.2230	
	Std. Desviation	1.1059	
	Range	4.1000	
	Kurtosis	-0.6140	0.3358
Y3B	Mean	3.1896	0.3358
	95% Confidence interval for mean	Lower bound	2.4949
		Upper bound	3.8843
	Median	3.2800	
	Variance	2.7070	
	Std. Desviation	1.6452	
	Range	6.5000	
	Kurtosis	-0.4520	0.9180

4.2. Test of equality of means for Y3

If we analyze the mean values between the use or not of BINQUI in the different variables, we had to verify the parametric conditions that t-Test considers:

- Sample size greater than 20
- Variables have to be quantitative variables
- We will have in consideration the equality of Variances
- The Normal distribution of the variables in verified using normality test Kolmogorov Smirnov way and Shapiro Wilk way, with Lilliefors Significance Correction.

For all t-Test we have the next conditions:

- Setting up the null (H0) and alternative (H1) hypotheses. Null hypothesis H0: the means of both considered group are similar in statistically terms; alternative hypothesis H1: the means of both considered group are not similar in statistically terms.

Justified choice of the statistical test. Considered variables are quantitative variables and they verify parametric conditions, so the most suitable statistical test to be considered is the t-Test. Moreover, SPSS provides the possibility of carrying out some symmetric and directional trials based on this parameter.

Significance level (α). We have worked with an error rate of 0.05.

Definition of the sampling distribution. The sampling distribution is a probability distribution consisting of infinite values of a t-Test distribution, which is obtained from infinite random samples of the same population, all of them having the same sample size than the one of the research problem.

Rejection region or critical region. The rejection region of H_0 is a part of the sampling distribution made up by the values whose probability is lower than or equal to 0.05 whenever the null hypothesis is true.

In this sense, table 4 shows the results of t Test of equality of means of Y3 (academic results of our students)

Table 4. t-Test equality of means for Y3

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2 tailed)	Mean Difference	Std. Error Difference	95 % Confidence Interval of the Difference	
									Lower	Upper
Y3	Equal variances assumed	5.398	0.023	-4.525	65	0.00	-1.5242	0.3369	-2.1970	-0.8515
	Equal variances not assumed			-4.056	34.850	0.00	-1.5242	0.3758	-2.2872	-0.7612

When we do the t-Test for equality of means with variable Y3 (academic results of our students), we cannot accept the Equality of Variances (signification >0.05) with a signification of 5 %. In that case, the mean of both groups, with 5 % of signification again, is different using statistical terms. That is to say that the use of BINQUI (gamification model based in PWD (problems without dates) improve the academic results of our environmental engineering students.

5. Conclusions

The main conclusion of this research is that the use of gamification model based in problems without dates (PWD) improve academic results of our engineering students reducing learning stress conditions. In this sense, we have obtained the answer for the two specific objectives considered.

On the one hand, we have designed an App for smartphones that introduce two concepts to our students: gamification (similar to no stress) and reduction to the operative wrong model for solving problems; on the other hand, we have verified, in statistical terms, the conclusions of this research.

7. Acknowledgements

We want to be pleasure with the programme PAGID from University of León that subsidized this research.

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***Assessing the Impact of Meritocracy on the Singapore Education System:
Evaluating Outcomes, Averting Threats***

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

The Republic of Singapore is a small multiracial, multicultural and multi-religious island-nation made up of various ethnic communities. While the Malays are recognised as the country's indigenous group, they currently make up less than 14 per cent of the total population. The Chinese, being the dominant group, form 75 per cent of the citizenry while the Indians, at 8 per cent, are represented as another minority group. The rest of the population comprises various ethnicities categorised as "Others". Because of its diversity, the government has made clear its prerogative on developing the nation's social cohesion and identity through education. This is done by imposing a uniform curriculum for all types of institutions, using locally-oriented textbooks, and instilling in its students a sense of common purpose and direction. Over time, such enforcement of "uniformity" across all Singapore schools' curricula has led to the convergence towards an extreme belief in meritocracy; where students' abilities are mainly differentiated based on results attained in high-stakes examinations. Critics have highlighted several negative outcomes resulting from the absolute "buy-in" of meritocracy. For one, socio-emotional learning is made of secondary importance to academic teaching. As a result, the nation is at risk of developing students who may be "book smart" but lack the sensibility to understand, empathize and respect. Others point to the weakness of meritocracy in the way it fails to appropriately recognize the different "starting points" for every student's academic journey. This casts doubts on the chances of these pupils doing well in a completely meritocratic environment.

Keywords: Meritocracy, Multicultural, Literacy, Vernacular schools, Bilingual education, Uniform curriculum, Capability set

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1. Introduction

The Republic of Singapore is a small multiracial, multicultural and multi-religious island-nation made up of various ethnic communities. While the Malays are recognised as the country's indigenous group, they currently make up less than 14 per cent of the total population. The Chinese, being the dominant group, form 75 per cent of the citizenry while the Indians, at 8 per cent, are represented as another minority group. The rest of the population comprises various ethnicities categorised as "Others". Over the years, Singapore's education system has evolved and gained much recognition both locally as well as globally. Praises are showered as the nation-state's literacy rates rose from about 50 per cent in 1965 to more than 96 per cent by 2012 (Gopinathan, 2015, p. 90). This is accompanied by high levels of trust shown by stakeholders and parents (Mathews, 2017, p. 17). Similarly, Singapore students have consistently raised their performance at the international level, ranking high in global assessments like TIMSS, PISA, PIRLS and various International Olympiads. In addition, organisations such as the OECD have analysed and commended Singapore's education system. Guided by well-trained teachers and school leaders, Singapore's education system continues to enjoy high achievement rates.

1.1. Origins

As a former British colony, Singapore's modern-day education policy began with the founding of the Singapore Institution in 1823. The school was funded by the colonial masters to provide free education for the indigenous residents in their mother tongue. The move was to create a more structured and more easily managed society — rather than more noble ideals of social progress for the Malay inhabitants (Ong, 2008). At the time, the English language was not taught to the natives as the British believed that early training in the child's own language was an absolute necessity. In their eyes, the objective of the Malay-language based education was simply to make the indigenous inhabitants better fishermen and peasants.

The Chinese and Indians were however, largely left to their own devices when it came to establishing learning institutions of their own. As a result, these communities established schools that were privately funded. The Chinese, for instance, set up vernacular schools run by teachers recruited from China, using textbooks imported from their Mainland. Similar to the Malay and Indian institutions, these schools were initially limited to the primary level. English-medium schools on the other hand were typically established by Christian missionaries, additionally supported by the government and were opened to all children on a fee-paying basis.

Overall, of these publicly-funded institutions were free from government control until 1919, after which the British government implemented the Registration of School Ordinance. In these early days, the local Education system has been characterised as suffering from "benign neglect, ad hoc policy making and indifference to consequences" (ibid). This was until the Registration of School Ordinance came into effect in 1920 that it subsequently underwent a series of amendments and re-enacted as the 1957 Education Ordinance.

By the end of World War II in 1945, the local population had begun to develop a sense of belonging and patriotism that resulted in the British government initiating

changes to the education policy. To appease the population's awakening national fervour, the British government then declared free primary education for all races.

According to Ho and Gopinathan (1999), Singapore's education system today has its roots prior to 1965 when the nation achieved its independence. In 1956 for example, the *All-Party Report on Chinese Education* commissioned by the British-ruled Singapore government had included a proposal for an "equal and adequate" education system to meet the needs of all major ethnic groups in the country (Zhao & Liu, 2010, p. 241). Similarly, when Singapore was granted internal self-government in 1959 and the People's Action Party (PAP) subsequently voted into power, a policy statement was issued echoing this line of belief. The new government made it clear that its prerogative was the attainment of social cohesion and the development of a national identity for its citizens through education. PAP leaders saw an overriding need in working against the colonial legacy of communalism and ethnic division. The leaders began by introducing a Five-Year Plan that emphasised equal treatment of the four language streams of education. Nevertheless, in wanting to simultaneously recognise the nation's historical foundations and meet the perceived demands of the economy, Malay was made the National Language while emphasis was given to the teaching of Science and Technical subjects in schools (Tan, 2010).

By the time Singapore attained complete independence from the British in 1965, the re-elected PAP government made more concrete its plans to shape the education system for the young nation. It introduced a tripartite system of academic, vocational and technical schools, to support the country's fledgling economy. With the population's diversity, the government also saw the need to inculcate patriotism and national identity among school-going Singaporeans in order to develop a peaceful and productive multiracial, multicultural and multilingual society. This was done by putting together a uniform curriculum for all types of schools, using locally-oriented textbooks, and instilling in schools a sense of common purpose and direction.

Ethnic division was further mitigated with the introduction of bilingual education in 1966. English was made the main medium of instruction while the pupil's mother tongue was declared a Second Language but made a compulsory examinable subject at both the primary and secondary levels.

Today, the Singapore education system has evolved and diversified to include specialised government-run institutions, such as the Singapore Sports School and School of the Arts.

2. Evolution of Meritocracy as an Ideology

Regardless of any incremental changes, the government has remained steadfast in its enforcement of "uniformity" across all Singapore schools' curricula. The rationale underpinning this approach is for academic success to essentially be based on a student's merit and performance regardless of his or her race, religion or socio-economic background. In this sense, the meritocratic model recognises and rewards talent primarily based on academic achievement. This was outlined by Dr Aline Wong, then Senior Minister of State for Education (2000) who clarified that "In the 1960s and 70s, a series of educational reforms was undertaken to unify the standards, and set up a common education system." It has been maintained however, that the

government has over the years, shown some flexibility in allowing for the curriculum to be reviewed “to allow for differentiation to meet the needs of students with different talents and abilities” (Hodge, 2007).

Nevertheless, the view towards academic meritocracy as a bedrock for gauging competencies has remained uncompromising. In his 2010 National Day speech, the country’s Prime Minister clarified that, “The Singapore spirit is not based on a common race, language or religion. It is based on deeper things that we share: shared values like multi-racialism, meritocracy, or respect for every talent; shared loyalty and commitment to Singapore; shared responsibility for each other and pride in what we have done together...” (<https://www.pmo.gov.sg/newsroom/prime-minister-lee-hsien-loongs-national-day-rally-2010-speech-english>).

This deep belief in the value of commonality and uniformity has ultimately led to a convergence on the importance of meritocracy. Epitomised into an all-consuming ideology, the meritocratic model rationalises the government’s commitment towards recognising, cultivating and rewarding talent based on academic merit. Essentially, regardless of any other abilities that they might possess, students’ abilities are differentiated based only on results attained in high-stakes examinations.

2.1. Positive Outcomes

After more than 50 years since its inception, the proponents of the meritocratic approach have now, in their possession, a ‘showcase’ of successes that they can boast of. While differences in academic performance between ethnic groups remain, statistics have shown that the gap has narrowed considerably. Data reported in the McKinsey report shows that the performance of pupils in the Primary School Leaving Examination (PSLE) has improved for all ethnic groups, with Malay and Indian pupils showing the most marked improvement while Chinese students continued to perform consistently above the national average (Gopinathan, 2015, p. 14). In a speech presented in 2011, then Minister for Education Ng Eng Hen noted that in 1980, only a quarter of those aged 25-39 years had completed secondary school education and above. This jumped fourfold to 96% by 2010. Each succeeding generation, he said, has done better than their parents. Furthermore, 44% of those aged 25-39 years today have university education. What is impressive, he noted given the big attrition rates in the 1970s, is the ability of the current education system to both retain and enable students to complete a minimum 10 years of education, with a majority obtaining five O-levels. Also to note is the fact that significant numbers go on to post-secondary education. Over 75% of the cohort then proceeded to enrol in the next level of their studies. These significant figures signal that families recognise the value of credentials, and that further education and training in Singapore are showing benefits (Ng, 2011).

2.2. Conceptual Misalignments

With the passing of time unfortunately, the flaws of such meritocratic ideals are beginning to reveal themselves in significant ways. Critics have argued that while Singaporean students are achieving ever-higher grades in national examinations, “book smarts” have little relevance in the real world where a sense of equity and justice; underscored by the ability to understand, empathise and respect; are just as

necessary. While components of socio-emotional learning such as Character and Citizenship Education, Critical Thinking Skills and Pastoral Care already exist in the Singapore curriculum, these non-examinable subjects are, however unintentionally, regarded to be of lesser importance in classroom studies. The general perception among educators, and subsequently their pupils, is that these socio-emotional learning lessons are either “time-wasters” or government-initiated propaganda.

Over time, the prominence given to meritocratic ideals, reinforced by the inherent downplay of socio-emotional education, have lulled students into a “false consciousness” where issues such as the exclusion and marginalisation of minority groups are seen as a natural state of affairs. As clarified by Jost (1995), false consciousness pertains to “the holding of false beliefs... which thereby contribute to the disadvantaged position [of a group]” (p. 397).

To counter this phenomenon, proponents such as Ward and Mullender (1991) insist for a greater push to be made to empower all learners towards “a commitment to challenging and combating injustice and oppression,” hence moving closer towards creating a progressive yet conciliatory community (p. 22). This is seen to be an increasingly necessary approach in the current Singaporean society, where terms such as “Chinese privilege” and “majority rules” are euphemisms often expressed by the disgruntled minority. Chua (1995), for example, has written extensively on what he terms the “communitarian” approach adopted by the Chinese-dominated Singapore government. Communitarianism is based on what is perceived to be the “shared value” that is embraced by all racial and cultural groups, and is considered to be the cultural essence of Asian societies. He insists however, that “in reality, the communitarian ideology is indubitably anti-liberal as collective interests are placed above individual ones” (p. 29). Others have added the situation may even be worst as, “collective interests” in the Singapore context typically translates to beliefs that advocate the needs of the dominant group over that of minority welfare. Minority ethnic groups with weak political representation, such as the Malays become vulnerable to the whims of these “collective interests”. In most cases, it ends up with the community sacrificing their needs in deference to “the greater good” (Juhari, 2011). The concept of Shared Values formulated in 1988 by the country’s leaders illustrates this. Championed as values for Singaporeans to live by, the messages underpinning each value are extolled to have rooted from ‘Asian’ beliefs. Critics however, highlight that such values are in fact appropriated from ‘selected’ Confucian ethics that idealised economic processes. These beliefs in turn, serve to perpetuate ruling-class interests by securing compliance from the populace. (Chong, 2002, p. 402)

Responding to such criticisms, the government insists that demands for such “intensive” types of socio-emotional education cannot be met as the approach will not reconcile with the maintenance of the nation’s “shared values”. Unfortunately, to the most extreme hardliner, the current pedagogy is one that forcefully emphasises benefits that favour the dominant ethnic group while marginalising the minority communities.

2.3. Unintended Outcomes

Proponents of the meritocratic model have given their assurance that quality education will be made available for students of all levels of academic aptitude. Nevertheless, placement of students into the different learning tracks itself has become an issue of controversy.

For example, upon their entry into the secondary level, students are streamed into the various learning tracks depending on their Primary School Leaving Examination (PSLE) results. In line with the meritocratic approach, posting is based on academic achievement with the different curricula emphases designed to match each student's learning needs, abilities and interests. For instance, highest scoring students who form the top 10% of their secondary cohort are channelled into the Special stream and are provided with enhanced learning modules that allow for more flexibility and a less structured study programme. These students are enrolled into the Integrated Program which exempts them from taking the 'O' level examinations at the end of their 4-year course of study. They will however be automatically promoted to their next level of study. In this way, these high achieving pupils will be able to live up to their potential having been immersed in learning experiences which are broader in nature yet without the need to be tied to studies which focus only towards passing their final examinations. The long-term expectation is for these students to advance their studies beyond that of the basic tertiary credentials. Of the remainder in the secondary level cohort, 50% will qualify for a place in the Express track. This may lead first to junior college or the polytechnics and for some who excel, to university studies. The remaining 40% are considered lower achieving students in the cohort. Of these, half are expected to undertake the Normal (Academic) track which normally leads to a polytechnic diploma while the rest will fall into the Normal (Technical) stream which, upon completion, enables them to attain a skills-based qualification derived from the Institutes of Technical Education ("The Downsides to Singapore's education system: streaming, stress and suicides," 2017)

According to statistics published by Singapore's MOE, the government's recurrent expenditure per secondary school student rose from SGD 5,614 in the 2002/03 academic year to SGD 13,931 in the 2016/17 academic year (Education Digest, 2017). An argument has thus be made that at the basic level, the government has shown commitment to an increasing yet equal allocation of resources endowed to all local students. In short, no government learning institutions have been deprived of the resources required for effective teaching and learning. Critics however argue that regardless of this, inequality and marginalisation still occur at Singapore schools because of the value-added resources made privy to those at the higher-end learning tracks. It was pointed out that schools catering to top-tier students also receive additional funding by way of per capita grants and scholarships so as to be able to participate in specialised programs (MOE, 2018). For instance, one of its top secondary schools, Anglo-Chinese School (Independent), has been able to offer various enrichment programmes designed to "stretch and develop its high ability learners". These include yearly enrichment camps to provide such students with out-of-classroom learning activities as well as an annual symposium where students role-play politicians and diplomats in a United Nations or Singapore Parliamentary setting. (Anglo-Chinese School (Independent), 2018). In addition, it was reported that. "The gap between Singapore's top-end neighbourhood schools has over the decades

widened partly as a result of factors like bigger and better facilities built with alumni funds” (Davie, 2014). The implication is that such institutions are further advantaged by being recipients of additional funding endowed by their already well-established Old Students Associations.

Research has shown that students with vast access to economic and social capital are more likely to optimise the opportunities provided for them. Such elements, for instance, can be found in the kind of exposure and interactions made available via the enrichment activities organised for the IP students but not for the rest in the secondary level cohort. In addition, students from less privileged family backgrounds will also miss out on the perks of having cultural capital. They often have no one to advise them on the steps to take as most of their older relations tend not to go as far in the education ladder. As such, these students have to rely on themselves to look for sources of information and motivation. Failing to access these, they inevitably stumble more along the way resulting in greater stress faced in their studies. The lack of information due to the limited cultural capital they have makes them vulnerable to succumbing to less desirable paths which they would have strived to avoid had they fully understood the impacts these would have on their future. Marginalisation occurs when these learners are not provided with the same level of access to the various forms of capital thus resulting in their loss of prospects for a higher level of education (Zhang, 2014).

Another main criticism of the meritocracy-based education system is the way it takes its toll on the achievement levels of students from the minority groups in the country. This is especially so for students from the minority Malay community, a group over-represented at the lower end of the income spectrum. The fallacy of meritocracy, in the context of Singapore’s education system, lies in the fact that it fails to recognise the variability of “starting points” for every child’s academic journey and how these will differ due to the individual’s circumstances in life. While the previous issue of high dropout rates for Malay students at the primary level have been resolved with the introduction of the Compulsory Education Legislation, statistics from the Ministry of Education nevertheless indicate that the would-be dropouts are merely ‘pushed up’ to occupy the lower rungs of the secondary school cohort (Ministry of Education Statistics Digest, 2017). As such, at the end of their secondary school education, Malay students continue to experience higher levels of underachievement. For instance, results of the ‘O’ level examinations reflect that Malay students generally fared lower than the other ethnic groups in the core subjects of English, Science and Mathematics. The gap for Mathematics, in fact, widened to more than twenty percentage points in 2016 (ibid).

This is despite studies which revealed Malays to be as conscious to the fact that educational attainment is the best medium for upward social mobility. A 2016 IPS survey on Parents and Education for instance indicate that compared to those from the other ethnic groups in the country, Malay parents scored the highest levels of stress on issues relating to them not being able to help their child with his or her studies because the syllabus is too challenging for them. This subsequently increases their fear that their child will lose out in the education system in the long run (Mathews, 2017).

2.4. Assistance, Resources & Shortcomings

Acknowledging the mounting criticism of the meritocratic model, the Singapore government has undertaken measures to reduce what is seen to be a growing aspirational divide reflecting the widening socio-economic differences in the country. The call is for a change in educational approach where equality of opportunity should now be tempered with genuine measures to create greater equity of outcome. Amartya Sen uses the term ‘capability set’ when denoting an individual’s alternative combinations of ‘functionings’ required to achieve his or her life’s objectives (2000, p. 75). On this basis, fairness in outcomes can be achieved by supplementing the limited ‘capability sets’ of those who are less privileged. In the case of marginalised students in Singapore, this is done by enhancing the options available to pupils who face limited choices in how they want to live their lives. In this regard, Singapore’s MOE has put in place several initiatives in an attempt to increase the capability sets of these marginalised students. Several of these can be found in the following examples. Unfortunately, these programmes tend to also develop their own set of shortcomings.

2.4.1. Financial assistance

Students from less well-off families are identified and enrolled in the many financial assistance schemes made available to them. These range from daily issued school allowances to the yearly disbursement of education grants to deserving pupils. The Straits Times School Pocket Money Fund for example was started in 2000 as a community project initiated by The Straits Times, the country’s newspaper publication to provide pocket money to children from low-income families to help them through school. The children can use the money for school-related expenses such as buying a meal during recess, paying for transport or using it to meet other schooling needs. The financial help is expected to ease the burden of the many parents who are already struggling to feed their families on their meagre incomes. The Fund currently supports more than 10,000 children and youth a year by providing them with monthly school pocket money (“School Pocket Money Fund,” n.d.).

Similarly, all Singaporean students in government and government-aided learning institutions are eligible for the Edusave Merit Bursary if they are within the top 25% of their cohort in terms of academic performance, have demonstrated good conduct, and whose gross monthly household income does not exceed SGD 6,900 (or per capita income does not exceed SGD 1,725). The values of these yearly bursaries range from \$200 for students in Primary 1 to 3, to \$500 for those studying in the Institutes of Technical Education or specialised schools/Polytechnics (“Edusave Merit Bursary,” n.d.).

Nevertheless, while such forms of financial assistance have provided invaluable assistance to these less well-off pupils, they only function as temporary ‘band aids’ in providing solutions to the diversity of issues that they face in their lives. Critics are arguing for a more holistic approach where there can be integration and consolidation of services among community organizations serving to alleviate the plight of these individuals. An example has been made of how community programmes are often seen to work in silos or have become oblivious to the ways of how one another operates in providing help to the families in need. Specifically, while the family unit accepts the best possible assistance rendered by the various relevant agencies, the aid

that they receive tends not to complement or synergise. For example, the school delinquent is counselled and made to undergo behaviour management programmes but little is done to ensure that the family be made more supportive of the child's education and rehabilitation. Thus even if financial assistance is made available to the family, without proper guidance and supervision, the needed emotional support for the student may be lacking. In the end, there can be no win-win situation as the financial intervention lacks the holistic approach (Juhari, 2016).

2.4.2. Assistance from Non-Government Organisations (NGOs)

Through its promotion of the 'Many Helping Hands' approach, the government adopts a strategy where it empowers NGOs by supporting efforts fronted by ethnic-based self-help groups or social-welfare organisations. For instance, it provided assistance to Yayasan MENDAKI, a Malay Self-Help Group when it pioneered the establishment of the MENDAKI Tuition Scheme (MTS). Initiated in 1982, the nationwide programme aims to provide quality tuition at affordable rates so as to help students from the Malay community attain better results in their school and national examinations. To date, about 200,000 Malay students have benefited from the quality and affordable tuition. With highly qualified tutors, students are engaged in a positive and enriching environment during lessons. MTS is aligned to the Ministry Of Education's curriculum and provides additional developmental activities. Weekend classes are conducted in more than 50 schools around the island ("Mendaki Tuition Scheme", n.d.).

"The Many Helping Hands" approach has been lauded for providing NGOs with the 'space' and opportunity to use their creativity in implementing their initiatives. However, there has also been criticism in the way assistance from the government is only rendered at the "sidelines". In short, political appointment holders are free of blame should there be flaws or failure with any of these programmes. The "Many Helping Hands" approach thus protects and relieves political leaders from taking on the full commitment and responsibility of welfare provision, seen to be the burden of any nationally-elected representative.

2.4.3. Direct School Admission (DSA) programme

Introduced in 2004, the DSA programme is an admission exercise that allows participating secondary schools to select some Primary Six students for admission into their institutions at the Secondary One level before the release of the PSLE results. These selections are aimed at recognising and admitting students into secondary schools based on talents in areas such as sports and arts instead of general academic ability ("Direct School Admission Programme," n.d.). According to Indranee Rajah, Second Minister for Education, "The programme's primary objective was to ensure that students who are less well-resourced, less well-advantaged, still have the opportunity to apply, and to make it an available platform for them" (Mokhtar, 2018). Some examples of talents which selected secondary schools keep a look out for include performance arts such as ballet as well as for sports such as rugby, hockey, swimming and soccer.

Unfortunately, this initiative at most only advantages a small subset of best qualified low-income students. Affluent parents, in fact have been "gaming" the system by

sending their children to preparatory schools to give them an edge in a bid to secure a place in top schools. Such practices led Denise Phua, Member of Parliament for Jalan Besar Group Representation Constituency, to call it an “open secret” that DSA has benefited children from wealthier households (ibid).

3. Conclusion

To conclude, while the image of Singapore’s education system is rosy in the eyes of the international community, it is not without its problems. Issues of exclusion and marginalisation must continually be addressed and resolved before they trigger social discontent. Appropriate counter-measures are needed to balance educational excellence with equity. This calls for a change in educational approach in which meritocracy; which calls for equality of opportunity; is continuously tempered with genuine measures to create fairness of outcomes for all students.

Appendices

- Many Helping Hands – An approach where the Singapore Government works closely with and through community organisations to provide help to the needy.
- Social Capital – Refers to the value of social networks that serves to bond groups of similar people or to bridge groups of diverse people, using norms of reciprocity as a benchmark.
- Education Ordinance – A set of legal provisions relating to the registration of schools, conduct of managers and teachers, as well as for the roles and responsibilities of school management committees.
- Compulsory Education Legislation - An Act of Parliament which makes mandatory a period of education for all citizens of that country.
- Cultural Capital – A set of social assets possessed by an individual such as education and intellect which functions to promote his or her social mobility so as to achieve a higher social status in society.
- TIMSS – The Trends in International Mathematics and Science Study (TIMSS) is a series of international assessments of the mathematics and science knowledge of students around the world.
- PISA – The Programme for International Student Assessment (PISA) is a triennial international survey that aims to evaluate education systems worldwide by testing the skills and knowledge of 15-year-old students.
- PIRLS – The Progress in International Reading Literacy Study (PIRLS) is an international study of reading achievement of fourth graders.
- International Olympiads – The International Olympiads are a group of worldwide annual competitions of various learning disciplines.
- OECD – The Organisation for Economic Co-operation and Development (OECD) aims to promote policies that will improve the economic and social well-being of people around the world.

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Literacy Learning Program using 3D Kanji Models for Children with Developmental Dyslexia

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

A unique program for the 3D representation of letters (including stroke order and structure) has been developed to support intelligible understanding of written Japanese kanji by children with developmental dyslexia using a tablet computer. The 3D kanji consists of ordered pairs of strokes with distinctly different depths. This study therefore aims to test the efficacy of the program as a tool for literacy learning on a tablet computer. We propose that the 3D program better supports Japanese kanji education for children with developmental dyslexia as compared to 2D letters. In the present study, the effect of 3D letters on kanji learning and subjective preferences about kanji learning methods for children with developmental dyslexia and typically developing children were tested. Five children with developmental dyslexia and five typically developing children participated in this study. Participants used both 3D kanji and 2D kanji. The post-tests were conducted immediately after learning and every week for four weeks. The post-test conducted immediately after writing indicated that the writing order was more accurate for 3D kanji than 2D kanji. The correct answers were different for each participant after four weeks of learning kanji. The data obtained suggested that 3D depth is a key factor in the efficient recognition of letters. It is possible that arranging 3D letters spatially helped the participants to obtain information more efficiently than from flat presentations. The 3D kanji might be a fun method for children to learn kanji, irrespective of learning disabilities.

Keywords: dyslexia, kanji, literacy learning, 3D, learning disabilities

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Introduction

Developmental dyslexia is a learning disability that is neurobiological in origin (Lyon, Shaywitz, & Shaywitz, 2003). Learning to read or to write is extremely difficult for about 80% of those suffering from learning disability (Lerner, 1989). Individuals with developmental dyslexia have recognition problems when decomposing Japanese characters into their components, patterns, and strokes.

The Japanese writing system consists of two qualitatively different scripts: *kanji* and *kana*. Kanji are both logographic and morphographic and are derived from Chinese characters. Japanese children are introduced to 1006 different kanji characters during their six years of primary school education. Japanese children with dyslexia have more trouble writing kanji than reading it. This difficulty appears in various ways, such as difficulties separating kanji characters into their component strokes, failing to grasp the aggregate structure of characters, orienting them incorrectly, and omitting certain strokes.

The traditional methods used to teach children the Japanese writing system are often unsuitable for children with developmental dyslexia. Teachers most commonly begin instruction by showing students a specific kanji character and teaching them the phonetics of this character. Teachers then demonstrate the stroke order of the character so that students can follow their example. Finally, children repeatedly practice the characters to master them. This traditional method refers to copying a visually displayed model. Due to their writing impairments, children with developmental dyslexia often show a poor response to this method of learning kanji (Uno et al., 2009). Nevertheless, it is also reported that individuals with developmental dyslexia have phenomenal visual-spatial recognition ability (von Károlyi, Winner, Gray, & Sherman, 2003). Visuo-spatial recognition is required to understand the three-dimensional(3D) position of an object, which contains more information than two-dimensional (2D) objects.

We developed a literacy learning program using 3D kanji models. This study aims to test the efficacy of this literacy learning program on a tablet computer. We propose that 3D letters better support Japanese language education for dyslexic children compared to 2D letters.

Methods

Participants

The participants of this study include six children with low vision (three boys and five children with developmental dyslexia (four boys and one girl) between eight and ten years of age and five children without developmental dyslexia (two boys and three girls) between six and seven years of age participated in this study. Written informed consent was obtained from the participant's parents. This study was approved by Sagami Women's University.

Apparatus and Stimuli

This experiment was conducted on a tablet computer (9.7-inch Apple iPad Air). The learning kanji in both 3D and 2D were presented using the Apple iBooks application. The participants were asked to seat themselves on a chair positioned in front of the tablet computer.

This study used 3D software (Autodesk Maya) to model the 3D letters. The 3D letters were COLLADA format (.dae). This content involved 3D letters that were created using the 3D widget within iBooks Author (Apple).

The 3D letters were correlated front to rear with a starting-stroke point to end-stroke point that continuously changed (see Figure 1). These were arranged in the depth direction (z-axis) in combination with the stroke order. The 3D letters can rotate 360 degrees on the screen. The 2D letters were the same as the kanji models (Koubunshoin) used at school (see Figure 2). This study selected the learning kanji which the participants never learn to kanji.

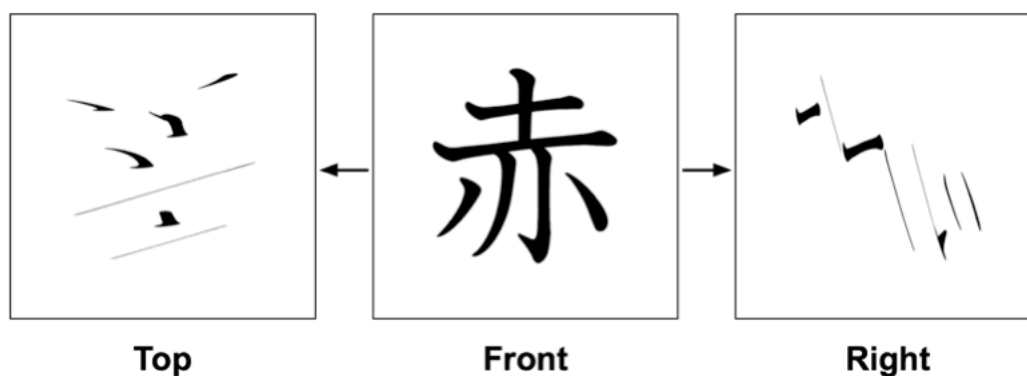


Figure 1: The 3D letter of “赤(red)”.

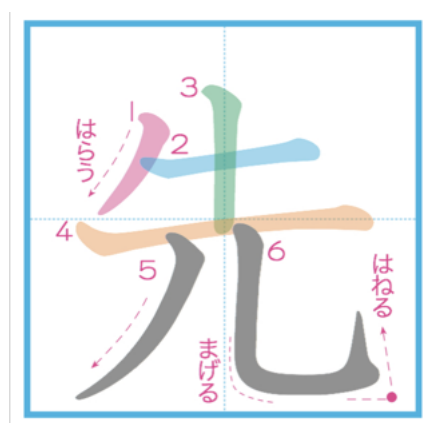


Figure 2: The 2D letter of “先(tip)”.

Procedure

The participants sat on a chair, and they were provided with instructions for the task. They learned using 2D or 3D kanji on a tablet computer; they copied the kanji five times on paper while looking at a 2D or 3D kanji models. One session was two letters of a 2D or 3D kanji while a limited 5 minutes. The participants were conducted two sessions.

Figure 4 shows a participant learning the 3D kanji. The participants were tested on the learned kanjis immediately after learning them (post-test) and one week later (post-test 2).

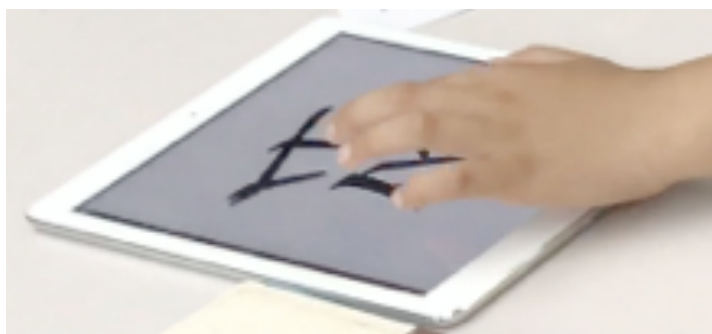


Figure 3: Participant learning the 3D kanji on an iPad.

Results

Post-test 1 results for developmental dyslexia were an average of $60.0 \pm 24.4\%$ for 2D and $100.0 \pm 0.0\%$ for 3D kanji. Post-test 2 results for children with developmental dyslexia were an average of $30.0 \pm 20.0\%$ for 2D and $90.0 \pm 10.0\%$ for 3D kanji.

Post-test 1 results for the control group were an average of $30.0 \pm 12.2\%$ for 2D and $50.0 \pm 0.0\%$ for 3D kanji. Post-test 2 results for the control group were an average of 0.0 ± 0.0 for 2D and $10.0 \pm 10.0\%$ for 3D kanji.

We checked that participants recalled the learned kanji after using the 2D or 3D kanji. In children with developmental dyslexia, the 3D kanji scored higher than the 2D kanji in post-test 2 ($p < 0.10$, $n = 5$; Wilcoxon signed rank test, $z = -1.73$, two-tailed).

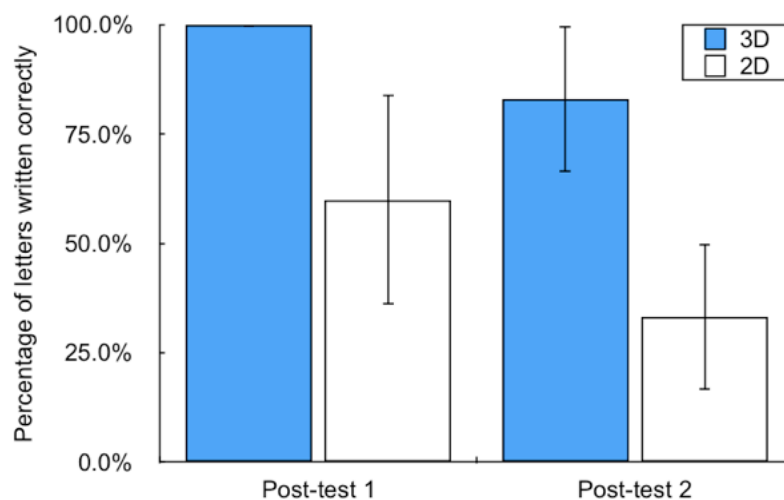


Figure 4: Writing skill assessment test in children with developmental dyslexia.

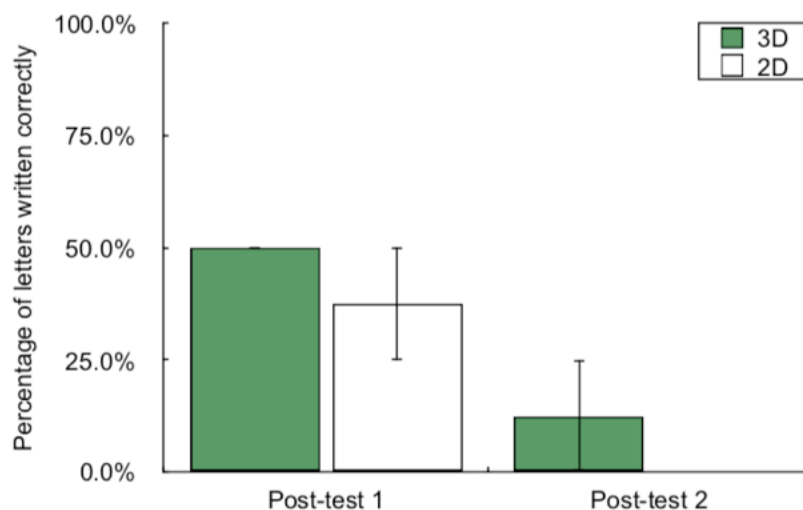


Figure 5: Writing skill assessment test in controls.

Conclusion

We discovered that 3D letters are suitable for children with developmental dyslexia to obtain enough visual information and that this is a useful tool for learning kanji letters. These 3D kanji characters have been proven to be an effective method for delivering visual information to children with developmental dyslexia.

Japanese kanji consist of more strokes than letters in the English alphabet. The visual characteristics of Japanese kanji might account for the difficulty of memorizing the script. This experiment with 3D kanji has indicated that using depth information, shapes, and positions made the text easier to grasp.

The current results suggest that depth information is a key factor in the effective recognition of kanji letters. It is possible that by arranging 3D letters spatially children with developmental dyslexia were able to obtain information more efficiently than from 2D letters.

In the future, we plan to investigate the effectiveness of this 3D program among dyslexic language learners who are struggling with other languages.

Acknowledgment

This research was partially supported by The Mitsubishi Foundation.

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Van Hiele's Instructional Model In Teaching Of Tangents And Secants Of Circles

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

The research study aimed to identify the pupils' skill in proving mathematical concepts about tangents and secants of circles using Van Hiele's instructional model. Quasi – experimental method of research was used in this study. Quantitative, since descriptive analysis was employed on the scores of the participants and qualitative since the research dealt with the description of the different performance of group of students in terms of learning, for the participants belonging to low performing, average performing or high performing. The study was conducted during the first semester of S.Y.2017 – 2018 using fifteen students from Grade 10 as the participants of the study. Participants were given a pretest prior to the discussion about tangents and secants of circles and posttest was administered after the instruction using the Van Hiele's Instructional Model's five levels of learning. The results were then statistically evaluated, analyzed, and interpreted. Percentage, mean and t-test were utilized to analyze and interpret the data. Qualitative analysis was drawn from the descriptive rating of the selected 15 participants of the experimental group. This study found out that the participants with the use of Van Hiele Instructional Model showed poor and satisfactory performances on the pretest and very satisfactory and excellent on the posttest. Moreover, the participants showed improved scores in all levels in their mathematics performance. On the pre-test and posttest mean scores of each student, high performing participants improved their skills in Mathematics from Level 1 to level 5 instructional model. Average performing participants and low performing participants also showed improvement from their pre-test mean scores to their posttest mean scores. Van Hiele Instructional Model is effective.

Keywords: Van Hiele's Instructional Model, Tangents, Secants

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Introduction

Mathematics is indeed a difficult and of little interest to certain people. Ganal and Guiab (2014) added, “Mathematics has importance over and above the application of basic numeracy skills. It is also the primary tool for developing student’s logical thinking and higher-order thinking skills. Mathematics also plays a major role in some other scientific fields, such as engineering and statistics. With this, a positive attitude towards learning mathematics among students is an important goal of mathematics educators in the education system.”

Paja (2001) said that students learn hardly anything that is being taught but if they learn through hands-on and minds on approach, with the law of readiness, and if what they learn will be incorporated into everyday activities and in subjects like languages, arts, sciences, social studies, music, physical education, life skills and performing arts, it will just be easier for them. Since students in today’s generation are practical work learners, investigational learners, and sociable learner.

Thus, In 2001, the Department of Education emphasizes that teachers must assist the Filipino child to discover his/her full potential in a child-centered and value-driven teaching-learning environment and thereby, enable him/her to create his/her destiny in the global community. Learning, therefore, must be focused in nurturing a child through a child-centered instruction.

Student-centered learning, according to Jones (2007), also known as learner-centered education, broadly encompasses methods of teaching that shift the focus of instruction from the teacher to the student. In original usage, student-centered learning aims to develop learner autonomy and independence by putting responsibility for the learning path in the hands of students. Young and Patterson (2007) added that student-centered instruction focuses on skills and practices that enable lifelong learning and independent problem-solving. The constructivist learning theory of Jean Piaget is the basis of student-centered learning theory and practice which emphasizes the learner's critical role in constructing meaning from new ideas, information and prior experience.

The Mathematics teachers’ approach to geometric instruction as cited by Dongwi (2014), determines a large extent in the mathematical thinking strategies and dispositions of learners. Cabahug (2012) as cited by Mendoza (2016) mentioned that Mathematics is an essential subject in the curriculum. But in teaching mathematics, one of the common problems of teachers is how to teach symbols and abstract concepts in such a way that the students would easily understand the topic and make sense of them. One way is the use of the different teaching aids which are reflected in Bruner’s theory. In his theory, Bruner (1967) says that conceptual understanding can be enhanced if students will be exposed to different representations of concepts. In particular, he identifies three main types of representations: concrete, iconic, and symbolic.

Studies such as Ismael (1998) pointed out that geometry is one of the hardest branches of Math facing the students and this difficulty refers to the lack of geometric concepts acquisition.

Van Hiele's (1986) solution to overcoming these problems is for teachers to take responsibility for their teaching and to make appropriate choices. For example, if the curriculum is not suitable for learners, design your own and if the textbook is inappropriate for teaching and learning in your classroom, restructure it to suit the environment. The difficulties that learners experience with geometric conceptualization arise from various factors, but their inability to reason at a higher level of geometric thinking does not lie solely within their learning ability or motivation.

The Van Hiele theory identifies a sequence of five hierarchical levels of geometric thinking. These thinking levels are recognition, analysis, ordering, deduction, and rigor. According to the Van Hiele's theory, "students move sequentially from one level of thinking to the next [level] as their capability increased" (Gutierrez, Jaime & Fortuny, 1991).

The levels of thinking comprise a hierarchical nature. They are logically structured to suggest that learners move from lower to higher levels of thinking in geometry. The current is a prerequisite for the next level. For example, "the recognition of a figure at Level 1 is an essential prerequisite for Level 2. The consideration of properties at Level 2 will eventually lead to Level 3 understanding where students see relationships between them, i.e., how one or two properties lead to a third" (Pegg, 1992). The fourth level leads to conceptual understanding of geometrical proof and development and of theorems and postulates.

Difficulties in teaching geometry persisted in the Van Hieles' years of teaching, despite their change of geometric instruction over the years. Van Hiele (1986) chronicled; "in the years that followed, he changed explanation many times, but the difficulties remained. It seemed as though he was speaking a different language". They then developed a framework of teaching phases that helped teachers to move their learners from one level to the next. Van Hiele-Geldof (1958, as cited in Fuys, et al., 1984) stresses that learners cannot progress through the levels of thinking without proper instruction. Hence, it is important that the teachers' instruction is pegged at the appropriate Van Hiele level to enable learners to attain the highest possible level in their learning environments according to Dongwi (2014).

One of the goals of teaching mathematics subject is to improve the students' geometric thinking levels. Geometric thinking is valuable in many scientific, technological and professional subjects as stated by Olkun, Sinoplu, & Deryakulu, (2005). Some studies have pointed to the significant role of the teaching method in developing geometric thinking skills (Ghneim, 2012). As per the Philippine Mathematics Curriculum is concerned, Cruz (2015) in one of his articles in Philippine Star Global cited that the enormous change is the spiral approach of the content. Today, students learn all the areas of mathematics starting in Kindergarten to twelfth grade. The learning is enhanced little by little and continuously as the students go up and promoted in the ladder of basic education. Learning Geometry as early as Kindergarten will enable students to master different skills in order to describe geometric concepts like shapes, analyze their characteristics, and make a comparison between the geometric systems.

One of the theories that help greatly and efficiently in teaching geometry is Van Hiele which attracted educationists' attention because it helps effectively in teaching

geometry to the students through the different school stages. The Van Hiele model from this theory includes five phases which are: information, directed orientation, explication, free orientation where students are involved in tasks relying on them, and integration where the students summarize the concepts learned from activities (Mistretta, 2000).

The Van Hiele model is considered one of the most important models in teaching the subject geometry and the geometric concepts and thoughts will be developed through five phases within an educational system. These phases represent the development of the thinking process in geometry in addition to the acquisition of geometric knowledge. The progress in the student's thinking enables him to summarize what he learned and employ it in his daily life activities (Tall & Pegg, 2005).

Theoretical and Conceptual Framework

When Van Hiele suggested a geometrical learning model, he realized that, to master the intended learning levels as prescribed in the model, an appropriate pedagogical approach would be required. She, therefore, suggested a series of instructional disciplines that could facilitate the learning of geometry. Van de Walle (2004) notes that Van Hiele clarified the specific activities expected of the teacher while teaching geometry.

The instructional steps were composed of five steps which were to guarantee that students move from one Van Hiele learning level to a higher one in their geometric thinking: "In the Van Hiele model an instructional plan, which is made up of five steps, was formed to provide a transition from one level to another in students' geometric thinking." (Crowley, 1987; Erdoğan, Durmuş & Bekci, 2007).

Interview (research): The first step is the step in which the geometric thinking levels of students are determined. In this step, the students' geometric thinking levels will be determined through communication between the teacher and the student.

Direct Orientation: In this step, the teacher gives instructions and assignments related to the studies which is done in the light of the answers he gets from the students. The purpose of the teacher giving tasks is to make students explore the structures about the topic through research.

Making clear (explanation): Teacher introduces the topic to students in this step and students combine their experiences with the words they used related to the discussion. In this level, it is of value for the teacher to arouse students' interests.

Free Performance (activities): Students work on different solutions to multiphase problems in this step. They discover the relationships/the effect of the Van Hiele Model-based to the various objects of the structure in the topic they work. The teacher should guide students in their thinking about different solutions.

Integration: This step is the step in which students summarize and gather what they acquired. Students internalize what they learned as a new thinking structure." The instructional model was visually structured by John A. Van de Walle (2004), to summarize the instructional models stated above. See figure 1 below.

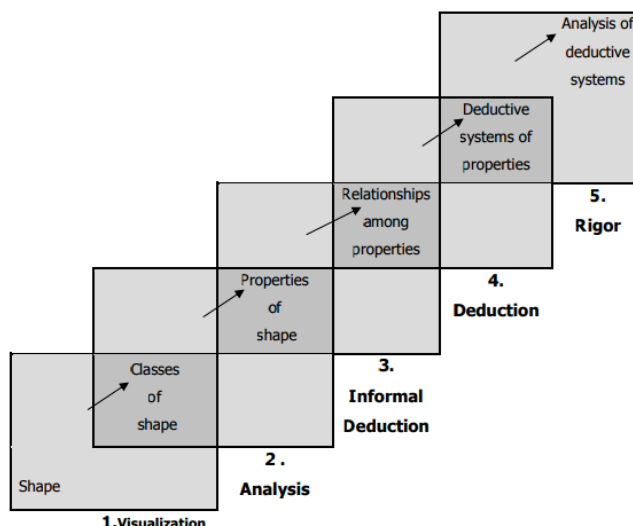
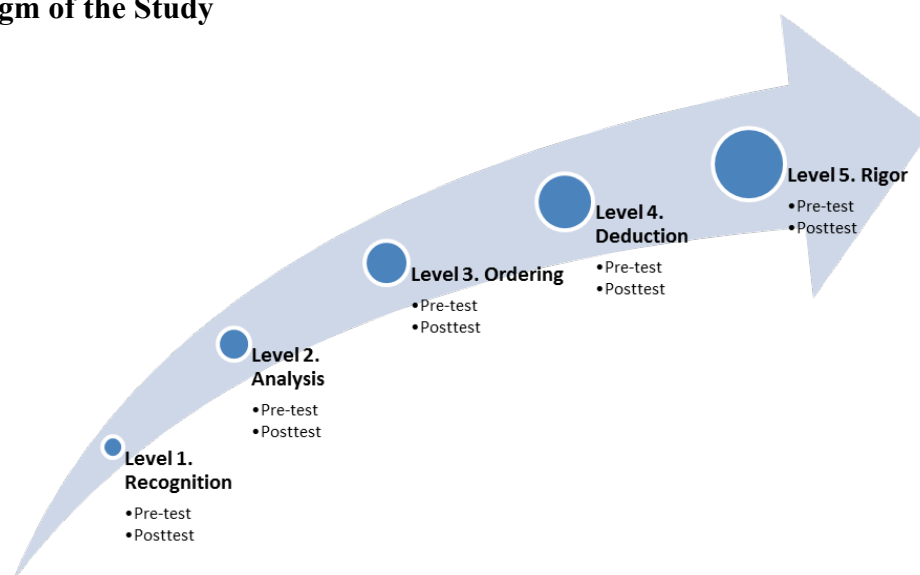


Figure 1

This study applied the Van Hiele’s Instructional Model. The researcher taught Tangents and Secants of Circles applying the Van Hiele’s Instructional Model in the whole class. He selected 15 students as experimental groups. All groups were required to take the pretest and posttest to evaluate their understanding of theorems of tangents and secants of circles. The test results of each group was analyzed to determine their skills in proving mathematical concepts and to identify their readiness in moving to the next stage of the 5-Levels of Thinking of Van Hiele’s Instructional Model.

Paradigm of the Study



Research Problems

The research study aimed to identify the pupils’ skill in proving mathematical concepts about tangents and secants of circles using Van Hiele’s instructional model. The researcher sought answers to the following questions: (1.) how may the performance of the participants be described in terms of the following levels of the

Van Hiele's Instructional Model?; (2.) how may the performance of the following participants be described during the experiments? 2.1) low? 2.2) average? and 2.3) high?; and (3.) does Van Hiele's Instructional Model significantly affect the performance of the students?

Hypothesis

It was hypothesized in this study that Van Hiele's Instructional Model does not significantly affect the performance of the students.

Methods

The study was both quantitative and qualitative research. Quantitative, since descriptive analysis was employed on the scores of the participants and qualitative since the research dealt with the description of the different performance of group of students in terms of learning, for the participants belonging to Low Performing, Average Performing or High Performing.

Participants

The participants of this study were randomly selected from one section of Don Jesus Gonzales High School, Mexico, Pampanga during the school year 2017 - 2018. Participants were composed of males and females regardless of their age, culture and socio - economic status. Grade 10 - Patience were chosen as experimental group of the experiment. Qualitative part of the study focused on the 15 participants from the experimental group who were analyzed based on their methods and means of solutions in solving measurement of angles of tangents and secants of circles. These 15 participants were chosen through the diagnostic test administered to them. There were 5 high - performing, 5 average - performing and 5 low - performing participants identified after the diagnostic test. Participants 1 to 5 were the high - performing participants, participants 6 - 10 were the average - performing participants while participants 11 - 15 were the low - performing participants.

Instrument

The researcher utilized 2 sets of instrument per level of the Van Hiele's Instructional Model, 5 sets of problems involving tangents and secants of circles for pretest and 5 sets of problems for posttest were given to the participants.

The problem sets were composed of tangents and secants problems as per the delivery of the Van Hiele's Instructional Model. The first pretest was administered to identify the fifteen selected participants: 5 high - performing, 5 average - performing and 5 low - performing participants. These selected fifteen participants were the subject of qualitative discussion of the study to analyze the effect of Van Hiele's Instructional Model to their skills in solving problems involving tangents and secants of circle.

Each participant was given a test paper. During the pretest, problems were solved using any method that was taught to the participants in their previous grade level or the method known to them. In the posttest, the experimental group applied what they had learned in the Van Hiele's Instructional Model in solving the given problems. The

researcher used all or nothing point system for the study. The researcher used 20-points parallel questions for the pretest and posttest. The researcher divided the scores into two and got the scale in order to descriptively rate the performances. The following scale was utilized to rate the score of the participants.

Scale for the Pretest/Posttest

8.01 – 10.00	Excellent
6.50 – 8.00	Very Satisfactory
5.00 – 6.49	Satisfactory
5.00 below	Poor

Procedures

The researcher wrote a letter to Don Jesus Gonzales High School to inform its office that the researcher will have an initial visit to the locale for this research. After an initial visit, the researcher prepared the instruments and instructional materials to conduct the study. The researcher conducted and applied the Van Hiele's instructional model to his classes. However, only one participating class was chosen and the results of their outputs, both pretest and posttests were recorded.

A pretest was administered to the experimental group to identify the five high – performing pupils, five average performing pupils and five low – performing pupils. These 15 pupils were the subjects of the study.

Before every discussion, a pretest was administered by the researcher. And this time, only the scores of the 15 participants were recorded. Then, discussion of the lessons in the Tangents and Secants of Circles was done. The experimental group was given two sessions of discussion per level of the Van Hiele's Instructional Model. A total of ten sessions was utilized in discussing the Tangents and Secants of the Circle.

After every discussion, the researcher administered the posttest to evaluate the understanding of the participants. Lastly, interventions were done for each level depending on the learner's grasp of the mathematical skill. The proposed intervention materials, in line with the Van Hiele's Instructional Model, was administered per level before proceeding to the next level to develop mastery of learning.

Levels of the Van Hiel's Instructional model were determined during the discussion. In the Van Hiele model an instructional plan, which is composed of five steps, was formed in order to provide a transition from one level to another in students' geometric thinking." (Crowley, 1987; Erdoğan, Durmuş & Bekci, 2007).

Level 1 focused on the interview (research) in which the geometric thinking levels of students were determined. In this step, the students' geometric thinking levels were analyzed through indirect communication between the teacher and the student. The students were given a pre-test to check what each student already knew. The teacher then taught the students by giving different tasks and activities. To check if they improved, a posttest was administered.

Level 2 was Direct Orientation. In this step, a pre-test was also given before other activities. The teacher gave instructions and assignments related to the studies which was done in the light of the answers he got from the students. The purpose of the

teacher giving tasks was to make students explore the structures about the topic through research. To check if the students improved, a posttest was also administered. In Level 3, the teacher focused in making clear explanation. Prior to this step, a posttest was given to determine prior knowledge about the lesson. The teacher introduced the topic to students while combining their experiences with the words they used related to the discussion. In this level, it was of value for the teacher to arouse students' interests. The teacher taught and gave different activities to improve the skills of the students. A posttest was also given afterwards.

Free Performance was the center theme of Level 4. It was focused on activities that deepened the critical thinking skills of the students. A pre-test was administered before any other activities. They were able to work on different solutions to multiphased problems in this step. They discovered the relationships/the effect of the Van Hiele Model-based to the various objects of the structure in the topic they work. The teacher guided students in their thinking about different solutions and geometric proofs.

Table 1. Performance of the participants in Van Hiele's Instructional Model

			Excellent	Very Satisfactory	Satisfactory	Poor
Level 1	Pre-test	f	5	5	0	5
		%	33	33	0	33
	Post test	f	9	5	1	0
		%	60	33	7	0
Level 2	Pre-test	f	0	0	12	3
		%	0	0	80	20
	Post test	f	6	5	4	0
		%	40	33	27	0
Level 3	Pre-test	f	0	0	0	15
		%	0	0	0	100
	Post test	f	8	4	2	1
		%	53	27	13	7
Level 4	Pre-test	f	0	0	0	15
		%	0	0	0	100
	Post test	f	4	1	2	8
		%	27	7	13	53
Level 5	Pre-test	f	0	0	5	10
		%	0	0	33	67%
	Post test	f	6	3	5	1
		%	40	20	33	7%

In Level 5 or Integration, a pre-test was also administered. This step was the step in which students summarized and gathered what they acquired. Finally, a posttest was administered to check the improvement on the skills of students.

Van Hiele's Instructional Model is an instructional model where students followed the five levels namely: a) Visualization; b) Analysis; c) Informal Deductions; d) Deductions; and e) Rigor.

Percentage score was utilized to determine the performance of the participants using the instructional model. Mean and Standard deviation were also used to analyze the scores of the participants and t-test was used to determine if the Van Hiele's Instructional Model significantly affect the performance of the students.

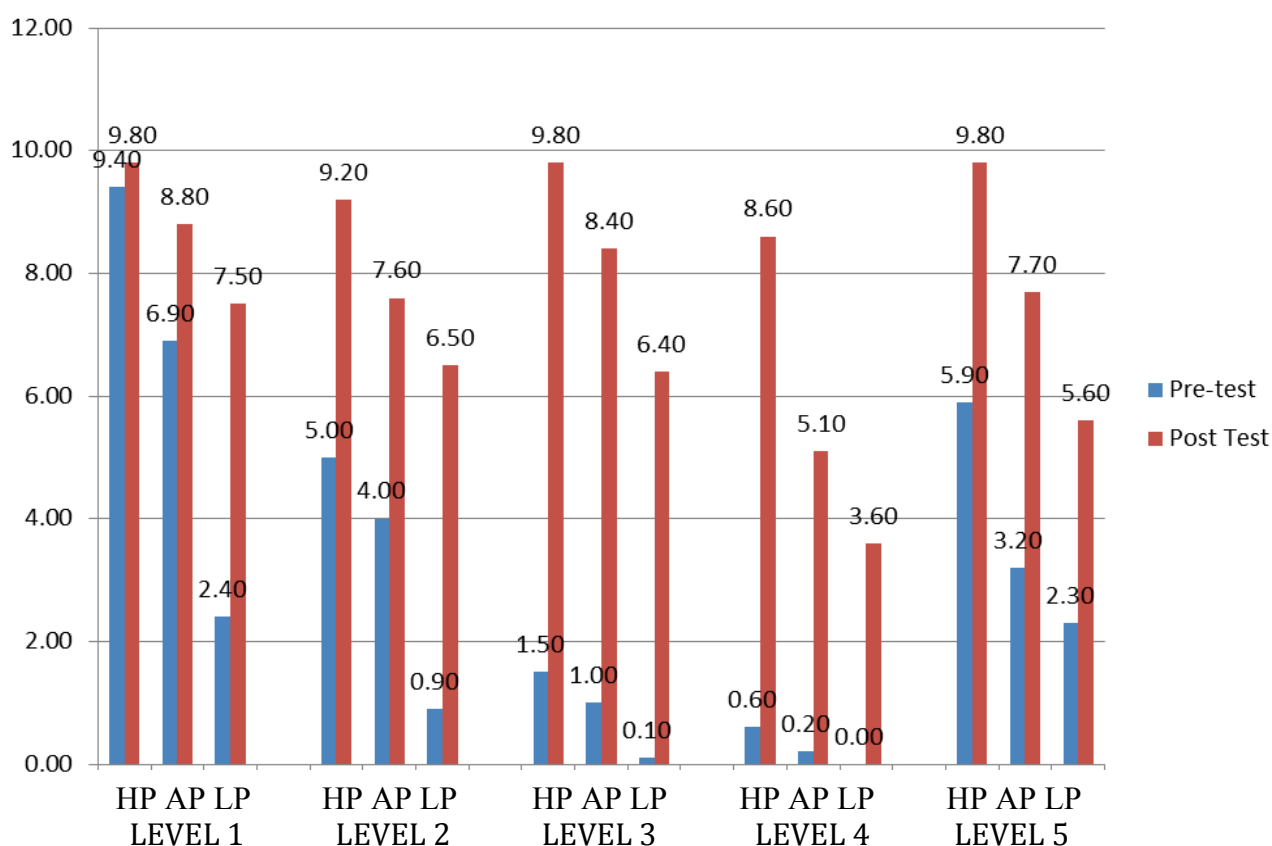
Qualitative analysis came from the participant's descriptive rating of the selected 15 students of the experimental group.

Results and Discussion

Table 1 reveals the performance of the participants in Van Hiele's Instructional Model. In Level 1, the pretest revealed that there are five participants who get a descriptive rating of excellent which is equivalent to 33% while the other 5 participants (33%), were recorded very satisfactory and the other 5 (33%) were rated poor. On the other hand, after the discussion, Posttest revealed that 9 out of 15 participants (60%) were rated excellent, 5 (33%) were very satisfactory and 1 (7%) was satisfactory. In the pre-test of Level 2, 12 participants (80%) were recorded as satisfactory and 3 (20%) were noted as poor while the post test revealed that 6 participants (40%) were rated as excellent, 5 (33%) were very satisfactory and 4 (27%) were satisfactory. In level 3, 15 participants or 100% were rated poor on the pretest while on the posttest, 8 out of 15 (53%) were recorded as excellent, 4 (27%) were very satisfactory, 2 (14%) were satisfactory and there was only 1 (7%) rated poor. The pre-test of Level 4 was also rated as poor since 100% among 15 participants got zero. Some improvements were done after the discussion because 4 participants (27%) were rated excellent, 1 (7%) were very satisfactory, 2 (13%) were satisfactory and 8 (53%) were still categorized as poor. In Level 5, the pretest revealed that there are 5 participants who get a descriptive rating of satisfactory which is equivalent to 33% while the other 10 participants (67%) were recorded poor. Hence, after the discussion, posttest revealed that 6 (40%) got excellent rating, 3 (23%) got very satisfactory, and 5 (60%) got poor rating.

Thus, the table implied that the participants with the use of Van Hiele Instructional Model showed mostly poor and satisfactory performances on the pretest and mostly very satisfactory and excellent on the posttest, however, participants showed improving scores in all levels in their mathematics performance

Graph 1. Pre-test and posttest mean scores of the participants



Graph 1 showed the pre-test and posttest mean scores of the participants. It will be described on the graph that most students improved greatly from their pre-test scores to their posttest scores. Level 1 showed that high-performing participants improved 0.40 from their pre-test mean scores to their posttest mean scores. Average performing participants improved from 6.90 to 8.80 and low performing participants improved the most by 5.10 mean difference of the posttest to their pre-test.

Level 2 also showed improving skills in Mathematics. High performing participants' posttest improved to 4.20 from its pretest mean score of 5.00. Average performing participants also improved from 4.00 to 7.60. There was also an improvement among the low performing participants from the pre-test mean score of 0.90 to posttest mean score of 6.50.

On Level 3, students showed a great height of improvement. High performing participants had a mean difference of 8.30. Average performing participants upgraded from pre-test mean score of 1.00 to posttest mean score of 8.40 while low performing participants mean score was increased by 6.30.

There was a visible upgrade shown on Level 4. Participants from the high performing group increased by 8.00 from the pre-test mean scores and posttest mean scores. Average performing participants had a mean of 0.20 from the pre-test to 5.10 on the posttest. All students from the low performing group did not scored on the pretest but there's an improvement on the posttest with a mean score of 3.60.

On level 5, all participants showed improving skills in Mathematics. High performing participants' posttest improved to 3.90 from its pretest mean score of 5.90. Average performing participants also improved from 3.20 to 7.70. There was also an improvement among the low performing participants from the pre-test mean score of 2.30 to posttest mean score of 5.60.

Based on the pre-test and posttest mean scores of each students, high performing participants improved their skills in mathematics from Level 1 to level 5 of the Van Hiele's instructional model. Average performing participants and low performing participants also showed improvement from their pre-test mean scores to their posttest mean scores.

Table 2. Difference between the posttest scores of the participants

Levels	Mean Differences	p-value Sig. (2-tailed)	Remarks
Level 1	2.47	0.001	Significant at 0.01
Level 2	4.47	0.000	Significant at 0.01
Level 3	7.33	0.000	Significant at 0.01
Level 4	5.50	0.000	Significant at 0.01
Level 5	3.90	0.000	Significant at 0.01

Table 2 reveals that there was a significant difference at 1% between the pretest and posttest of the Van Hiele's Instructional Model with a computed p – value of 0.001 for the Level 1, 0.000 for the Level 2, 0.000 for the Level 3, 0.000 for the Level 4 and 0.000 for the Level 5. The mean difference of pre-test and posttest per level was also computed. The mean difference of Level 1 is 2.47, 4.47 for Level 2, 7.33 for Level 3, 5.50 for Level 4 and 3.90 for Level 5. This indicates that participants improved their performance after the discussion of the lesson. This proves that the Van Hiele's Instructional Model showed significant improvement in their skill in mathematics with regards to tangents and secants of circles.

Conclusion

Based on the findings, the researcher derived at the following conclusions: 1) The participants used Van Hiele Instructional Model showed mostly poor and satisfactory performances on the pretest and mostly very satisfactory and excellent on the posttest however participants showed improving scores in all Levels in their mathematics performance; 2) on the pre-test and posttest mean scores of participants, high performing participants improved their skills in Mathematics from Level 1 to level 5 of the Van Hiele's instructional model. Average performing participants and low performing participants also showed improvement from their pre-test mean scores to their posttest mean scores; and 3) the Van Hiele Instructional Model is effective. Considering the aforementioned findings and conclusions, the following recommendations are hereby suggested: 1) Teachers are encouraged to test the prior knowledge of their students before discussing their lessons about tangents and secants of circles to determine pupils' strengths and weaknesses; 2) Teachers may adopt the use of Van Hiele's Instructional Model in teaching Mathematics from primary level to junior high school to enhance students' performance in Mathematics and to strengthen the foundation of knowledge; 3) Curriculum planners and textbooks

writers must take into consideration the difficulties of students in order to come up with easier methods to be used in teaching to produce better students' outputs. Moreover, researchers on the different techniques on how to address students' learning barriers in Mathematics may be conducted; cultural background and techniques could be observed before applying a foreign method.

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School Principals' Profile and Public Elementary Schools Performance in the Schools Division Office of Imus City

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

The widely quoted biblical verse “By their fruits, ye shall know them” aptly relates to school leadership. The quality of education delivered to students is dependent on how learning process is managed in the schools. A systematic review conducted by Osborne-Lampkin, Folsom, and Herrington (2015) that examined 52 empirical studies published between 2001 and 2012 on the relationships between principal characteristics and student achievement in the United States showed some interesting results. One of which was in general, principal precursors (such as principals’ experience and educational attainment) and student achievement had positive relationship. They claimed, however, that principal preparation programs, also a precursor, provided mixed results. This study sought to establish if the school principals’ demographic profile has a relationship on schools performance in the Schools Division Office of Imus City. Results revealed that majority of the school principals are female (78.57%), had bachelor degree with units in MA (71.43%) and had been promoted as principal prior to the administration of the National Qualifying Examination for School Heads (NQESH) (50.00%). Twelve (85.71%) schools recorded a decrease of dropout rate from SY 2013 – 2014 and SY 2014 – 2015 and all of the fourteen (14) schools studied were way below the national standard of 75% Mean Percentage Score (MPS) in the National Achievement Test (NAT). The school principals’ demographic profile namely sex, educational attainment and qualification, were not related to school performance in terms of dropout rate and result of the NAT.

Keywords: school principal, demographic profile, performance, dropout, achievement

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Introduction

The widely quoted biblical verse “By their fruits, ye shall know them” aptly relates to school leadership. The quality of education delivered to students is dependent on how learning process is managed in the schools. Although there were tons of other factors that could be associated to quality of education delivered, the role of school principals, who hold the scepter of leadership and management in the school, is seen to have the greatest impact. This fact is accentuated by Arne Duncan, U.S Secretary of Education, when he said, “There are no good schools without good school principals.”

The crucial role of principal as school leader and manager was also given emphasis in the Philippines. In Republic Act 9155, otherwise known as Governance of Basic Education Act of 2001, clearly stipulated that school heads have the accountability and responsibility “...for higher learning outcomes.”

Muring (2014), an elementary school principal, also believed that the key leaders in the education system are the school principals. He made clear that every aspect of school operation, school principals are involved. To him, development and implementation of programs and projects that pertains to education are responsibilities of the principal.

The reiteration of the crucial roles held by school principals were viewed to have great impact on the overall performance of the school. As implementers of various programs and projects of the Department of Education at the grass roots, school principals were enjoined, as stated in DepEd’s mandate, to provide “for the establishment and maintenance of a complete, adequate, and integrated system of basic education relevant to the goals of national developments.” The emphasis given on how school principals affect the overall outcome of education merited the conduct of this study. Hence, it is noteworthy to study the school principals’ demographic profile and its relationship on school performance.

Brief Review of Related Literature

The succeeding paragraphs presented and discussed related literatures to the study. These are taken from books, journals, dissertations, and electronic journals and/or books.

Behbahani (2011) pointed out that the start of change in the field of education should start from education management. To prove his claim, he conducted literature review of the works of various education authors and researchers. The results of his study showed that if knowledge, attitude and job conduct of school principals of schools and managers of educational units is not rooted from their specialized and professional knowledge needed to take the position, they could turn into a barrier in the improvement and renovation of educational system.

Like the claim above, Cruz et al. (2016) also believed that schools, like any other organizations, could perform and deliver its functions when there is strong leadership and management. They emphasized that to keep a school going, school heads being

the leader and manager must set the direction. School heads, they said, are responsible for the overall operation of the school.

Hornig and Loeb (2010) also had a firm belief that schools demonstrating growth in student achievement are more likely to have school principals who are strong organizational managers. They added that strong instructional leadership is essential for a school to be successful. On the studies they conducted, they found that growth in valued school outcomes come more from organizational management for instructional improvement than from school principals' time observing classrooms or directly coaching teachers. They concluded that school leaders influence classroom teaching, and consequently student learning, by staffing schools with highly effective teachers and supporting those teachers with effective teaching and learning environments, rather than by focusing too narrowly on their own contributions to classroom instruction.

A systematic review conducted by Osborne-Lampkin, Folsom, and Herrington (2015) that examined 52 empirical studies published between 2001 and 2012 on the relationships between principal characteristics and student achievement in the United States showed some interesting results. One of which was in general, principal precursors (such as school principals' experience and educational attainment) and student achievement had positive relationship. They claimed, however, that principal preparation programs, also a precursor, provided mixed results. However, they cited the work of Knoeppel and Rinehart (2007) which also found that experience in education, when analyzed with other variables, was not associated with student achievement.

Furthermore, Osborne-Lampkin, Folsom, and Herrington (2015) cited results of the other studies they reviewed on the effect of a principal's years of experience as a teacher on improving student achievement (Clark et al. and Vanderhaar et al.). It was found that the number of years of teaching experience was not associated with student achievement but in contrast, achievement was higher among students whose school principals were in the middle of their careers.

The studies they reviewed showed that students whose principal had nine (9) to seventeen (17) years of teaching experience had higher achievement than students whose principal had less than nine (9) years or more than seventeen (17) years of experience. They concluded that this finding suggested a relationship between a specific range of teaching experience (9–17 years) and student achievement.

In a correlational study on leadership effectiveness and student achievement conducted by Feyisa, Ferede and Amsale (2016) showed that there was no significant correlation between a school principal's leadership effectiveness and students' academic achievement. They claimed that this implied that there was no direct relationship between school leadership and students' academic achievement. They also added that the findings suggest that the relationship between school principals' level of education, service year, and leadership effectiveness was not direct.

The reviewed literatures clearly illustrated that school principals' leadership, management, competence and skills had to some extent influence students' achievement. But unlike these reviewed literatures, this study focused on some

demographic profiles of school principals and its relationship to school performance as measured by dropout rate and the result of National Achievement Test (NAT).

Research Questions

This study sought to establish if the school principals' demographic profile has a relationship on public elementary schools' performance in the Schools Division Office of Imus City. Specifically, the study attempted to answer the following questions:

1. What are the demographic characteristics of the participants in terms of the following:
 - 1.1 sex;
 - 1.2 educational attainment;
 - 1.3 school principalship training/ qualification; and
 - 1.4 length of service.
2. What is the school population for the last two (2) school years, 2013-2014 and 2014 -2015?
3. What is the NAT-national passing percentage?
4. What is the national dropout rate for the last school year 2016-2017?
5. Is there a significant relationship between the school principals' demographic profile and the performance of the public elementary schools in terms of the following:
 - 6.1 School population?
 - 6.2 Result of the National Achievement Test? and
 - 6.3 Dropout rate?

Hypotheses of the Study

1. There is no significant relationship between the sex of the school principals and the performance of the public elementary schools in terms of population.
2. There is no significant relationship between the educational attainment of the school principals and the performance of the public elementary schools in terms of population.
3. There is no significant relationship between the school principalship training/qualification of the school principals and the performance of the public elementary schools in terms of population.
4. There is no significant relationship between the length of service of the school principals and the performance of the public elementary schools in terms of population.

5. There is no significant relationship between the sex of the school principals and the performance of the public elementary schools in terms of the result of National Achievement Test.
6. There is no significant relationship between the educational attainment of the school principals and the performance of the public elementary schools in terms of the result of National Achievement Test.
7. There is no significant relationship between the school principalship training/qualification of the school principals and the performance of the public elementary schools in terms of the result of National Achievement Test
8. There is no significant relationship between the length of service of the school principals and the performance of the public elementary schools in terms of the result of National Achievement Test.
9. There is no significant relationship between the sex of the school principals and the performance of the public elementary schools in terms of dropout rate.
10. There is no significant relationship between the educational attainment of the school principals and the performance of the schools in terms of dropout rate.
11. There is no significant relationship between the qualification of the school principals and the performance of the schools in terms of dropout rate.
12. There is no significant relationship between the length of service of the school principals and the performance of the public elementary schools in terms of dropout rate.

Scope and Limitations

The study is limited to school principals who served for two consecutive school years, 2013-2014 and 2014-2015 respectively. Of the total 26 public elementary schools only 14 or 53.85% were interpreted and considered as the participants of the study.

Methodology

This study is a descriptive study. Descriptive study is used to obtain information concerning the status of the phenomena and to describe "what exists" with respect to variables or conditions in a situation.

The study employed documentary analysis and interview as method of gathering data. Relevant records filed at the Office of the Planning and Research Section of the Schools Division Office of Imus City were requested and analyzed. Permission was obtained from the Schools Division Superintendent to access these records.

The records that were requested for analysis belong to the twenty-six (26) public elementary schools of the Schools Division Office of Imus City. The data that were obtained include demographic profiles of the school principals and performance

indicators of public elementary schools such as enrolment, number of drop outs and result of NAT. The data covered two (2) school years 2013 – 2014 and 2014 – 2015. The proponents sent letter of request to school principals for a possible meeting and scheduled the interview to obtain updates of their other demographic profiles not captured by the available data.

The interview conducted in a relax and informal manner, wherein participants were asked to confirm or supply information regarding their educational attainment, school principalship training/ qualification and length of service. The answers given by the participants were tabulated, consolidated and were used as data of participants.

From the records of the twenty-six (26) public elementary schools that were analyzed, only the data of schools whose principal served for two consecutive school years from 2013 – 2014 and 2014 – 2015 were interpreted. This left the researchers with 14 or 53.85% of the total twenty-six (26) public elementary schools. The 14 school principals who served in these schools were the participants of the study.

The data were interpreted using descriptive measures such as frequency count, relative frequency in percent and mean. The hypotheses were tested using the non-parametric test analogous to ANOVA, the Kruskal-Wallis H Test.

Results and Discussion

The succeeding tables and paragraphs present the results of the study. Each table is accompanied by its corresponding analysis.

1. Demographic Profile of the School principals

1.1. Sex

Table 1. Sex of the Participants

Sex	Frequency	Percent
Male	3	21.43
Female	11	78.57
Total	14	100.00%

Table 1 reveals that 3 or 21.43% are male and 11 or 78.57% are female. This is a clear indication that school leadership in the Schools Division Office of Imus City was dominated by female school principals.

Hausmann et al. (2012) reported that the Philippines remained the highest-ranking country from Asia in the Global Gender Gap Index 2012. They reported that Philippines ranked first on both education and health and is also among the top 20 on economic participation and political empowerment. They added that the Philippines was the only country in Asia, on the date the report was released in 2012, to have closed the gender gap in both education and health.

1.2. Educational Attainment

Table 2 shows the distribution of the participants in terms of their educational attainment.

Table 2. Educational Attainment of the Participants

Educational Attainment	Frequency	Percent
Bachelor Degree with Units in MA	10	71.43
Graduate of MA	2	14.29
MA with Units in PhD/EdD	1	7.14
Graduate of PhD/EdD	1	7.14
Total	14	100.00%

It is shown in Table 2 that majority of the participants had educational attainment of bachelor degree with units in MA, 10 or 71.43%. Two or 14.29% of the participants are graduates of MA and only one or 7.14% had attained MA with units in PhD/EdD or graduate of PhD/EdD.

Unlike the result of the current study, the findings that were obtained by Guiab and Ganal (2014) on their study of the demographic profile of public school heads and school related problems found that majority or 55% of public elementary school principals in Alicia, Isabela were MA graduates.

1.3. Qualification

Table 3 shows the distribution of the participants in terms of their qualification. The qualification mentioned here refers to the school principals' test administered by DepEd, the National Qualifying Examination for School Heads (NQESH).

Table 3. Qualification of the Participants

Qualification	Frequency	Percent
Promoted as Principal prior to NQESH	7	50.00
NQESH Passer	6	42.86
Not NQESH Passer	1	7.14
Total	14	100.00%

Revealed in Table 3 is that 7 or 50.00% of the participants were promoted as principal prior to the administration of NQESH, 6 or 42.86% of the participants were passer of NQESH while one or 7.14% was not passer of the said examination but was acting as principal.

As stipulated in DepEd Memorandum No. 143, s. 2011, this examination shall serve as mechanism for selecting competent school heads in the public basic education sector.

2. Performance of Schools

2.1 Dropout Rate

Table 4 shows the performance of the schools in terms of dropout rate.

Table 4. Dropout Rate

School	Dropout Rate		Difference
	SY 2013 – 2014	SY 2014 – 2015	
1	3.83%	2.78%	-1.05%
2	6.37%	3.89%	-2.48%
3	5.45%	3.16%	-2.29%
4	5.69%	3.02%	-2.67%
5	6.50%	3.39%	-3.11%
6	3.98%	2.58%	-1.40%
7	4.16%	4.60%	0.44%
8	5.43%	2.93%	-2.50%
9	2.87%	2.30%	-0.57%
10	3.83%	3.10%	-0.73%
11	3.33%	2.29%	-1.04%
12	9.22%	8.57%	-0.64%
13	7.50%	3.49%	-4.01%
14	6.13%	6.51%	0.38%

Shown in Table 4 is the performance of the 14 public elementary schools in the Schools Division Office of Imus City. It can be seen from the table that 12 of the 14 schools or 85.71% recorded a decrease in dropout rate from SY 2013 – 2014 to SY 2014 – 2015. School Number 13 registered the greatest decrease in dropout rate with 4.01% while school I with 0.57% had the least. School Numbers 7 and 14 were the only schools with increased dropout rates with 0.44% and 0.38% increase, respectively.

Using DepEd data, Amoroso and Bajo (2014) reported that the elementary dropout rate never got past the 6% level since 2008. They added that from 5.99% in school year 2007 – 2008, the dropout rate went up gradually until it reached 6.81% in school year 2012 – 2013. On the average, this reported figure was way above the case of public elementary schools in Imus City.

2.2 National Achievement Test

Table 5 below shows the performance of the schools in terms of the result of the National Achievement Test (NAT).

Table 5. National Achievement Test

School	School MPS in NAT for SY 2014 – 2015	Difference from the National Standard (75.00)
1	66.44	8.56
2	49.94	25.06
3	44.42	30.58
4	57.00	18.00
5	48.29	26.71
6	41.78	33.22
7	46.13	28.87
8	50.41	24.59
9	49.45	25.55
10	52.52	22.48
11	46.92	28.08
12	46.99	28.01
13	48.69	26.31
14	52.62	22.38

As reflected in Table 5, fourteen (14) out of the 26 public elementary schools in the Schools Division Office of Imus City were all below the national standard of 75.00% Mean Percentage Score (MPS). School Number 1 had the closest MPS difference to the national standard with 8.56 and followed by school number 4 with 18.00. On the other hand, school numbers 3 and 6 had the greatest difference from the national standard at 30.58 and 33.22, respectively.

3. Relationship between the School Principals' Demographic Profile and the Performance of the Schools

3.1. Sex and Dropout Rate

Table 6. Result of Kruskal-Wallis H Test for Sex and Dropout Rate

Sex	N	Mean Rank	df	Kruskal-Wallis H	p Value
Male	3	6.67	1	0.152	0.697
Female	11	7.73			

The null hypothesis which states that “There is no significant relationship between the sex of the school principals and the performance of the schools in terms of dropout rate” was tested using Kruskal-Wallis H Test at 0.05 level of significance. In Table 6, the test showed that there was no significant relationship between the sex of the school principals and the performance of the schools in terms of dropout rate, $H(1) = 0.152$, $p = 0.697$, with a mean rank dropout rate of 6.67 for male and 7.73 for female. This result showed that sex of school principals and performance of schools in terms of dropout rate were not related. This indicates that efforts of the schools in reducing dropouts are not directly affected by the school principals' sex.

3.2. Educational Attainment and Dropout Rate

Table 7. Result of Kruskal-Wallis H Test for Educational Attainment and Dropout Rate

Educational Attainment	N	Mean Rank	df	Kruskal-Wallis H	p Value
Bachelor Degree with Units in MA	10	6.10	3	4.006	0.261
Graduate of MA	2	11.50			
MA with Units in PhD/EdD	1	11.00			
Graduate of PhD/EdD	1	10.00			

The null hypothesis which states that “There is no significant relationship between the educational attainment of the school principals and the performance of the schools in terms of dropout rate” was tested using Kruskal-Wallis H Test at 0.05 level of significance. In Table 7, the test revealed that there was no significant relationship between the educational attainment of the school principals and the performance of the schools in terms of dropout rate, $H(3) = 4.006$, $p = 0.261$, with a mean rank dropout rate of 6.10 for the school principals whose educational attainment is bachelor degree with units in MA, 11.50 for graduates of MA, 11.00 for MA with units in PhD/EdD and 10.00 for graduates of PhD/EdD. This showed that educational attainment of school principals and performance of schools in terms of dropout rate were not related. This indicates that efforts of the schools in reducing dropouts are not directly affected by the school principals’ educational attainment.

3.3. Qualification and Dropout Rate

Table 8. Result of Kruskal-Wallis H Test for Educational Attainment and Dropout Rate

Qualification	N	Mean Rank	df	Kruskal-Wallis H	p Value
Promoted as Principal prior to NQESH	7	7.86	2	1.094	0.579
NQESH Passer	6	6.50			
Not NQESH Passer	1	11.00			

The null hypothesis which states that “There is no significant relationship between the qualification of the school principals and the performance of the schools in terms of dropout rate” was tested using Kruskal-Wallis H Test at 0.05 level of significance. In Table 8, the test revealed that there was no significant relationship between the qualification of the school principals and the performance of the schools in terms of dropout rate, $H(2) = 1.094$, $p = 0.579$, with a mean rank dropout rate of 7.86 for the school principals who were promoted as principal prior to NQESH, 6.50 for the school principals who were passers of NQESH and 11.00 for school principals who were not passer of NQESH but acting as principal. This showed that qualification of school principals and performance of schools in terms of dropout rate were not related. This indicates that efforts of the schools in reducing dropouts are not directly affected by the school principals’ qualification.

3.4. Sex and Result of National Achievement Test

Table 9. Result of Kruskal-Wallis H Test for Sex and Result of National Achievement Test

Sex	N	Mean Rank	df	Kruskal-Wallis H	p Value
Male	3	7.33	1	0.006	0.938
Female	11	7.55			

The null hypothesis which states that “There is no significant relationship between the sex of the school principals and the performance of the schools in terms of the result of National Achievement Test” was tested using Kruskal-Wallis H Test at 0.05 level of significance. In Table 9, the test showed that there was no significant relationship between the sex of the school principals and the performance of the schools in terms of result of National Achievement Test, $H(1) = 0.006$, $p = 0.938$, with a mean rank MPS in NAT of 7.33 for male and 7.55 for female. This result showed that sex of school principals and performance of schools in terms of result of National Achievement Test were not related. This shows that activities of the schools in achieving the national standard of NAT MPS are not directly affected by the school principals’ sex.

3.5. Educational Attainment and Result of National Achievement Test

Table 10. Result of Kruskal-Wallis H Test for Educational Attainment and Result of National Achievement Test

Educational Attainment	N	Mean Rank	df	Kruskal-Wallis H	p Value
Bachelor Degree with Units in MA	10	8.20	3	3.166	0.367
Graduate of MA	2	3.50			
MA with Units in PhD/EdD	1	5.00			
Graduate of PhD/EdD	1	11.00			

The null hypothesis which states that “There is no significant relationship between the educational attainment of the school principals and the performance of the schools in terms of result of National Achievement Test” was tested using Kruskal-Wallis H Test at 0.05 level of significance. In Table 10, the test showed that that there was no significant relationship between the educational attainment of the school principals and the performance of the schools in terms of result of National Achievement Test, $H(3) = 3.166$, $p = 0.367$, with a mean rank MPS in NAT of 8.20 for the school principals whose educational attainment is bachelor degree with units in MA, 3.50 for graduates of MA, 5.00 for MA with units in PhD/EdD and 11.00 for graduate of PhD/EdD. This showed that educational attainment of school principals and performance of schools in terms of result of National Achievement Test were not related. This shows that activities of the schools in achieving the national standard of NAT MPS are not directly affected by the school principals’ educational attainment.

3.6. Qualification and Result of National Achievement Test

Table 11. Result of Kruskal-Wallis H Test for Qualification and Result of National Achievement Test

Qualification	N	Mean Rank	df	Kruskal-Wallis H	p Value
Promoted as Principal prior to NQESH	7	7.57	2	0.397	0.820
NQESH Passer	6	7.83			
Not NQESH Passer	1	5.00			

The null hypothesis which states that “There is no significant relationship between the qualification of the school principals and the performance of the schools in terms of result of National Achievement Test” was tested using Kruskal-Wallis H Test at 0.05 level of significance. In Table 11, the test showed that there was no significant relationship between the qualification of the school principals and the performance of the schools in terms of the result of National Achievement Test, $H(2) = 0.397$, $p = 0.820$, with a mean rank MPS in NAT of 7.57 for the school principals who were promoted as principal prior to NQESH, 7.83 for the school principals who were passers of NQESH and 5.00 for school principals who were not passer of NQESH but acting as principal. This showed that qualification of school principals and performance of schools in terms of result of National Achievement Test were not related. This shows that activities of the schools in achieving the national standard of NAT MPS are not directly affected by the school principals’ qualification.

Conclusions

In the light of the foregoing discussion of results, the researchers had the following conclusions.

1. School principals in the public elementary schools of the Schools Division of Imus City who had served for two consecutive years in school years 2013 – 2014 and 2014 – 2015, majority are female (78.57%), had bachelor degree with units in MA (71.43%) and had been promoted as principal prior to the administration of NQESH (50.00%).
2. Fourteen (14) of the 26 (53.85%) public elementary schools in the Schools Division of Imus City that were studied, 12 (85.71%) recorded a decrease of dropout rate from SY 2013 – 2014 and SY 2014 – 2015 which indicates that efforts were being done to reduce dropouts.
3. The performance of the schools in the National Achievement Test remained a challenge. All studied schools were way below the national standard of 75% MPS.
4. The school principals’ demographic profile namely: sex, educational attainment and qualification, were not related to school performance in terms of dropout rate. This indicates that efforts of the schools in reducing dropouts are not directly affected by the school principals’ sex, educational attainment and qualification.
5. The school principals’ demographic profile namely: sex, educational attainment and qualification, were not related to school performance in terms of the result of

National Achievement Test. This shows that activities of the schools in achieving the national standard of NAT MPS are not directly affected by the school principals' sex, educational attainment and qualification.

Recommendations

In relation to the findings and conclusions of the study, the following are recommended.

1. Reclassification for new school principals may not be determined solely by passing of the NQESH. Other forms of assessing competence may be instituted on top of this examination.
2. Promotion of school principals to the next rank may also include achievement of set standards as criteria. Lesser weight may be given to criterion such as educational attainment.
3. Future studies may be conducted such as principal's organizational management for instructional improvement that can influence schools' performance.

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***Using GSP in Creating Concept Image on the Topic Theory Graph
for Eighth Grade Students***

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

The purposes of this research were to creating concept image, to study the achievement and to study the attitudes towards on the topic Theory Graph by using GSP. The research samples were 26 schooling eighth grade students for gifted child in science and mathematics curriculum from Valaya Alongkorn Rajabhat University under the Royal Patronage Demonstration School in the second semester of the 2017 academic year. The design of this study was the one group pretest-posttest design. Tools used in this research were Lesson plan by using GSP, the achievement test and the attitudes towards questionnaire. The achievement test had Reliability 0.78, Item Difficulty 0.31-0.71 and Discrimination Power 0.36-0.77. Time taken for this experiment was 23 hours. From evaluating the knowledge of students on the topics Theory Graph, students had the average score from total score 120 in pretest and in the achievement test equal to 83.42, and 108.88 respectively. After study, the students had better achievement at the level of significance .05. The students had average learning develop at 78.51% and lesson plan on the topic Theory Graph by using GSP had efficiency were at 96.64/90.74%. Students have a very positive attitude towards learning Mathematics by using GSP.

Keywords: Concept Image, Theory Graph, GSP, Gifted Child in Science and Mathematics Curriculum

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Introduction

Mathematics contents are abstracted by their natures and they are communicated with symbols that are not so easy to learn and to understand instantly. Thus, in Mathematics teaching, the students must be instructed so that they have reasonable, systematic and creative thinking abilities in solving problems. To induce such skills in class, it is necessary for students to know and understand the original of each topic. There are many problems in everyday life. Modeling using graph theory is an interesting solution because it makes it easier to understand the problem. Then, remove the model response explaining the situation that occurred in the real issue. Students can create a problem model using points and lines. This is the source of graph theory.

For the topic Theory Graph, its contents involve Graph, Degree of dots, Walk, Euler's Graph, and Application of Graph. Formerly, teachers usually tell the properties of Theory Graph and ask students to remember such properties. This teaching did not help students to understand and to memorize the concept; therefore, students were not able to apply their knowledge in solving problems. Hiebert & Lefevre (Hiebert, 2012), referred that both procedural and conceptual knowledge are considered as necessary aspects of mathematical understanding. In creating mathematics concept, it is necessary for students to have the "concept image", because students cannot solve various problems well by only attempting to memorize the concept definition. The concept definition differs from the concept image: the concept definition is to define mathematical meaning in form of words or messages whereas the concept image composes of more components stimulated by corresponding stimuli; Visual Representation, Mental Pictures, Experiences, and Impressions. (Tall, D. & Vinner, 2014) wrote that The concept image consists of all cognitive structure in the individual's mind that is associated with a given concept. The procedure of creating the concept image based on the Action-Process-Structure Theory which was developed by Heingraj has five steps: Interiorization, Coordination, Reversal, Generalization, and Encapsulation. (Heingrag, 2010) Students can apply these five steps in creating their own understanding for solving mathematics problems and link to new knowledge.

GSP is software that can be used in teaching geometry, algebra, trigonometry, and calculus. It was found from many resources that the GSP software can efficiently improve mathematical thinking skills and learning attitudes of the learners. However, for last 10 years, there are only 14 GSP-based reports in Thailand's databases and all appeared in geometry-area. The number of researches is very few when compare with research in field of educational technology.

Body

The purposes of this research were to creating concept image, to study the achievement and to study the attitudes towards on the topic Theory Graph by using GSP.

The research samples were 26 schooling eighth grade students for gifted child in science and mathematics curriculum from Valaya Alongkorn Rajabhat University

under the Royal Patronage Demonstration School in the second semester of the 2017 academic year. The design of this study was the one group pretest-posttest design.

Tools used in this research were Lesson plan by using GSP, the achievement test and the attitudes towards questionnaire. The achievement test had Reliability 0.78, Item Difficulty 0.31-0.71 and Discrimination Power 0.36-0.77. Time taken for this experiment was 23 hours.

Activity and instruction documents were used during learning in class, where as practice document was used out of class. Problems in instruction document and practice document and achievement test are resemblance, but problems in achievement test are more complicated.

There are three groups of questions in all documents except in activity document. Such questions are used to evaluate level of knowledge associated with the concept image as follows:

level 1 (Action conceptual understanding). In this level, the students can describe what are given in the problems and what are the questions of the problems.

level 2 (Process conceptual understanding). In this level, the students can step-by-step manipulate the given information in form of imaginative image in order to make proper solutions and know possible relationships among the information.

level 3 (Structural conceptual understanding). In this level, the students can give the correct answers to the problems.

The students were asked to perform pretest before class. In the class, students have to do the activity according to the concept image creating steps as follows:

Step 1 (Interiorization). This step involves explanation, comparison, and reflection of students' thinking that related to the given information. The students should have the ability to find out the conclusions from the given information and use them to create any corresponding images.

Step 2 (Coordination). In this step, the students should be able to create new information from existed information by creating possible connections between available information and created images in order to make new conclusions. This means, the students should be able to explain relationships between the created images and the given information.

Step 3 (Reversal). In this step, the students should be able to write down results obtained from the images that created under the given instructions.

Step 4 (Generalization). In this step, the students should be able to generate their conclusions or create new images in imaginative forms.

Step 5 (Encapsulation). This step is the explanation of the imaginative images in message forms. The students should be able to write down new corresponding conclusions in concept definition.

There are cooperative-learning between teacher and students during the activity. Some of students can chair their idea to others on each subtopic by presenting in front of the class. Two examples of problems in activity document are illustrated. In each example, students were asked to do step by step and gave the answers of each

question. Students were asked to explain “What do they learn from this activity”, and to give the conclusion in concept image and concept definition.

After that, they had to do the achievement test in 3 hours and also to complete a multiple choices satisfaction questionnaire. The achievement test has 20 problems with total scores 120. Each problem has 4 questions. Question number 1 and number 2 measures the action conceptual understanding, Question number 3 measures the process conceptual understanding, and Question number 4 measure the structural conceptual understanding. The score in question number 3 are three times of others questions.

Example of Activity and content on the topic Theory Graph is illustrated as follow.

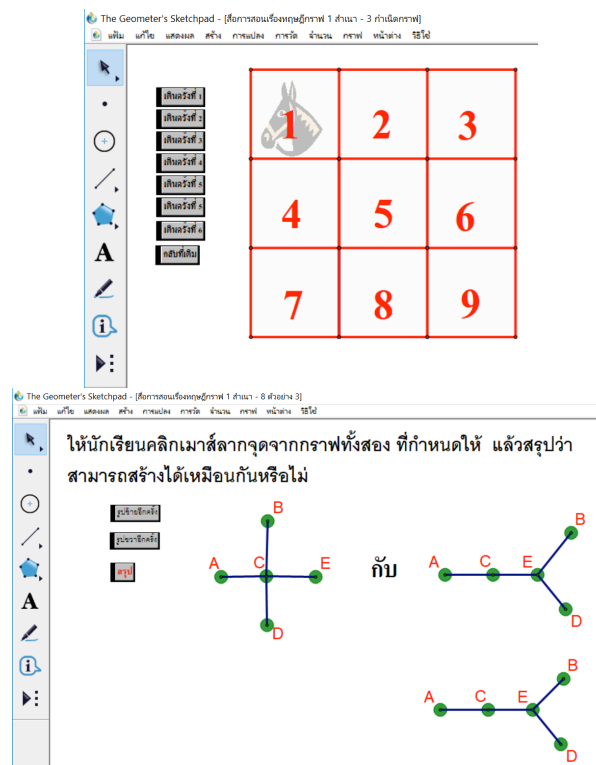


Figure 1: This is the Walk of Graph image.

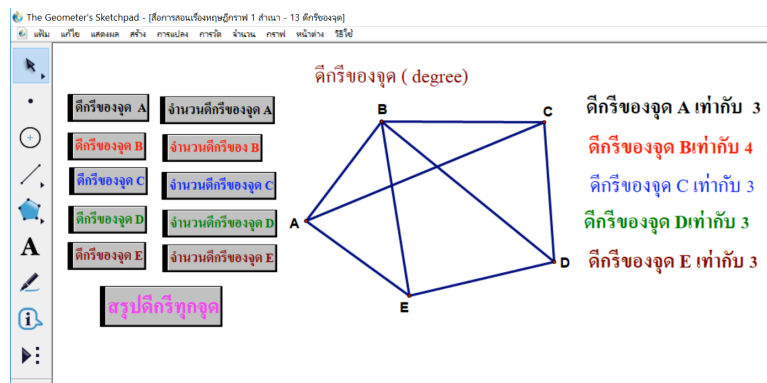


Figure 2: This is the Degree of Dots image.

It was seen from this example that the content is a little bit difficult than others in the instruction document. Students have to use the knowledge that they learnt from activity document and also their previous knowledge about the angle between the parallel lines.

For evaluating the students in the aspect conceptual understanding, learning achievement, learning behavior and attitude towards the topic Theory Graph and GSP utilization, we use the following criterions:

Level of knowledge associated with the concept image from achievement test

Table 1. Length of scores for evaluating the concept image.

Action conceptual understanding		Process conceptual understanding	Structural conceptual understanding	Range of knowledge
Q.1	Q. 2	Q. 3	Q. 4	
16– 20	16– 20	46– 60	16 – 20	Excellent
11– 15	11– 15	31 – 45	11– 15	Good
6 – 10	6 – 10	16 – 30	6 – 10	Satisfactory
0 – 5	0 – 5	0 – 15	0 – 5	Unsatisfactory

Level of learning achievement

Table 2. Length of scores for evaluating students' knowledge

Pretest and knowledge Test	Instruction document	Range of knowledge
91 – 120	127 – 168	Excellent
61 – 90	85 – 126	Good
31 – 60	43 – 84	Satisfactory
0 – 30	0 – 42	Unsatisfactory

Level of learning behavior

- 3.26-4.00 : very often practice;
- 2.51-3.25 : often practice;
- 1.00-1.75 : occasionally practice;
- 1.00-1.75 : rarely practice.

Level of attitude towards the topic Theory Graph and GSP utilization.

- 4.21-5.00 : highest satisfactory;
- 3.41-4.20 : high satisfactory;
- 2.61-3.40 : moderate satisfactory;
- 1.81-2.60 : low satisfactory;
- 1.00-1.80 : lowest satisfactory.

Conclusion

The average of the achievement of students after studying is higher than before at the level of significance .05. From total scores 120, the average score in pretest is 83.42 where as in the achievement test equals to 108.88. The learning achievements scores before and after class, of 26 students, are shown in Fig. 3.

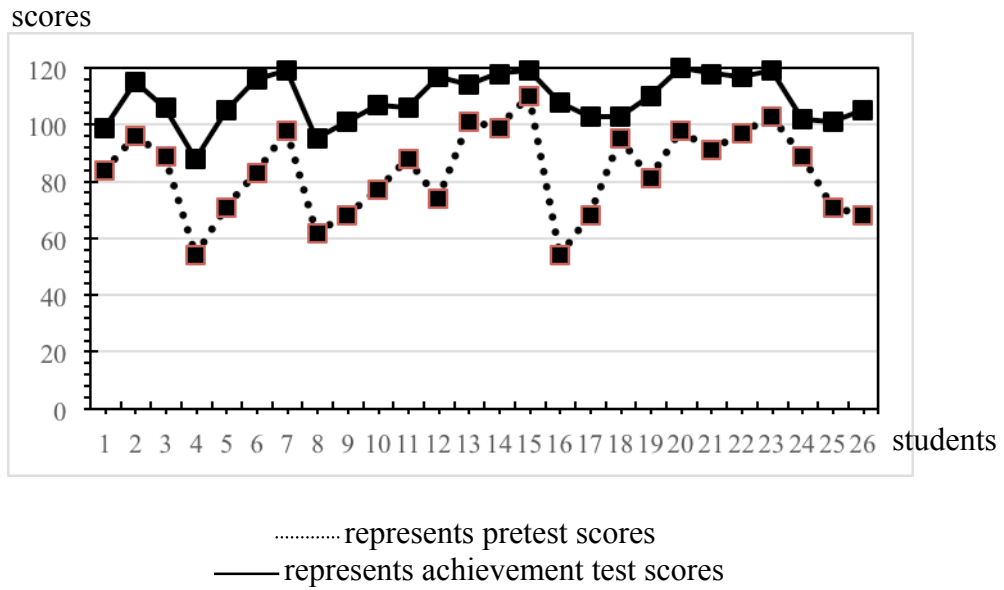


Figure 3. Learning achievements scores before and after class

From analyzing the various understandings, it was found that the average score of answering questions number 1 and 2 equals to 18.23 and 19.46, which means that students had “Excellent” in Action conceptual understanding. The average score of answering questions number 3 and 4 equals to 53.12 and 18.08 respectively, which mean that they had “Excellent” in Process conceptual understanding and had “Excellent” in Structural conceptual understanding. This indicated that the students are able to describe the information given in the problems and know what the problems ask for, and can express their thinking process; therefore, they can give the answers. Percentage scores of achievements test, classified by image concept understanding of 26 students, are shown in Fig. 4.

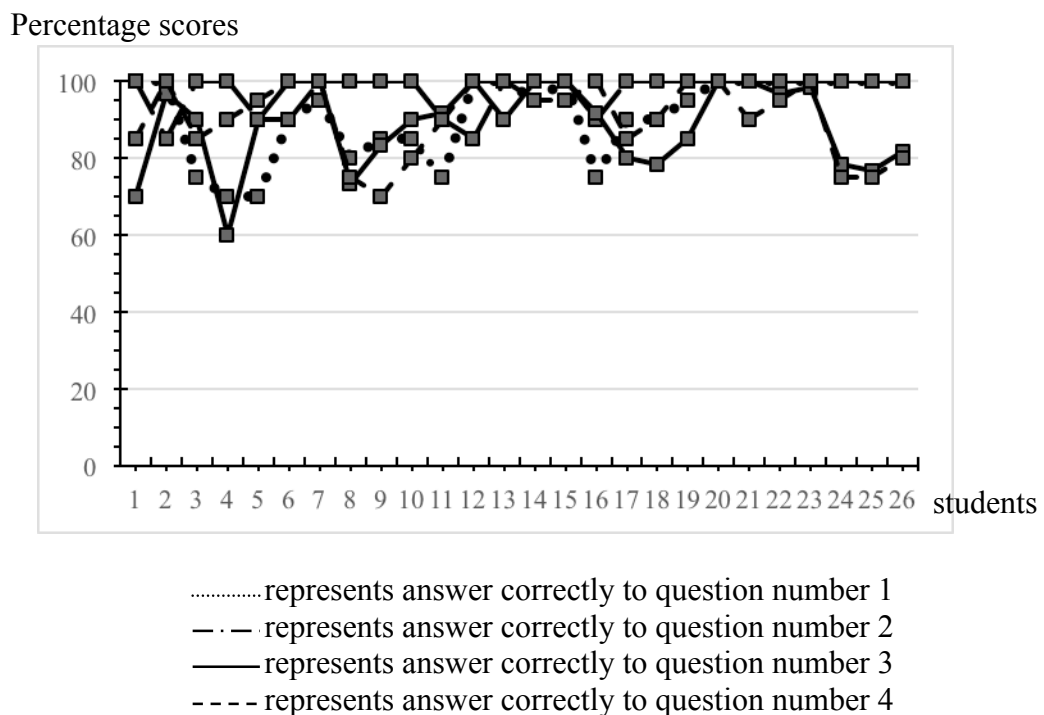


Figure 4. Percentage scores of images concept understanding

The students had average learning develop at 78.51% and lesson plan on the topic Theory Graph by using GSP had efficiency were at 96.64/90.74%, which means that the knowledge of students during engagement with instruction is in “Excellent” range. Therefore, the effect from learning activity can support the students to do their work in instruction document.

Four issues for discussion are considered.

1. Learning achievement before, during, and after class. It was observed that the average score of pre-test is in Good range, the average score during class is in Excellent range, and the average score in the achievement test is in Excellent range. This may be due to:

1.1 The problems assigned in instruction document are not too hard and not complicate. Most students can immediately give the answer after finished reading each item. The problems in the examination paper are difficult and complicate. Therefore, the students did not know how to use their formerly knowledge to build the concepts for analyzing and solving the problems. Such problems are very hard for students who have range of basic mathematics knowledge in an intermediate and weak level.

1.2 Time spent for studying in instruction document is longer than that one spent in examination. During the class, the students can relax and exchange their idea to each other, but for examination period, students have pressure from such given time. However, 15 hours for studying in class were not enough for the students to understand the lessons, because they have to learn about using GSP software and to study in new form of learning activity that they were not familiar with. This may be hard for the students to study both things simultaneously.

From the result of the achievement test, students are considered into two groups; the first one was a group that has the improvement in the level Good, and the second group has the improvement in the level Excellent. Students in first group understand the process associated with the concept image, they can illustrate their thinking and calculate for the solution correctly. Students in the second group also understand in the same manner but did not completely correct. Some knew the way to think but did not know how to explain.

2. Learning behavior, although students had good learning behavior both in class and out of class, but the performance was still lacked in intensity and continuity because of friend influences. Students should intend to practice exercise by themselves and to understand the content instead of remembrance, so that they are able to solve other problems differing from the given examples. If the behaviors are changed in proper way and are always done both inner and outer class, the students will gain more learning achievements.

3. Attitude in learning mathematics, it was clear that third years mathematic students majoring of education department can understand the nature of mathematics and appreciate to its values and advantages. However, the students still require more learning time which needs to be served. Additional period provision may be an

appropriate way in helping students for better understanding the contents and increasing their self-confidence.

4. The GSP usage, from using GSP in studying topic Theory Graph, it was found that students were able to understand the relationship between concept definition and concept image, but some of them were not able to use the software properly; they did not know how to use command and when one should use that. Using computer software in learning process will help learners to have an idea in solving problem. Enhancing of learning activities by technologies is a good idea; mathematics teachers should apply computer software as a tool for creating learning media of other topics in the future. (IPST, 2016) However, the most importance thing is the preparation of teachers. Teachers should have the ability both in using the context and choosing the suitable technology.

Acknowledgement

This research was financially supported by the Research and Development Institute of Valaya Alongkorn Rajabhat University under the Royal Patronage of Thailand.

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The Development of Competency of Creation of Learning Management for English Teachers by Coaching & Mentoring

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

The purposes of this research were: 1) to compare the competency of creation of learning management for English teachers by coaching & mentoring and 2) to study the English teachers' satisfaction towards the development of creation of learning management. The target group was 8 English teachers in Lamphun province (Thailand). The experiments instruments were: 1) the competency of creation of learning management form 2) pre-test & post-test 3) Learning Management for English Teacher Curriculum 4) the English teachers' satisfaction form. The findings of the research were as follows: 1) after taking this research, the scores of the competency of creation of learning management for English teachers had risen than those of the pretest before they were introduced by coaching & mentoring 5.13 points and 2) the scores of the English teachers' satisfaction towards the development of creation of learning management are in a good level ($\bar{x} = 4.29$), and the competency of creation of learning management for English teachers by coaching & mentoring has been beneficial to the English teachers.

Keywords: Competency of creation of learning management, English teachers, coaching & mentoring

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Introduction

At present, Thailand has been developing the economy and society as well as international. The main policy of every Thai government is to focus on the economic dimension that we have started to develop economic plan since the government of Field Marshal Sarit Thanarat. The first economic development plan was in 1961 – 1949 and was adjusted to reflect the social and economic situation.

Today, Thailand has adopted the 12th Economic Development Plan (2017-2021) which the Office of the National Economic and Social Development Board (NESDB) has formulated adhered to the 20-year National Strategy framework (2017 - 2036). This is the principal plan of the country development and the goal of sustainable development (Sustainable Development Goals: SDGs), including the restructuring Thailand to Thailand 4.0, as well as other reform agendas. In addition, the participation of all development actors has been emphasized at the professional level, the region level and country level in all stages of the plan extensively and continually in order to set out development directions and strategies to achieve the objectives of “Security, Prosperity, and Sustainability”, the NESDB regards participation by a broad cross-section of society to be a crucial principle in the drafting of this Plan.

The development of the country during the 12th Economic Development plan is a major turning point in connecting with 20-year national strategy in long-term strategic transformation into action. Furthermore, the development issues and the significant project are set in each of the 12th Plan that we can see the results in the first 5 years of the national strategy movement to prepare human capital, society and the economy for future challenges. Likewise, there are also a clear implementation as well as monitoring and evaluation procedures to bring about genuine development that is effective, beneficial, and sustainable for all. (Office of the National Economic and Social Development Board, 2017) In the ongoing developing this country makes the rapid changes in the social community both in urban and rural society, especially the using English to communication, so teaching English in all students' level is set in the Basic Education Core Curriculum. Studying foreign languages requires a thought process and the practice to communicate in various situations, in and out of the classroom, in order for the learner to use the language in real situations both spoken and written languages in grammatically correct and use appropriately in the culture. Besides, the ability to use English as a tool to acquire knowledge in other subjects, for continuing education and occupation is what to focus on.

The researcher was responsible for supervising the English major students teacher for many years, so I have the opportunity to share and learn with the mentors who are the target group. In Lamphun area, we found that English teachers in the schools which are the practicum network have difficulty in managing English classrooms due to several factors, for example 1) Teacher development courses do not meet the needs of English teachers and not consistent with the actual classroom conditions, so the teacher development process has not been successful. 2) Method and content of development are not the new models or innovations in line with today's technology and teaching focuses on theory rather than practicality with students in class. 3) The most training programs are short-term (only 1 – 2 days) and there is not a follow-up on how teachers develop or change their learning management behaviors.

Research Purpose

1. To compare the competency of creation of learning management of English teachers by coaching and mentoring.
2. To examine the satisfaction of the development of the English teachers towards the competency of creation of learning management by coaching and mentoring.

Scope of Research

This research aimed to study the development of the English teachers towards the competency of creation of learning management by coaching and mentoring.

Scope of Target group

The target group in this was 8 English teachers in Lamphun Province (Thailand).

Scope of Variables

Independent variable was coaching and mentoring.

Dependent variables included

- 1) the competency of creation of learning management of English teachers by coaching and mentoring
- 2) the satisfaction of the development of the English teachers towards the competency of creation of learning management by coaching and mentoring.

Methods to Create and Develop Research Instruments

This research is an experimental research study focused on the competency of creation of learning management of English teachers by coaching and mentoring. The procedures of develop research instruments were as follows:

1. To create the questionnaire to study the problems of creation of learning management and the requirement of target group which it was divided into 3-part: 1) personal information 2) the competency of creation of learning management and 3) the requirement of development of English learning management.
2. To create and develop the learning management for English Teacher Curriculum which the researcher had brought the information from the questionnaire to create the curriculum. After that the curriculum had check consistency of the contents, distinctness, and appropriateness of the language by three experts.
3. To create the quizzes for studying the achievement of the target group before and after development about the competency of creation of learning management by coaching and mentoring.
4. To create the satisfaction form which was divided into 2-part: 1) personal information and 2) a closed-end questions which the scales were separated into five-level rating scale and an opened questions which was a creation of message to express opinions of English teachers towards the

competency of creation of learning management by coaching and mentoring.

After that the researchers created the procedures to develop the competency of creation of learning management of English teachers by coaching and mentoring were as follows:

1. The 8-English teacher gave the information about the problems of creation of learning management by questionnaire and did the quizzes for studying the achievement (pretest).
2. The researchers coach and mentor the 8-English teacher about creation of learning management of English subject which they could design the lesson plan by using activities, games, songs, multimedia etc.
3. After that the 8-English teacher brought their lesson plan to teach and evaluate their students. Then the 8-English teacher did the quizzes for studying the achievement (posttest).
4. Assign the 8-English teacher to do the satisfaction survey on the development about the competency of creation of learning management of English teachers by coaching and mentoring.
5. The researchers collected the data of the quizzes for studying the achievement (pretest/ posttest), they analyzed the data by the statistics such as average, percentage, and standard deviation. And analyzed the data of do the satisfaction survey which the scales were separated into five-level scales.

Research Results and Discussion

The research title The Development of Competency of Creation of Learning Management for English Teachers by Coaching & Mentoring had data analysis details from the research as follows:

Results of Data Analysis

1. The information about the problems of creation of learning management by questionnaire found in 2-point: 1) the 8-English teacher could not apply the activities, games, or multimedia with lesson plan and 2) the 8-English teacher want to develop the competency to create the learning management with the high efficiency. Therefore the researchers took the data to design the curriculum for developing the competency of creation for learning management (30 hours).

2. The learning management for English Teacher Curriculum which the researcher had had check consistency of the contents, distinctness, and appropriateness of the language by three experts. After that the curriculum was appropriate to coach and mentor the 8-English teacher.

3. The evaluation of the learning management for English Teacher Curriculum was divided into 2-part found:

3.1 The knowledge and content of the curriculum found: after the 8-English teacher participated this research project, they were more understood about the creation learning management than before.

3.2 The satisfaction results of the 8-English teacher towards The Development of Competency of Creation of Learning Management for English Teachers by

Coaching & Mentoring had a mean score of 4.30 with a satisfied level of overall image.

Conclusions

The research title ‘The Development of Competency of Creation of Learning Management for English Teachers by Coaching & Mentoring’ can be concluded as follows:

1. From the study results of the development of competency of learning management for English teachers by coaching & mentoring in Lamphun province, it could be found that the average point before joining the research project was 9.5 and after the average point was 14.93 which the average point after joining the research project was higher than before.
2. The satisfaction results of the 8-English teacher towards The Development of Competency of Creation of Learning Management for English Teachers by Coaching & Mentoring had a mean score of 4.30 with a satisfied level of overall image. When was separated into 3-part found that 1) the satisfaction towards the appropriate curriculum and documents had the average at 4.38 with a satisfied level 2) the satisfaction towards the researchers had the average at 4.31 with a satisfied level and 3) the satisfaction towards the knowledge, content, and benefits had the average at 4.19 with a satisfied level.

Finding Discussion

The research title ‘The Development of Competency of Creation of Learning Management for English Teachers by Coaching & Mentoring’ can be discussed as follows:

1. From the study results of the development of competency of creation of learning management for English teachers by coaching & mentoring in Lamphun province, it could be found that, after participating the 8-English teacher had more understood the knowledge and content about the competency of learning management. From analysis the data, the researchers found the first factor that effect to the competency of learning management in English subject was the 8-English teacher could not apply the activities or other multimedia into lesson plan. As a result, teaching is not as effective as it should be. So that the researchers took this data to design the workshop curriculum to develop the English teachers by coaching mentoring for 30 hours. The workshop curriculum was divided into 2-part: learning theory and practical section, which the curriculum encouraged the English teacher to discuss each other. This is consistent with Amornkitpinyo Pimprapa. (2008), who defined the word ‘coaching & mentoring’ that the coaching & mentoring system was took to develop individuals in the organization, which the role of coaches was developed new personnel employees, explained about problems and how to solved the problems, gave an advice, suggested other details, and helped the new employees to have higher self-confidence. Moreover, the coaches was the supporters who encouraged the new employees could be passed the probation period. This is consistent with Faculty of Education, Nakhon

Ratchasima Rajabhat University, (2013), the research title ‘The development of teacher by the coaching & mentoring system project of Nakhon Ratchasima Education Area District Office Area 1’ found that the results of the teacher, who joining this project, were as followed: teachers could be take the knowledge, content, language skills, calculation, reasoning and learning management to apply with learning management by using Big 5 Learning Technic. The teachers might do the classroom research for developing learning management and their students could approve their language skills, calculation and had the higher achievement.

2. The satisfaction results of the 8-English teacher towards the development of competency of learning management for English teachers by coaching & mentoring in Lamphun province had a mean score of 4.30 with a satisfied level of overall image. When considerate each part found that the first point was the satisfaction towards the appropriate curriculum and documents had the average at 4.38 with a satisfied level because the curriculum had learning theory and practical section, it could be open the exchange opportunity about creation the lesson plan for teachers. After the English teachers joined the research project, they could be creation the lesson plan suitable with their students which effected the students’ performance. This is also consistent with Mejeang Areerak and Panawong Siriphron (2010), who said the content of curriculum was according with problems and requirement of the English teachers.

During the training period, the English teachers had opportunity to exchange each other, asked the question about learning management problems. Furthermore, the researchers had knowledge (content, activities, games, multimedia), friendly, and able to answer the questions which effected to the satisfaction of the participants.

Recommendations

Based on the findings above, the researchers have recommendations as below.

1. There should be take new technology and application to apply with learning management for motivate their students. Besides, it could be arrange learning management in various way.
2. The researchers should added the channel for exchanging learning management and followed up periodically which motivated and encouraged the English teachers to apply in the classroom.

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Integrating Neurodidactics Stimulation Into Blended Learning In Accomodating Students English Learning In EFL Setting

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

The article reports a research on integrating neurodidactics stimulation into blended learning in accommodating students' learning foreign language. The most important principles of neurodidactics and brain-based teaching are involved in motivation, emotion, learning, and memory. The learners' emotion about language affects their desires to learn a language. This study aims to examine (1) how can neurodidactic process of blended learning be applied to stimulate students learning in EFL setting (2) to what extent the integration of neurodidactics stimulation into blended learning stimulates students' emotion and motivation in acquiring English in EFL setting. The participants are 30 students of English Department of STKIP PGRI Jombang . They learn English as a foreign language Using qualitative data from observation and students' journal to provide the process of blended learning stimulated by neurodidactics and students' emotion and motivation in acquiring foreign language. The findings show that neurodidactics stimulation supports students' positive emotion and motivation to learn a foreign language. Based on this study, considering on students' brain work in teaching English as EFL setting is suggested.

Keywords: Neurodidactics; Blended Learning; Learning English as EFL Setting.

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Introduction

English as foreign language means a language which is not spoken generally in the surrounding community and environment. Scholarly inquiry into the acquisition of a non-native language includes the disciplines of psychology, linguistics, language pedagogy, education, neurobiology, sociology, and anthropology. Inquiries of learning and teaching innovations have provided new insights into successful language learning strategies and environments designed to increase language achievement and proficiency. English is one of foreign languages which is applied in Indonesia as a compulsory subject in a school from junior high school until university level. English has become increasingly important as a first foreign language in Indonesia. Many other related problems are encountered in implementation in Indonesian classrooms in junior, senior high schools and colleges or higher education levels. When learning process becomes central to English Foreign Language (EFL) learning, teaching preparation including teaching aids is fundamental for class success such as authentic materials, large class with mixed ability, teaching techniques, and teacher roles.

The progress in mastering the language acquisition is individual. No brain is able to process the information immediately. Every mind influenced by one's own experience and anatomic peculiarities processes and evaluates the information in a different way. Learning is a very complex process that cannot be influenced directly (Roth 2009, cited in Sabitzer 2011), but only through circumstances, teachers cannot change biological facts, such as gender-specific differences in brain structure and development or the hormone status which may have an effect on aptitudes and performance. Many teachers complain about the passive and unmotivated attitude of their students as well as the high noise level in the classroom where effective learning is not possible. However, they can take the students in consideration and try to understand the difficulties in learning and concentrating of our students in their adolescence.

The teacher should stimulate the students' emotion and motivation to support their learning process in acquiring English as a foreign language by activating their positive emotion, motivation, and cognitive. However teachers often neglect the emotional brain of their students in the teaching and learning process. Some teaching-learning processes make students in high psychological tension. In contrast, the students need to have comfortable, joy and save situation in order to lead their concentration. In learning learners need some psychological and artistic tools (Stevick, 1980). The psychological tools include liveliness, joy and cheerfulness in the learning environment

Many studies have been conducted to prove that teaching language by using blended learning which can bring innovation on traditional educational instruction. Teachers and technologists are searching for new and innovative ways to design learner-centered learning environments effectively, trying to engage learners more in the learning process. This blended learning method integrates several neurodidactical principles so it can stimulate the learning success in EFL setting. Some studies have provided evidence that technology can be used to enhance language learning effectively through the requirement of high-quality input. Zhao (2003) stated that the

use of technology seems to not only widen the perspective for learning a second language but also have positive implications for both the acquisition process.

Furthermore, teachers' experiences in integrating technology in their class are encouraging the supporters of technology in language learning. Technology has been considered as a beneficial resource for increasing comprehensible input, improving interaction, making learning authentic and creating encouraging learning environment (Byrom, 2005). Nevertheless, there is controversy related to technology and language learning. Recent studies find that students' social and spatial awareness is more developed in the face-to-face classroom rather than in the virtual class (Wuensch, 2008). A study carried out by Hui et al. in Diaz (2009) shows that virtual learning environment is better for vocabulary development but less effective in developing listening comprehension skills which are more successful in the face-to-face interaction.

Based on some studies above, teacher should choose appropriate method of teaching different types of students, to cultivate students' motivation, and to increase students' memorizing ability. Neurodidactics applied in foreign language teaching leads students into excitement of learning through inspiring and innovative strategies that reveal the amazing power of the brain and the hidden energy of the human spirit (Botwania, R & Saniewska, 2016). One possibility to increase learning success is to use some unconscious memory processes that support the function of sensory and working memory like the modality or multimedia effect in learning (Sabitzer, 2011). In this study, the concept is integrated to stimulate students' neurodidactics by employing virtual learning and face to face as a blended learning. It will be put into practice with the implementation of blended learning in English class as in EFL setting. It tends to merge traditional classes with elements of virtual education together (Finn and Bucci, 2004).

This study aims at examining on how neurodidactics can be applied to stimulate students in EFL setting and to what extent the integration of neurodidactics stimulation into blended learning stimulates students' emotion and motivation in acquiring English in EFL setting. Therefore the research questions are (1) how can neurodidactic process of blended learning be applied to stimulate students learning in EFL setting? (2) To what extent do the integration of neurodidactics stimulation into blended learning stimulate students' emotion and motivation in acquiring English in EFL setting?

Happiness and learning are identical things to our brain. feelings, emotions help in memorizing rules. Unfortunately, the teachers often neglect on the key to effective learning and a good long-term memory which are very essential in the process learning. It means that the teacher has to give some attention on opening mind, style of learning, concentrating and focusing on the learning process. The brain has a many ways how to store information for feelings the emotional memory. Teaching needs to keep alive to desire to learn. The curiosity for meaningful experiences is innate. Emotional involvement improves cognitive performance. By implementing blended learning, the learning process can encourage students' learning in foreign language because they get something new and challenging when they have to learn through virtual learning and face to face. They do not feel bored and feel happy since they do

not only study face to face with their teacher but also they study by virtual learning which the new technology may make them inspired and challenged.

New information that we perceive as unconsciously is checked immediately by the limbic system the evaluation system of our brain, that supports the learning of things that are new, good and important for us and rejects information that creates bad feelings (Roth,2009 cited in Sabitzer, 2011) Necessary information is first stored in the sensory memory and then elaborated and encoded in the working memory, if it is changed in a format that can be stored in the long-term memory. (Sabitzer, 2011). The limbic system itself is central in the control of emotional responses.

The limbic system supports a variety of functions including emotion, behavior, motivation and long-term memory. Emotional life is largely housed in the limbic system, and it has a great deal to do with the formation of memories. (Thompson, R.F. 2000).

The limbic system of the brain is a group of structures which govern emotions and behavior. One of the basic requirements of neurodidactics is an individual emotion . Based on the discovered capability of an individual, a teacher can develop a student's personality, emotion and motivation to learn foreign language.

For some teachers, blended learning is describing what they've been doing successfully for years. that is, using a range of resources and activities to provide individualised, student-centred learning experiences for their students. The term Blended Learning (BL) has become very familiar to English language training providers over the last decade. Blended Learning is used to describe all manner of training situations but in general can be described as combining "face-to-face instruction with computer-mediated instruction"(Graham 2007

1. Methodology

Research Design

This design is qualitative study with case study to describe what happened and explain why something happened by looking at a process of into blended learning stimulates students' emotion and motivation in acquiring English in EFL setting. This case study was implemented to answer the research questions (1) how is the process of neurodidactics stimulation into blended learning in EFL setting, (2) The integration of neurodidactics stimulation into blended learning stimulate students' emotion and motivation in acquiring English in EFL setting. Furthermore, case studies provide an in-depth description of a single unit. The "unit" can be an individual, a group, a site, a class, a policy, a program, a process, an institution, or a community. "Case studies can answer descriptive questions (what happened) or attempt to explain why something happened by looking at a process".(Ary, 2010)

Setting and Participants

This research was conducted in "STKIP PGRI", Jombang, East Java, Indonesia, The participants in a case study were taken from English Department of STKIP PGRI Jombang in the fifth semester. The number of the students was 30 students. They

learn English as a foreign language. The Students at this institution were from both rural and urban backgrounds with the mixed ability students. Most of the students are from medium and low level abilities.

Data Collection and Analysis

Observations and reflective students' journal were used to collect the data which captured the process of neurodidactics stimulation into blended learning applied learning English in EFL setting and students' Journals were used to capture students' emotion and motivation in acquiring English as a foreign language. The students were given a format to capture the process of learning and teaching in the classroom and the students emotion and motivation experiences during their class through the result of students' journal to capture their emotions and motivation which influence their long term memory.. Students were advised to write as many journal entries as desired per meeting in order to keep a map of their emotional and motivation experiences. Students were not be limited in terms of the type (negative or positive) of emotion and motivation to report, or in the number of journal entries to write per meeting. Every week students has responsible to submit their journal entries to the researcher.

In the journal entries, students become observers of their own emotional and motivational experiences and asked to record these honestly consisting introspective and reflections on their own experience. At the end of four meetings, 60 journals entries are on the study file. The data set was analyzed in two stages due to extensiveness. The first stage of analysis includes general reading after the students submitted their journals every meeting. A quick read allowed the researcher to have information about their emotion and motivation experienced. The second stage consisted of a detail reading in which specifics emotion and motivation experienced were highlighted and their source were identified.

Findings And Discussion

The neurodidactics process of implementing blended learning to stimulate students' learning in English foreign language setting

Various models have been adopted by the lecturers in implementing blended learning for enhancing students' learning outcomes. Lecturer combines virtual and face to face interaction with students. It relates to the concept of Blended learning which integrate face-to-face and virtual learning environment(Marsh, 2012).In this case, lecturer varies her teaching techniques in accordance with the discussed topic. Referring to the result of observation and interview, the steps in implementing blended learning is in the following:

Steps	Effects of Learning
Do brainstorming related to the topic	To dig up students' schemata
View the result of group discussion / individual summary which are posted on certain platform schoology a day or a week before the offline class.	to improve achievement of learning objectives by employing the appropriate use of technologies to match various learning styles
Ask students to respond their friends' posting virtual .	Cooperative work, task assignment ,social interaction, motivation among the

	mixed ability learners
Give comment virtual done by teachers and the other students	Give positive feedback
Ask each group or individual to present their work in front of the class with the help of media (poster, power point program)	Student exchange information, social interaction, output after learning and student centre approach.
Ask the audience to give comment and suggestion as well as ask questions	Active learning, social interaction , student centre approach.
Review and give feedback the result of presentation and discussion and quizzes	Students have positive washback.

The implementation of blended learning in English Grammar class tends to merge traditional classes with elements of virtual education together (Finn and Bucci, 2004), such as students are given space for expressing idea virtual through Schoology as well as presenting and discussing certain topics by face to face interaction.

Based on the result of observation on the process of neurodidactics stimulation in English foreign language setting by implementing blended learning. Learning can be done into the following steps:

a. Preparation

In preparation step, the lesson plan must be designed well including the a) instructional objectives b) the material c) teaching technique d) teaching media e) teaching and learning activities and f) assessment. The lesson plan is different in every meeting, it must be appropriate to the topic discussed.

The result of the first observation reveals that when the topic is about the adjective clause The teaching technique applied is grammar in pattern drills and communicative ways. The material prepared is about adjective clauses the instructional media used schoology. The students should do the instruction from the lecturer written in schoology. The Assessment form applied is on going assessment in writing context.

The result of the second observation reveals that when the topic is about the noun clause The teaching technique applied is grammar in pattern drills and communicative ways. The material prepared is about adjective clauses the instructional media used schoology. The students should do the instruction from the lecturer written in schoology. . The Assessment form applied is on going assessment in writing context.

The result of the third observation reveals that when the topic is about the participial. The teaching technique applied is grammar in pattern drills and communicative ways. The material prepared is about adjective clauses the instructional media used schoology. The students should do the instruction from the lecturer written in schoology. . The Assessment form applied is on going assessment in writing context.

b. Implementation

Pre-Activity

Pre-activity is dealing with brainstorming activity. The teacher activated the students' background knowledge in accordance with the topic discussed.

Whilst-Activity

Whilst-Activity refers to the main activity that divided into:

Pre Task stage in which the teacher explores the topic with the class and helps students to understand the task instructions by asking the students to create schoology for virtual learning and making a group for face to face learning. During Task which is combined between virtual learning and face to face learning.

In virtual learning the students perform the task in small groups discussion which are posted on certain platform schoology two days before the offline class. Then ask them to respond their friends' posting virtual. The last, the lecture gives comment by virtual.

In face to face, the students in a group should present their work in front of the class with the help of media (poster, LCD). Then the other students or audience should give comment and suggestion as well as ask questions. the last, the lecture gives feedback the result of presentation and discussion and quizzes.

Post-Activity

The lecturer asks the students to make reinforcement and reflection on the grammar class that day.

Based on the observation which has been conducted three times, it can be seen that the students may share or ask something confusing about the lesson to the lecturer and they can work alone, in pairs or small groups and try to solve problems in cooperation with their classmates (*cooperative learning, learning by teaching, re-encoding*). The lecturer only helps and supports the students if needed in their Schoology. Class Schoology provides great forums for students to practice their grammar in writing context. One of the most reason why students find schoology appealing that it is more authentic grammar activities both in pattern drills and in writing context as a wider audience has access to read posted entries which means students tend to put more effort into their schoology. The lecture can provide commentary to give some feedback furthermore the students can give comment, questions and feedback to their other friends'. So there is an interaction among students and teachers. Schoology also provides good opportunities for family members to see what their children are working on in class.

The brain has a many ways how to store information for feelings and the emotional memory. Teaching needs to keep alive to desire to learn. By implementing blended learning, virtual learning and face to face can stimulate students' s curiosity for meaningful experiences. Emotional involvement improves cognitive performance . "New information that we perceive as unconsciously is checked immediately by the limbic system the evaluation system of our brain, that supports the learning of things

that are new, good and important for us and rejects information that creates bad feelings” (Roth,2009 cited in Sabitzer, 2011)

The integration of neurodidactics stimulation into blended learning stimulate students’ emotion and motivation in acquiring English in EFL setting

Most students experience different emotions during their daily learning classes. It is useful to keep a record of the students different feelings, emotion and motivation. Students’ emotional and motivational experience journals involves five questions. (1) what emotions have you felt this week in your Grammar class?, (2) which of the emotions you have noted did you feel the most strongly (3) can you explain what happened and how you came to feel this way?, (4) What effects did you have on your motivation to learn English? (5) what did you do about it ?

Phase 1 : week 1

Students reported feeling more positive than negative emotion during four – week period. Students experiences positive emotion which are mostly provoked by motivating learning activities that caused feelings of self efficacy, thus re-energizing their motivational energy. Students can follow their lecture notes, do additional readings and get some feedback from their lecture by face to face while maintaining a positive attitude towards learning. This finding is supported by Lupshenyuk and Adams (2009) who indicate that blended learning has a positive impact on workplace learners' motivation to learn. These results are also supported by Al-Saleem et al. (2010) who report that a blended learning context provides students with opportunities to think and rethink, get prompt feedback, decreases peer-pressure, and increases self-esteem.

While a few students experiences a little negative emotion in the first phase because they feel lack of experience in virtual learning especially in Schoology application. They feel difficulty to for the first time they have to follow the instruction from the lecturer to do their task in schoology so it also influences their motivation to follow the class.

Phase 2 : week 2

This period is more positive dominated by positive emotions. Positive emotions are present after a class activity stirring up their interest in learning English because they can connect to a community anytime, and anywhere while they are learning by virtual learning. It is supported that blended learning Enables learners to be “together and apart—and to be connected to a community of learners anytime and anywhere, without being time, place orsituation bound” (Garrison & Kanuka, 2004). Students continues feeling good after learning by virtual through schoology program they may have small group in face to face learning to make it clear what they think about their idea on the materials discussed.

While in the second phase, students who do not have experience to do with schoology have learned how to learn and do the task through schoology so they can do the same way with their other friends. They have been motivated well than in the first phase.

Phase 3 : week 3

Emotion during this period is mostly originated by exams because it is time for midterms. Positive emotions are experienced due to class activities that students considers fun. Some students also experiences feeling more confidence in doing their exams because the exam should do in schoology so they can do anytime and anywhere before the deadline of submission. Some report realizing that they are learning by doing. It means that they can exchange information , share their difficulty in virtual way and other friends and the lecture will help and give feedback on their difficulty on the material being discussed and tasks.

Respecting this result of students' emotional and motivational experience journals supposes the following condition:

1. The motivational level must fit the dimension of a well-era didactic activity which can generate beneficial learning experience.
2. The teacher's instruction for students must be clear and simple so it is understandable.
3. A blended learning classroom, in which students can access both instruction and content in the classroom and virtual supports a student's ability to follow their curiosity, recognize and evaluate possible learning pathways, collaborate freely, and interact directly with content and peer sets all impact the confidence, curiosity, and motivation of a learner.

The result shows that foreign language students experience an array of negative and positive emotion during classroom instruction. Negative emotions are experienced during the grammar class in one semester. These emotions are caused by difficulty to use ICT especially Schoology program because the students feel that that program are the new one for them . Positive emotions are also experienced during the grammar class in one excitement, satisfaction and relaxation. These emotions come from learning activities that students get motivating, the way teacher teaches , the positive and innovative learning environment developed by the teacher. In line with Garret and Young (2009) said that emotions have been revealed as strongly impacting on foreign language learners' motivation not only in classroom instruction.

The findings of this study also show that current teachers should not ignore on educational neurodidactics to design an innovative and challenging model in order to stimulate students in accommodating learning language in EFL setting. To know how the brain works through neurodidactics stimulation certainly enhances the quality of teaching as well as encourage both teachers and students to employ in the process learning of foreign language. In this regard, teachers are encouraged to utilize the neurodidactive through blended learning. Moreover, this implies that by emphasizing the development of attention, working memory, and mood it will be possible to enhance students' ability to embed their knowledge in the long-term memory

Conclusion

Based on the finding, it is immediately obvious that blended learning is able to meet the learning objectives by employing the appropriate use of technologies to match various learning styles at the precise time. Another important aspect is technological advanced and the need for the students development of the media competence. It implied that blended learning is able to improve achievement of learning objectives by employing the appropriate use of technologies to match various learning styles at the precise time. Moreover, I mixed the use of virtual and face to face interaction in the teaching and learning process. It relates to the concept of Blended learning which integrate face-to-face and virtual learning environment. Students are given opportunity to convey their idea virtual through schoology program as well as communicating and discussing particular issues by face to face interaction with their classmates and lecturer. Language learning is a process replete with negative and positive emotions. Thus appropriate stimulation students' emotions is important for language teachers to enable them to help their students to make their emotions work for them and not against them.

The brain is generated to drive new connections by discovery and challenged. Paradoxically, the role of lecturer is as a facilitator. It means that a teacher is not to transmit information but help students find information and select the most essential bits of it. The second element is emotional aspect in the educational aspects. The middle part of the brain is considered the center of emotions. Memory and motivation are interrelated with emotions. They color humans' lives, strengthen our memories and they also function as strong motivators. The last finding has shown that emotions are a particular driving force in stimulating learning.

MacIntyre (2002) highlighted that the motivational properties of emotion have been severely underestimated in the language learning literature". Along the same lines, Dewaele (2005, cited in Lopez, 2011) calls for more research focus on affect and emotion in order to pay increased attention to the communication of emotion and the development of socio cultural competence in a second language. Schumann's (1998) neurobiology theory considers feelings and emotions as crucial to the understanding of second language achievement. According to him, learning a second or foreign language is manipulated by our emotions, and emotions shape behavior and perhaps all cognition.

Neurodidactics research has got a lot of attention in the world recently, the finding of neurodidactics research tells that teacher needs to realize the so called "brain adequate learning". Teachers should employ neurodidactics to stimulate students' learning in foreign language learning through strategies that reveal the amazing power of the brain and hidden energy of the human' spirit. The teacher should consider how the brain works because the more we know about how brain and memory work, the better we can enhance the techniques of the teaching and learning process. The teacher must not ignore the innovative and challenge class atmosphere to create students' positive emotion and great motivation in learning process. Then blended learning is one of methods that can fulfill the students who are brought up in the digital age and who expect to learn with the latest technologies.

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Low Proficient Students' Oral Interaction with Native Speaker of English as a Language Assistant in the Classroom

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

There are many students in Indonesia who are afraid of speaking in English. The lack of vocabulary, fluency, accuracy, and also exposure makes it difficult for students to be confident speaking English. This study entitled "Low proficient Students' Oral Interaction with Native Speakers of English as a Language Assistant in the Classroom" is aimed to investigate how low proficient students interact with a native speaker of English and what they feel following the conversation. This study uses qualitative research involving four 10th grade students in one of vocational high schools in Bandung, Indonesia. The sample is taken purposively in order to get the uniqueness. Observations were conducted in this study to observe four low proficient students' interaction with native speaker of English during 16 meetings. An interview is also conducted to find out what students feel when they have a conversation and whether they feel an improvement in their speaking skill. The data were collected based on observation and interview results. According to the observation findings, low proficient students experience an improvement in their speaking skill after interacting with a native speaker even if they faced difficulties. The interview results show that they are more confident in speaking English after having a conversation with a native speaker. Therefore, it is suggested that if it is necessary, the teachers make a collaboration or work together with native speakers in order to improve students' speaking skill.

Keywords: Low proficient students', Oral Interaction, Native Speaker of English,

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Introduction

English is the most important language in the world and has been known as the international language. In the process of formal teaching of four basic language skills (listening, speaking, reading and writing) in school, speaking is considered as the most important skill to master. In Indonesia context, there are so many students who have difficulties in speaking. They understand what the speaker says, but they do not know how to respond. Pinter (2006) states that speaking fluently and accurately is the hardest thing to do by the students because they should think and speak at the same time. This skill is important as a sender of message to other people orally. Conversation which occurs among two people (the speaker and interlocutor) will occur if they have the capability in speaking skill. The part of speaking skill which cannot be separated is pronunciation. If someone can pronounce correctly, they can be understood easily as what Harmer (2007) says that the most important thing in pronunciation is intelligibility.

In order to make students' pronunciation better, communicating with native speakers can also help students to develop their speaking skill as what Walkinsaw and Oanh (2014) find from his study that there were many advantages for students who learned English taught by native speaker such as improving their pronunciation and speaking skill. So, this study is aimed to investigate low proficient students' oral interaction with native speakers of English in classroom. This study is also expected to answer following research question:

1. How do low proficient students' oral interaction with native speakers of English by through Skype?
2. What do students feel when they have conversation with native speakers of English?

This study also is expected to give contribution to teachers, students, and further researchers. For the teachers, this hopefully can make them aware of the interaction with native speakers can be a very useful exposure for students. Whereas, for the students, this study hopefully can make students be more confident and want to try to interact with native speakers of English. For the other researchers, this study is expected to be used as an additional source especially for those who conduct a research on increasing student' speaking skill by interacting with native speakers of English.

A. Literature Review

Speaking

Speaking is one of human activities in delivering a message and one of language performances which people use to communicate. Bygate (as cited in Carter & Nunan, 2001) states that speaking in a second language involves the development of communication skill. A speaker needs to have the same language in order to communicate with someone else (Celce & Brinton, 1979). There are several characteristics of good speaker stated by Celce & Brinton (1979) as follows:

- a. Speakers need to consider their pronunciation
- b. Speakers need to consider their grammar

- c. Speakers need to consider the rules of sentence formation and the selection of vocabulary

Those statements are also supported by Georgio & Pavlou (2003) that a speaker needs to consider their fluency, pronunciation, and discourse management. Harmer (2002) states that there are two main elements of a good speaker: language features and mental or social processing. Language features is when the speaker needs to consider their speech, expressive devices, lexical, and grammar. Mental or social processing is when the speaker get the information from the interaction.

Difficulties of Speaking

Speaking another language is not that easy since they need to say and think at the same time. There are several difficulties which make speaking difficult to master according to Brown (2001): Clustering (fluent speech is usually phrasal, not word by word), redundancy, reduce forms (contractions, elisions, reduced vowels, etc.), performance variables (hesitations, pauses, backtracking, and corrections), colloquial language (words, idioms, and phrases), rate of delivery (speed), stress, rhythm, intonation, and interaction. He also adds that the biggest problem for a learner is not the complexity of words, sounds, phrases, and discourse forms, but the interactive nature of communication. So, conversation makes a learner know how to say things and when to speak.

Interactional skills requires many things that a learner need to be able to such as express purpose, recognise other speakers' purpose, express agreement, express disagreement, elicit opinions, elicit information, questions assertions made by other speakers, modify statement or comments, justify or support statement or opinions of other speakers, attempt to persuade others, repair breakdowns in interaction, check their understanding, establish common ground, elicit clarification, respond to request, correct themselves or others, indicate understanding, and indicate uncertainty (Hughes, 2003). He also states some skill in managing interactions: initiate interactions, change the topic of an interaction, share the responsibility, take turn, give turn, come to decision, and end of the interaction. Those skills can be very difficult to master by low proficient students in Indonesia whose English as a foreign language. According to Harmer (2007) there are some problems occur in pronunciation teaching and learning as follows:

- a. What students can hear
Some students have difficulty hearing pronunciation feature which we want them to reproduce.
- b. What students can say
As a person who lives in a country whose English is as foreign language, we lose the habit of making sounds because we have learned two languages since we were a kid.
- c. The intonation problem
The most problematic area of pronunciation is intonation.

Some of us have many difficulties to hear and identify the different patterns of raising and falling tones. The key to success teaching speaking is not so much getting students to produce correct sounds or intonation tunes, but let them listen and notice how English is spoken on audio or video or by their teacher either native or non native teachers.

Teaching Speaking and Conversation

In teaching speaking, a teacher needs to deal with students who have a problem in speaking either the students are shy or the students do not know what to say and respond. Harmer (2007) states that there are several ways to help students' problem with preparation, repetition, group talk, and mandatory participation. The activity can be varied such as acting from script, communication games, discussion, prepared talks, questionnaires, simulation, and role-play.

There are two approaches in teaching conversation: indirect and direct approach. Indirect approach in which the learners are more or less set loose to engage in an interaction and direct approach deals with planning conversation program around the specific microskills, strategies, and processes which are involved in a conversation (Richard, 1990). He also offers a list of features of conversation that can be a focus in a classroom instruction such as how to use conversation both transactional and interactional purposes, how to produce both short and long turns conversation, turn-taking, opening and closing conversations, initiate and respond to talk, how to use both a casual and neutral or more formal style of speaking, how to use conversation in different social settings, repairing trouble spots in conversation, how to maintain fluency, how to produce talk in conversational mode, how to use conversational fillers and small talk, and how to use conversational routines. Other interactive techniques can also be applied such as interviews, guessing games, jigsaw task, ranking exercise, discussions, values clarification, problem-solving activities, role-play, and simulations.

Types of Speaking Classroom

According to Brown (2001), there are types of classroom speaking performance as follows:

- a. Imitative
In imitative classroom speaking performance, students can practice how to pronounce or say something in a proper way by imitating someone either the teacher or human tape recorder speech.
- b. Intensive
Intensive speaking deals with self-initiated or it can be pair work activity in which the learners practice some phonological and grammatical aspect of language.
- c. Responsive
Responsive teaching can occur in short replies to teacher- or student- initiated questions or comments.
- d. Transactional (dialogue)
Transactional language deals with the purpose of conveying or exchanging specific information.
- e. Interpersonal (dialogue)
In interpersonal language, students are required to maintain social relationships.
- f. Extensive (monologue)
In extensive language, students are required to have a try in oral reports, summaries, or short speeches.

Designing Speaking Technique

There some technique in designing speaking according to Brown (2001) as follows:

- a. Use technique that cover the spectrum of learner needs, from language-based focus on accuracy to message-based focus on interaction, meaning, and fluency.
- b. Provide intrinsically motivating techniques and encourage the students to learn the material so they are motivated and tell the students the purpose of the activities as well.
- c. Encourage the use of authentic language in meaningful contexts.
- d. Provide appropriate feedback and correction.
- e. Capitalize on the natural link between speaking and listening.
- f. Give students opportunities to initiate oral communication.
- g. Encourage the development of speaking strategies such as asking for clarification, asking someone to repeat something, using fillers, using conversation maintenance cues, getting someone's attention, using paraphrases, appealing for assistance from the interlocutor, using formal expressions, and using mime and non-verbal expressions to convey meaning.

Native VS Non-Native English Speaking Teachers

Being an English teacher needs to have good language proficiency level. Native English-speaking teachers (NESTs) are usually better than non-native English-speaking teachers (NNESTs) since native English-speaking teachers are already good at speaking, vocabulary, and grammar. Wahyudi (2012) states that there are many advantages in interacting with native speaker teachers. Ma (2012) also points that native speaker teachers are more communicative and interactive since they have higher proficiency level in terms of speaking.

According to Levis, et al (2017), students believe that English pronunciation should be taught by a native English speaking teacher since NESTs represent the ideal of pronunciation. Listening to a good model (a native speaker) will make good result for students. The reason why native speech in teaching has become valued is on account of the high importance attached to students' communicative in the foreign language classroom and it becomes the ideal of the phenomenon (Kramsch, 1997).

It does not mean that NNESTs are not professional. Having NNESTs in the classroom also maintains some advantages since NNESTs can provide students with some information dealing with students' problems and needs, take advantage of sharing students' mother tongue, and have a solution for students who have difficulties in receiving new information (Medgyes, 1992). Kemaloglu-Er (2017) says that there are no significant differences between NESTs and NNESTs in terms of teaching roles and anagement classroom skills, but the differences are found in communication and pronunication skills.

NNESTs are more advantageous when they can share their experience in how they acquire English as their second language while NESTs are more reliable in order to share the culture (Widdowson, 1994). In line with Bayyurt (2006), he states that the more native English speaking teachers, the more students require linguistic and cultural backgrounds information. Both NNESTs and NESTs have their own strengths and weaknesses as a teacher in an EFL/ESL classroom. Teaching goes back to

teachers' competence in delivering the materials. NESTs are better in terms of speaking and NNESTs are better in dealing with students' problems.

NESTs also have some pedagogical issues. There are teaching abroad challenges for NESTs both pedagogical and non-pedagogical issues. Some pedagogical issues faced by NESTs are teaching method difference, language issues, students' classroom activity preference, and audibility barriers and non-pedagogical issues faced by NESTs are mutual trust establishment and countries' law (Luong-Phan, 2015). In her study, she suggests that NESTs teachers need a support such as knowledge about the country (law and culture) itself, teaching support (translator and teaching assistant), and administrative support.

According to Javid (2016), NNESTs and NESTs can be differed based on the use of English, general attitude, attitude to teaching the language, and attitude to teaching culture. In terms of the use of English, NESTs speak better, use real language, and use English confidently, while NNESTs speak poorer English, use 'bookish' language, and use English less confidently. In terms of general attitude, NESTs adopt a more flexible approach, are more innovative, are less empathetic, attend to perceived needs, have far-fetched expectations, are more casual, and are less committed while NNESTs adopt a more guided approach, are more cautious, are more empathetic, attend to real needs, have realistic expectations, are stricter, and are more committed. In terms of attitude to teaching the language, NESTs are less insightful, focus on fluency, meaning, language in use, and oral skills, colloquial registers, teach items in context, prefer free activities, favor group work/pair work, use a variety of materials, tolerate errors, set fewer tests, use no/less L1, resort to no/less translation, and assign less homework, while NNESTs are more insightful, focus on accuracy, form, grammar rules, and printed word, formal registers, teach items in isolation, prefer controlled activities, favor frontal work, use a single textbook, correct/punish for errors, set more tests, use more L1, resort to more translation, and assign more homework. In terms of attitude to teaching culture, NESTs supply more cultural information while NNESTs supply less cultural information.

Due to some fallacies that both NESTs and NNESTs may have, collaboration or team-teaching can be a powerful combination in order to improve students' skill especially speaking skill. The contribution that involve NEST and NNEST in the classroom can improve students' communicative competence (Tajino & Tajino, 2000).

Related Previous Research

A number of study have been conducted in investigating the collaboration of NNESTs and NESTs contribution in the classroom. Matsuda and Matsuda (2001) found out that a collaborative relationship between native and nonnative English speaking teachers are needed in order to develop their teaching styles. Oliveira and Richardson (2001) also found out that the collaboration between native and non-native English-speaking teachers not only intend to continue sharing teaching ideas and co-presenting, but also discuss collaborating a book.

Carless and Walker (2006) was interested in investigating the effectiveness of team teaching between native and non-native English-speaking teachers and the findings show that there is an improvement towards students' lexical knowledge and fluency in

speech and NNESTs' proficiency has developed as well. So, collaborative teaching has good impact on students and NNESTs. In another study Carless (2006) found out that collaboration teaching between NEST and NNEST provide students with an authentic environment to learn English and develop their confidence in using English for communication, develop innovative teaching and learning methods, and promote the professional development of the teachers. Jeon and Lee (2006) also found out that team teaching assists the professional development both NEST and NNEST teachers, assists the development of teaching materials, and build supportive working relationships.

Having both NEST and NNEST in the classroom make students better and according to Lasagabaster and Sierra (2005) in their study, their study showed that 60.6% students preferred a NEST as a teacher in the classroom but there were 71.6% students preferred both NEST and NNEST are the teacher in the classroom.

It can be seen that students also preferred to have both NEST and NNEST in the classroom since they have their own strengths and weaknesses. In line with Kung's (2015) study, he found out that students believed that both NESTs and NNESTs have different functions based on their teaching strategies and style. NESTs are natural listening and speaking teachers since they are native and NNESTs are better grammar and reading teachers from their learning experiences.

B. Research Methodology

This research was conducted using a qualitative case study design. A case study is used in order to investigate what really happen in real-life events. According to Yin (1994), a case study is an empirical inquiry which means that a case study is used to investigate a contemporary phenomenon in real-life events and the boundaries between phenomenon and contexts which are not distinguishable. The case study also inquiry copes with different situations, relies on multiple evidence, and benefits from the prior development of theoretical propositions. The main purpose of a case study is to understand a case in depth and it is also useful to answer descriptive and explanatory questions (Hamied, 2017). The result is going to explain what really happen in the real event rather than generalize the conditions.

Observation and interview were conducted in this study. Observation enables researchers to gather data on physical, human, interactional, and program setting (Cohen & Manion, 2000) and according to Merriam (2009), interview is a process in which the researcher and participant engage in a conversation focused on questions related to study.

Observation was used in this study in order to observe what really happen during the interaction of four students with a native speaker of English in the classroom during 16 meetings and interview was used in this study in order to investigate deep truth about what students feel when they have conversation with a native speaker of English during 16 meetings. The interview questions used Indonesian in order to make students understand the question better as what Alwasilah (2003) says that using respondents' native language will help the researcher to get more detailed data from the respondents.

There were four low proficient students of 10th grade from one of vocational high schools in Bandung, Indonesia. The participants were purposive participant in which they were chosen because they had low proficiency of English. Purposive participant means that the participants are selected because of who they are and what they know (Hamied, 2017). Then, the data were analyzed based on the observation sheets and interview result. The observation sheets were transcribed, coded, and categorized while the interview results were transcribed and analyzed.

C. Findings And Discussions

1. Observation Findings

The observation findings show that four low proficient students experience the improvement in terms of speaking skill. The students were observed in terms of several aspects: participation in class, student's enthusiasm, student's confidence, and oral interaction aspects (telling story, giving comment/asking, hesitation, doing a contact, speaking loud and clear, giving responses, grammatical correct, and initiating conversation). Based on the observation findings, S1 did not show his participation and enthusiasm in the first three meetings, then the student showed his participation and enthusiasm after three meetings. In aspect of showing confidence, S1 had lack of confidence during five meetings then his confidence increased after fifth meeting. In oral interaction aspect, S1 told the story after second meeting, gave a comment/asking after fourth meeting, did hesitation for the whole meeting, did a contact for the whole meeting, spoke loud and clear after third meeting, gave responses for the whole meeting, spoke grammatical correctly after fifth meeting, and initiated conversation after fifth meeting.

S2 showed the participation and enthusiasm after fourth meetings. In aspect of showing confidence, S2 had lack of confidence during six meetings then the student's confidence increased after sixth meeting. In oral interaction aspect, S2 told the story after sixth meeting, gave a comment/asking after sixth meeting, did hesitation for the whole meeting, did a contact for the whole meeting, spoke loud and clear after seventh meeting, gave responses after fourth meeting, spoke grammatical correctly after seventh meeting, and initiated conversation after fifth meeting.

S3 did not show his participation and enthusiasm in the first six meetings, then the student showed the participation and enthusiasm after six meetings. In aspect of showing confidence, S3 had lack of confidence during four meetings then showing confidence after fourth meeting. In oral interaction aspect, S3 told the story after fifth meeting, gave a comment/asking after fifth meeting, did hesitation in the first sixth meeting, did a contact for the whole meeting, spoke loud and clear after second meeting, gave responses for the whole meeting, spoke grammatical correctly after seventh meeting, and initiated conversation after sixth meeting.

S4 did not show his participation and enthusiasm in the first six meetings, then the student's participation and enthusiasm increased after six meetings. In aspect of showing confidence, S4 had lack of confidence during five meetings then his confidence increased after fifth meeting. In oral interaction aspect, S4 told the

story after fifth meeting, gave a comment/asking after sixth meeting, did hesitation for the whole meeting, did a contact after sixth meeting, spoke loud and clear after sixth meeting, gave responses for the whole meeting, spoke grammatical correctly after eighth meeting, and initiated conversation after eighth meeting.

2. Interview Findings

The interview was conducted to the four low proficient students and the results found out how low proficient students feel when they had conversation with native speaker, whether the students feel any improvement in terms of speaking skill, and whether the students feel more confident. There were four categories in interview. First category was about what they feel when they have conversation with native speaker (NS) for the first time, they found difficulties when they had conversation with NS and their confidence at the first time. Second category was about what they feel during conversation and their understanding. Third category was about the improvement that they feel and fourth category was about their confidence after having 16 meetings conversation with NS.

According to interview results, all four students had similar answers. Answering the first category, all four low proficient students felt nervous at the first time because they never talked to NS before and they did not know what to say and it made them feel less confidence. The difficulties that they found were NS accent and speed which were very hard for students to follow. Then, the second category, all four low proficient students still felt a little bit nervous but the more they spoke to NS, the better they felt and it helped them to understand the conversation better. The result from the third category was found that all four low proficient students felt an improvement in their speaking skill even if it was not that big improvement but they felt that they could speak English in daily life conversation better than before in terms of pronunciation and grammar. Last, fourth category, all four proficient students felt their confidence had increased because they had some experience in having conversations with NS.

D. Conclusion And Recommendation

Students' speaking skill can be increased by several techniques. One of the techniques which give a big influence is having conversation with native speaker of English. Students who had lack of exposure, grammar and vocabulary knowledge, and fluency and accuracy can improve their speaking skill by having conversation with native speaker of English. It is not only an improvement in speaking skill, but also they felt more confidence in speaking English. It is suggested to all English teachers who are non-native to have collaboration with native speaker of English in order to help students to improve their speaking skill.

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The Effectiveness of the Pragmatic Skills Intervention for Young Adults with Mild Intellectual Disability (with or without co-morbid Autism Spectrum Disorder)

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

Background: Trainers and teachers provided feedback that students with Mild Intellectual Disability (with and without co-morbid Autism Spectrum Disorders) faced challenges demonstrating the pragmatic skills necessary for them to be work ready. These students were studying in a special needs vocational school for students, aged between 17 to 21 years old. A pragmatic skills programme was developed and dovetailed into their work skills training lessons. **Purpose:** This study explored the effectiveness of the pragmatic skills intervention. **Methods:** In a single group observational study using pre/post-test design with a three-month follow-up, six students received pragmatic skills intervention during their WST lessons once weekly for four months from a Speech and Language Therapist (SLT). Beyond SLT's presence, teacher and trainers would also request the students for the targeted pragmatic behaviours during their WST lessons. **Results:** All students utilised more pragmatic skills at post-test and 3-month follow-up, with notable improvements observed for the ability to initiate a simple speech act. When students showed regression in their scores at 3-month follow-up when compared to post-test scores, they were still an improvement of pre-test scores. The prevalence of students regressing in their newly learnt behaviours of nonverbal communication and speech intelligibility were much lower compared to speech acts at 3-month follow-up. Achieving significant improvement in a new skill might diminish skill regression. **Conclusions:** All students utilised more pragmatic skills behaviours after the programme. Dovetailing the programme in the natural learning environment with constant attention on requiring targeted pragmatic behaviours were possible attributing factors.

Keywords: Mild Intellectual disability, Autism Spectrum Disorder, pragmatic skills, workforce ready.

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BACKGROUND

APSN Delta Senior School offers two pathways to eligible students with Mild Intellectual Disability from the age of 17 years to transit to the workforce or further training opportunities. First, a vocational certification leading to national certification in selected industry areas (horticulture, retail operations, food services, and hotel & accommodation services). Students who successfully complete the vocational certification programme will receive the Singapore Workforce Skills Qualifications (WSQ) that would facilitate their job applications in the open market, or further advanced vocational training at the Institute of Technical Education (ITE) to pursue the National ITE Certificate (NITEC) when they meet the pre-requisites admission criteria for the courses. Second, a 2-year progressive competency-based curriculum called LEAD Programme (LP) to work-capable students. Students in this programme could progress to the School-to-Work (S2W) Transition Programme that offer more customised training cum work options beyond the vocational certification pathways, or sheltered workshops.

The Year-2 LP students undergo a work skills training (WST) programme in their second year to prepare them for placement at post-school pathways, where they need to secure further WST for employment placement. Some examples of the work skills includes sweeping and mopping the floor, wiping furniture, assembling and disassembling boxes, packing and unpacking items.

In the course of completing a vocational task, practically, the student would need to use their pragmatic skills to communicate with others, “knowing what to say, how to say it, and when to say it and how to ‘be’ with other people” (Bowen, 2011). For example, during public cleaning, a member of the public might be standing at the location that the student needs to sweep. The student would need to be able to gain the attention of that person and initiate a simple interaction with that person, verbally or nonverbally. Generally, it was observed that when the public was not aware of the student’s presence and remained at that location, the students tend to either hover around the area for a while and leaves without sweeping or continue sweeping including sweeping the feet of the member of public.

LP teachers and trainers provided feedback that the pragmatic skills of their students were often observed to be inadequate and impeding their post-school placements.

Aim

This study explored the effectiveness of the Job Readiness Programme (JRP), a pragmatic skills intervention for young adults with Mild Intellectual Disability (with or without co-morbid Autism Spectrum Disorder).

METHODS

This was a single group observational study using pre/post-test design with a three-month follow-up.

Participants

The JRP was designed for the cohort of students from the Year 2 LP classes (n=13). Teachers divided the cohort into two groups depending on their readiness to attend WST lessons, with one group starting their WST lessons in January and the other group in March. Students with long term absenteeism (n=2), the group of students that were shortlisted to start their WST lesson in July (n=3), and students who exhibited pragmatic skills (n=2), were excluded from this study. Of the six students included in this study, five of them were available for the pre-test (in January), post-test (in May) and 3-month follow-up (in August) assessments and one student was only available for the pre-test and post-test assessments. The group of students who started their WST lessons in July, while excluded from this study, were provided support customised to their level of functioning when they started their WST lessons.

Interventions

The students had WST lessons twice weekly for two full days. Some examples of work skills training included sweeping and mopping the floor, wiping furniture, assembling and disassembling boxes, packing and unpacking items. Besides practicing to achieve competency in their work skills, they also need to demonstrate the ability to complete simple social interactions commonly necessary at the workplace, to increase their opportunities to secure further employment training placements. For example, initiate to inform their teacher/ trainer when they complete each task, ask their teacher/ trainer when they do not understand their work schedule, request for help when they require assistance.

The Speech and Language Therapist (SLT) joined the students in their WST lessons once weekly for one lesson block (1 hour and 50 minutes) in Semester 1 (February to May). The Enhanced Milieu Teaching (EMT) and Direct Instruction (DI) approaches were used to teach the students to utilise their pragmatic skills, and the prompt hierarchy was used to support the student to achieve independence in their task.

In addition to supporting the students in exhibiting appropriate nonverbal communication (eye contact, facial expression, gesture), and verbal communication (speak intelligibility, specifically speech volume, as well as speech acts, initiate to inform/request) to complete a simple social interaction, the SLT also at appropriate context created “road blocks” while they were trying to complete their vocational task. For example, while the student was practicing the skill of sweeping, the SLT would step on the litter that was on the floor and wait for the student to say “Excuse me please” before moving away.

Thus, besides having opportunities to practice their vocational skills, the students also had ample opportunities to practise initiating simple social interaction within their work stimulation context appropriately.

Available information showed that the enhanced milieu teaching approach improved the student’s social use of language (Hancock et al, 2016; Kaiser et al, 2013), direct instruction teaching approach had superior research compared with minimally guided instruction (Wheldall, 2014), and prompting had been effective in supporting young adults with or without ASD learn new skills (Neitzel et al, 2009). Besides availability

of evidences, these interventions were adopted because of their relative ease of implementation within the WST setting.

Beyond the SLT’s presence at the WST lessons, teachers and trainers also consistently elicited the targeted pragmatic behaviours during their WST lessons.

Outcome measures

The students were rated on the pragmatic skill variables (nonverbal communication, speech intelligibility, and speech acts) using a 5-point pragmatic skill scale (1 = unable to elicit; 2 = required verbal and physical prompts; 3 = required verbal and gestural prompts; 4 = required gestural prompts; 5 = initiated independently).

Inter-Rater Reliability

Inter-rater reliability (IRR) measures were taken for all pragmatic skill variables on all students who participated in this study by two teachers at pre-test, post-test and 3-month follow-up, and two APSN SLTs (from another two schools) administrated their assessment at post-test and at 3-month follow-up. While statistical measures of agreement between raters were not obtained with Krippendorff’s alpha of 0.402 among the teachers and SLT, and 0.339 among the three SLTs, all raters were in agreement in their rating directions as explained in Table 6.

RESULTS

In the analyses of this study of whether the JRP was effective, the students’ pragmatic skills scores at post-test and 3-month follow-up were compared to their pre-test scores. For the JRP to be effective as the students’ pragmatic skills intervention, their post-test or/and 3-month follow-up scores should be higher than their pre-test scores. The SLT’s assessment of the students’ pragmatic skills scores assessed at these three junctures were shown in **Figure 1**. Medians, ranges and standard deviations were provided in **Table 1**.

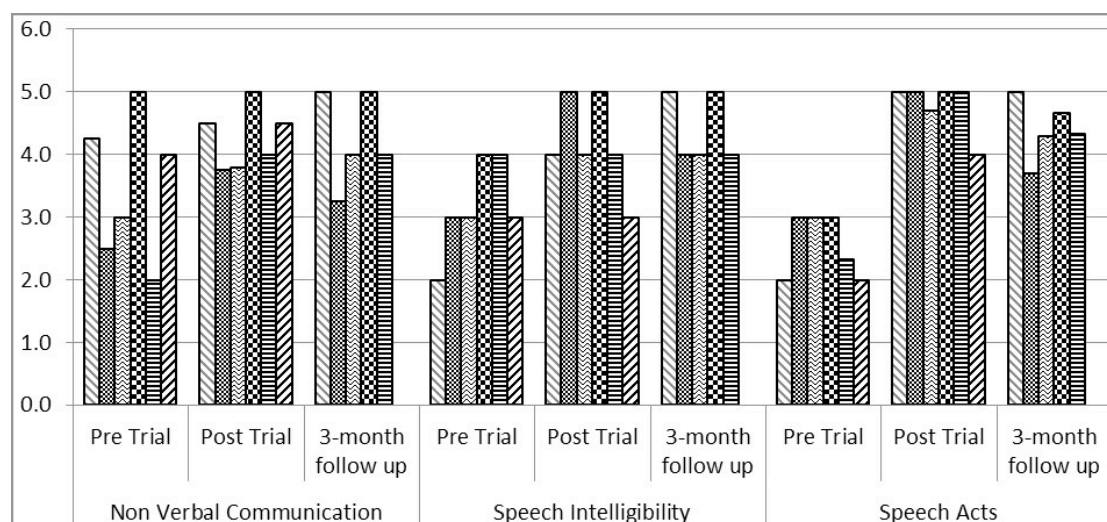


Figure 1: DSS SLT’s rating of students’ pragmatic skills at pre-test, post-test and 3-month follow-up

Table 1: Number (n), median raw score, range and standard deviation (σ) by Pragmatic skills variables rated by SLT 1

Rater: SLT 1	Pre-Test				Post-Test				3-month follow-up			
	Variable	N	Median	Range	σ	N	Median	Range	σ	N	Median	Range
Non Verbal Communication	6	3.50	2-5	1.145	6	4.25	3.8-5	0.490	5	4.00	3.3-5	0.750
Speech Intelligibility	6	3.00	2-4	0.753	6	4.00	3-5	0.753	5	4.00	4-5	0.548
Speech Acts	6	2.67	2-3	0.502	6	5.00	4.7-5	0.402	5	4.33	3.7-5	0.484

Nonverbal communication

Table 2 showed that the degree of the nonverbal communication scores relationship between the pre-test and post-test, as well as the pre-test and 3-month follow-up had strong statistical correlations and were statistically significant ($p < .05$). There was no statistical significance between the post-test and 3-month follow-up scores although there was strong statistical correlations. A student with high nonverbal communication scores at pre-test was a strong indicator to possibly achieve a high nonverbal communication scores at post-test as well as at 3-month follow-up.

Table 2: t-Test: Paired Two Sample (Nonverbal Communication)

<i>Nonverbal communication</i>	<i>Pre-Test</i>	<i>Post-Test</i>	<i>Post-Test</i>	<i>3-mth follow-up</i>	<i>Pre-Test</i>	<i>3-mth follow-up</i>
Mean	3.458	4.258	4.210	4.250	3.350	4.250
Variance	1.310	0.240	0.283	0.563	1.550	0.563
Observations	6	6	5	5	5	5
Pearson Correlation	0.905		0.893		0.853	
df	5		4		4	
t Stat	-2.67910		-0.24526		-2.79414	
P(T<=t) one-tail	0.02193		0.40916		0.02455	
t Critical one-tail	2.01505		2.13185		2.13185	
P(T<=t) two-tail	0.04387		0.81833		0.04910	
t Critical two-tail	2.57058		2.77645		2.77645	

Speech Intelligibility

Table 3 showed that the speech intelligibility scores between pre-test and post-test as well as pre-test and 3-month follow up were statistically significant ($p < .05$) while the scores between post-test and 3-month follow-up was not statistically significant ($p \geq .05$). Their strength of association between all scores was low. A high speech intelligibility score at pre-test had low indication that it would correspondent to high speech intelligibility at post-test or low speech intelligibility at 3-month follow-up.

Table 3: t-Test: Paired Two Sample (Speech Intelligibility)

<i>Speech Intelligibility</i>	<i>Pre-Test</i>	<i>Post-Test</i>	<i>Post-Test</i>	<i>3-mth follow-up</i>	<i>Pre-Test</i>	<i>3-mth follow-up</i>
Mean	3.167	4.167	4.4	4.4	3.2	4.4
Variance	0.567	0.567	0.3	0.3	0.7	0.3
Observations	6	6	5	5	5	5
Pearson Correlation	0.294		0.167		-0.218	
df	5		4		4	
t Stat	-2.73861		0		-2.44949	
P(T<=t) one-tail	0.02043		0.5		0.03524	
t Critical one-tail	2.01505		2.13185		2.13185	
P(T<=t) two-tail	0.04086		1		0.07048	
t Critical two-tail	2.57058		2.77645		2.77645	

Speech Acts

Table 4 showed that the speech acts scores between pre-test and post-test, as well as pre-test and 3-month follow-up were statistically highly significant ($p < .01$). And the post-test and 3-month follow-up were statistically significant ($p < .05$). The strength association between pre-test and post-test was moderate, between post-test and 3-month follow-up was low, between pre-test and 3-month follow-up was strong. A high speech acts score at pre-test was a good indication that a low speech acts score at 3-month follow-up would be unlikely. A high speech acts scores at pre-test had moderate indication that a high speech acts score at post-test was likely.

Table 4: t-Test: Paired Two Sample (Speech Acts)

<i>Speech Acts</i>	<i>Pre-Test</i>	<i>Post-Test</i>	<i>Post-Test</i>	<i>3-mth follow-up</i>	<i>Pre-Test</i>	<i>3-mth follow-up</i>
Mean	2.556	4.783	4.940	4.400	2.667	4.400
Variance	0.252	0.162	0.018	0.234	0.222	0.234
Observations	6	6	5	5	5	5
Pearson Correlation	0.418		0.116		-0.609	
Difference	0		0		0	
df	5		4		4	
t Stat	-11.03298		2.48088		-4.52431	
P(T<=t) one-tail	0.00005		0.03407		0.00531	
t Critical one-tail	2.01505		2.13185		2.13185	
P(T<=t) two-tail	0.00011		0.06815		0.01062	
t Critical two-tail	2.57058		2.77645		2.77645	

DISCUSSION

Changes in student's pragmatic performance between pre-test and post-test, post-test and 3-month follow-up, as well as pre-test and 3-month follow-up were shown in Figure 2. Medians, ranges and standard deviations were provided in Table 5.

Differences at Post-Test

It was observed that all students had shown improvements in their pragmatic skills at post-test when compared to their behaviours at pre-test. Notable differences were observed in all the students' ability to perform speech acts with greater independence.

When no difference was observed in a particular pragmatic variable between the three junctures of assessment, the intervention did not cause any student to exhibit

regression in his/ her pragmatic skills behaviours. It was noted that their pragmatic skills were at moderate to high levels before commencing JRP. Three such incidents were observed. Firstly, a student who obtained a 5-point rating for nonverbal communication score at pre-test, also obtained a 5-point rating for nonverbal communication score at post-test and at 3-month follow-up. Secondly, a student who obtained a 4-point rating for speech intelligibility at pre-test, also obtained a 4-point rating for speech intelligibility at post-test and 3-month follow-up. Thirdly, a student who obtained a 3-point rating for speech intelligibility at pre-test, also obtained a 3-point rating for speech intelligibility at post-test (the student was not available for assessment at 3-month follow-up).

Differences at 3-month follow-up

It was observed that all students had shown improvements or sustained their improvements in their pragmatic skills at 3 months follow-up when compared to their behaviours at pre-test.

When students showed regression at 3-month follow-up when compared to their post-test results, their results at 3-month follow-up were still an improvement compared to their pre-test results.

It was observed that comparatively students faced greater challenges sustaining their improved speech acts behaviour between post-test and 3-month follow-up, as opposed to improved nonverbal communication and improved speech intelligibility, a variable that shown notable improvements at both pre-test and post-test as well as pre-test and 3-month follow-up.

Nevertheless, there was an occurrence where the student was able to sustain a 3-point rating improvement for the speech acts variable at post-test to 3-month follow-up with no observable regression. This student exhibited the greatest improvement in speech act (from a 2-point rating to a 5-point rating) compared to his/ her peers. A significant improvement in the utilisation of the speech act might be an indication of the resistance level of regression for a newly acquired pragmatic skill.

It was also noted that the prevalence of students regressing in the utility of their newly learnt behaviours of nonverbal communication and speech intelligibility were shown to be low.

In addition, it was observed that the students could improve their pragmatic variables of nonverbal communication and speech intelligibility beyond the post-test phase.

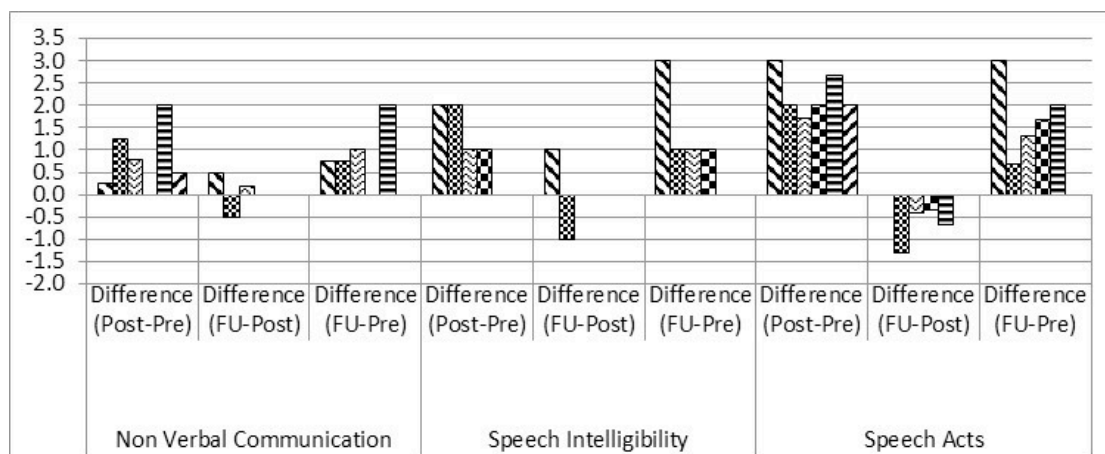


Figure 2: Changes in student's pragmatic performance between pre-test and post-test, post-test and 3-month follow-up, & pre-test and 3-month follow-up.

Table 5: Number (n), median raw score, range and standard deviation (σ) by Pragmatic skills variables of change in students' performance between pre-test and post-test, post-test and 3-month follow-up, & pre-test and 3-month follow-up.

Rater: SLT 1	Pre/ Post Differences				Post/ Follow-up Differences				Pre/ Follow-up Differences			
	N	Median	Range	σ	N	Median	Range	σ	N	Median	Range	σ
Non Verbal Communication	6	0.65	0.3-2	0.731	6	0.00	-0.5 to 0.2	0.365	5	0.75	0-2	0.720
Speech Intelligibility	6	1.00	0-2	0.894	6	0.00	-1 to 1	0.707	5	1.00	0-3	1.095
Speech Acts	6	2.00	1.7-3	0.495	6	-0.40	-1.3 to 0	0.487	5	1.67	0.7-3	0.857

Differences in rating between APSN SLTs

While the inter-rater reliability measure among three SLTs was not in statistical agreement under Krippendorff's alpha, identical rating directions were commonly observed in this study as shown in Table 6. Such agreements in rating directions provided practical confirmation of students' learning and progression.

Possible reasons for not obtaining statistical agreement between raters included insufficient rater discussion prior to rating, different opportunities to ascertain target behaviours, and the use of a conservative measure (Krippendorff's alpha) to calculate inter-rater reliability.

Table 6: Rating directions among three SLTs

Student	Agreements in rating directions among three SLTs
1	Identical ratings in 3-month follow up
2	Identical observation of student's regressed behaviours in 3-month follow up
3	Identical 4-point & higher ratings in 3-month follow up
4	Identical 5-point ratings for nonverbal comm + Intelligibility, above 4-point ratings for Speech Acts in post-test and 3-month follow up
5	Identical 4-point ratings or higher in 3-month follow up
6	Identical 3-point & higher ratings in post-test (student not present at 3-month follow up)

Differences in ratings between SLT and teachers

Both teachers' ratings were in agreement with the study's finding that the student utilised greater pragmatic skills at 3-month follow up compared to pre-test although there was no statistical agreement on the inter-rater reliability measure. The medians, ranges and standard deviations by Teacher 1 and Teacher 2 were provided in Table 7 and Table 8.

Table 7: Teacher 1 rating of students' pragmatic skills at pre-test, post-test and 3-month follow-up

Rater: Teacher 1	Pre-Test				Post-Test				3-month follow-up			
Variable	N	Median	Range	σ	N	Median	Range	σ	N	Median	Range	σ
Nonverbal Communication	6	3.00	2.8-4	0.557	6	3.50	2.8-4	0.719	6	3.88	2.8-5	0.858
Speech Intelligibility	6	3.00	2-3	0.408	6	3.00	3-4	0.408	6	4.50	3-5	0.983
Speech Acts	6	3.00	3	0.000	6	3.33	3-4	0.502	6	4.00	3-4.7	0.723

Table 8: Teacher 2 rating of students' pragmatic skills at pre-test, post-test and 3-month follow-up

Rater: Teacher 2	Pre-Test				Post-Test				3-month follow-up			
Variable	N	Median	Range	σ	N	Median	Range	σ	N	Median	Range	σ
Nonverbal Communication	6	3.00	2-4	0.749	6	3.38	2.5-4.3	0.683	6	3.88	3.5-4.8	0.585
Speech Intelligibility	6	2.50	2-3	0.548	6	3.00	3-4	0.408	6	4.00	3-4	0.408
Speech Acts	6	3.00	2-4	0.712	6	3.34	3-4.3	0.587	6	3.85	3.7-4.7	0.384

CONCLUSIONS AND CLINICAL IMPLICATIONS

The results of this study showed that all students with MID (with or without comorbid ASD) utilised more pragmatic skills behaviours after the programme. Notable improvements were observed in their ability to initiate a simple speech act. When students showed regression in their scores at 3-month follow-up when compared to their post-test scores, their scores at 3-month follow-up were still an improvement compared to their pre-test scores. The prevalence of students regressing in their newly learnt behaviours of nonverbal communication and speech intelligibility was much lower than speech acts at 3-month follow-up although they made notable improvements on their speech acts.

This study suggested that a student with high nonverbal communication scores at pre-test was a strong indicator to possibly achieve a high nonverbal communication scores at post-test as well as at 3-month follow-up. A high speech intelligibility score at pre-test had low indication that it would correspondent to high speech intelligibility at post-test or low speech intelligibility at 3-month follow-up. A high speech acts score at pre-test was a good indication that a low speech acts score at 3-month follow-up would be unlikely. A high speech acts scores at pre-test had moderate indication that a high speech acts score at post-test was likely. In addition, achieving a significant improvement in utilising a new skill might provide an indication of the resistance level of regression for that new learnt skill.

Issues relating to skill generalisation from clinical setting were minimised as pragmatic skills training was dovetailed into the students' work skills training. The students learnt and practised using their pragmatic skills in the course of carrying out their vocational task as one set of action, similar to how typical learners learn.

Further possible reason for improvements in behaviours might also attribute to the constant prompts by their teachers/trainers for beyond SLT's presence. The collaboration of this programme might have increased the awareness and attention of staff to request for students to use the targeted pragmatic behaviours. This was in line with Parons' (2017) meta-analysis which suggest that the person(s) of focus is a significant mediator of intervention effect.

In this study, the students' speech intelligibility was primary rated on their speech volume. Besides physiological organic factors (e.g. vocal folds, breath support), speech volume might also be dependent on variables such as personality traits and psychological factors (Roy et al, 2000). The statistical findings obtained in this study of low association and significant presence between the speech intelligibility scores was in line with this tenet.

As students' main educators, a reliable assessment of their behaviours by teachers, trainers, and allied health professionals would be essential in a transdisciplinary setting. Similarly, this same importance applies to caregivers (Stolarova et al, 2014). This study highlighted the need for continual collaboration between student's stakeholders. It would also be an important consideration when exploring the possibility of extending the programme beyond school setting.

ACKNOWLEDGEMENTS

The author gratefully thanks the APSN Delta Senior School staff and students (2017 Year-2 LP class) as well as APSN (Chao Yang School and Tanglin School) SLTs for participating in this study.

Declaration of interest: The author reports no conflicts of interest. The author alone is responsible for the content and writing of this paper.

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***2C-2I-1R Approaches: Way to Reduce Math Anxiety
among Senior High School Learners***

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

This paper aimed at determining the possible solution to the Math anxiety of Senior High School (SHS) learners of Talangan Integrated National High School (TINHS). Alongside with teaching, the teacher-researcher explored different activities which promote the 2C-2I-1R approaches that the Department of Education mandated to be used for 21st century learners. These activities are TDAR (Think-Discuss-Act-Reflect) which is a collaborative approach, RMFD (Recall-Model-Familiarize-Decide) which is a constructivist approach, 4A's (Activity-Analysis-Abstraction-Application) which is an integrative approach, AICDR (Ask-Investigate-Create-Discuss-Reflect) which is an inquiry-based approach, and TTRA (Think-Talk-Read-Ask) which is a reflective approach. A survey on Math anxiety level among 100 SHS learners of TINHS was conducted and it was found out that they have a moderate level of Math anxiety (mean of 2.96). Different teaching approaches in teaching Mathematics, specifically Statistics and Probability, which is a core subject offered this 2nd semester of school year 2016-2017, are applied in classroom teaching. After exploring the different approaches in teaching and learning for a period of one month, the Math anxiety level was again measured using the survey question. Learners' Math anxiety level was computed to be at low level (mean of 2.26). The difference between the level of Math anxiety before the application of different approaches in teaching (2.96) and the level of Math anxiety after the application (2.26) was deemed significant using t-test. At the end of the study, recommendations were given to master teachers, school heads, district heads and officials, and to future researchers.

Keywords: mathematics, anxiety, performance

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Introduction

“Do not worry about your difficulties in mathematics;
I assure you that mine are greater.”
-Albert Einstein

Over the century, researchers, educators and mathematicians alike dealt on the issue of Math anxiety. It's a concept that originated from Eastern countries and is being studied thoroughly even by Western countries in the past decade.

Factors affecting Math anxiety can be attributed to many aspects. One is the Math teacher, either the present one or the past ones. Learners may have experienced a humiliating moment with a teacher, have clearly remembered the pain of body infliction caused by an instructor, or may have developed an intimidation on the teachers' style of teaching.

Another factor that can be considered is the world of numbers and symbols itself. There are those who just tremble with the sight of numbers and figures even when the teaching process has not yet started. They assume or tend to think that these figures will swallow or enshroud them totally.

And even the classmates and the environment can cause Math anxiety to learners. When some excel or seem to know more things than others do, pressure is created in the mind and heart of learners. They conclude that they cannot cope up with the subject even when they haven't tried with themselves how things in Math work.

With these factors associated with Math anxiety, many solutions have been proposed in many books and researches. There are those that focused on the strategy of studying to reduce Math anxiety. There are those that focus on mental and psychological aspect to try to minimize this problem. But none so far has tried teaching approach in giving solution to the present problem. Can different teaching approaches be the solution to reduce Math anxiety?

The Philippine government, through the leadership of former President Benigno Aquino III, has signed Republic Act 10533, otherwise known as the Enhanced Basic Education Act of 2013. Stipulated in one the sections of that law is that the education should make use of the following approaches: collaborative, constructivist, integrative, interrogative, and reflective. Talangan National High School has lived up with the standard of DepEd in executing these approaches in their different course offerings, namely, General Academic Strand, Caregiving, and Automotive.

Talangan Integrated National High School is located near the town proper of Nagcarlan, Laguna, just a kilometer before the busy market. It has existed for already 46 years, and its present head is Arturo R. Moreno, Principal II. As of this second semester, the enrollees of Senior High School in Talangan add up to 120 from four sections (GAS, Care, and 2 Automotive classes). Their subjects this second semester includes Practical Research, Pysical Science, Pagbasa at Pagsusuri ng Teksto, MAPEH, Biology, Automotive, Caregiving, and Statistics and Probability.

The Mathematics teacher (the researcher) noticed a very low performance in Mathematics, especially the automotive class, last semester. Many readings cite that low math achievement can be traced in Math anxiety. This is the reason why the researcher would like to investigate on this issue, and propose a solution which the teacher can implement within the bounds of learning-teaching process.

Conclusion

After a month of exploring different activities that highlights the different approaches in teaching, the 2C-2I-1R, the Math anxiety level of 100 SHS learners of Talangan NHS decreased significantly. The specific aspect of the studies that have been dealt with are the following:

- a.) Math anxiety of learners before the application of 2C-2I-1R approaches;
- b.) Mean level of perception of learners on the TDAR, RMFD, 4A's, AICDR and TTRA activities;
- c.) Math anxiety of learners after the application of 2C-2I-1R approaches; and
- d.) Significant difference level of Math anxiety before and after the 2C-2I-1R.

The findings that have been noted in this study are the following:

- 1.) The math anxiety level of learners before the application of 2C-2I-1R approaches is 2.96 which is interpreted as moderate level.
- 2.) All of the five different activities in were rated by the learners as very highly satisfactory.
 - a.) TDAR Activity (Collaborative approach) has a mean level of 4.39
 - b.) RMFD Activity (Collaborative approach) has a mean level of 4.61
 - c.) 4A's Activity (Collaborative approach) has a mean level of 4.38
 - d.) AICDR Activity (Collaborative approach) has a mean level of 4.29
 - e.) TTRA Activity (Collaborative approach) has a mean level of 4.37
- 3.) The math anxiety level of learners after the application of 2C-2I-1R approaches is 2.26 which is interpreted as low level.
- 4.) Using the t-test (paired sample means), the t_{comp} is 7.08 while the t_{crit} is 1.98. Since is $t_{\text{comp}} > t_{\text{crit}}$, the hypothesis that there is no significant difference in the math anxiety level of the learners before and after the application of 2C-2I-1R approaches is not sustained.

Based on the findings on this study, it is revealed that there is a significant difference on the math anxiety level of learners before and after the application of 2C-2I-1R approaches. Teaching approach help learners reduce their Math anxiety. The result of this study is supported by the meta-analysis of Hembree when he looked at the different studies done in Mathematics. He said that Math anxiety is related to negative attitudes toward Math. Since the learners in this study have a positive attitude regarding the activities they have undergone, as shown by their very high satisfaction rating, their Math anxiety is reduced.

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*An Analysis on the Perceptions of High School Teachers in Manila, Philippines
Towards Student Data Privacy and Its Legal Implications*

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

Information and communication technology (ICT) has been making its way into our lives since the invention of Internet and its applications, including the daily usage of internet social media. In recent years, it has conquered the education industry, providing school administrators and teachers a more challenging, yet effective and practical way of managing school operations. Teachers have been using technology-enhanced data collection and analysis as tools to aid their schools in planning, and implementing personalized, student-centered learning experiences for their students. While there are numerous positive effects, it goes without notice that privacy of students is being sacrificed. The Philippines enacted its privacy law, the Data Privacy Act of 2012 to protect its people from the growing use of data. As the law is relatively new, the researchers investigated the perceptions of high school teachers from public and private schools in Manila, Philippines towards data privacy and its legal implications. The methods used in obtaining the perception of the teachers were through an online survey using convenience sampling. The survey used a Likert scale in asking the perception of the teachers regarding potential lawsuits and data usage activities. Analysis administered for the perception are descriptive statistics, validity and reliability using Cronbach's alpha, and correlation of perception against different demographic profiles. Results show that the perception of the teachers show significance in age group and awareness of the data privacy law.

Keywords: Philippines, Data Privacy, High School

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Introduction

Schools of today are making the most out of the use of technology. The prevalence and use of computers, the Internet, and social media are continuously evolving and expanding; and concomitantly so are the legal, ethical, and practical implications in the employment sector and beyond (Cavivo, Majtaba, Muffler, & Samuel, 2013). As of the end of 2017, there were approximately 4.2 billion Internet users around the world, and Asian countries take approximately 2 billion Internet users (Internet World Stats, 2018). According to the National Association of Secondary School Principals (n.d.), school administrators and teachers have been using technology-enhanced data collection and analysis as tools to aid their schools in planning, and implementing personalized, student-centered learning experiences for their students. Though it seems that current technology has made access to data much easier and reliable, there are pitfalls to it and one is the increasing trend of sharing private student information (Bloom and Attai, 2016). This student information not only includes personal demographic information, but also student abilities, strengths and weaknesses, and habits and routines.

The rapid increase in data production and collection in schools have the potential to make students targets of cybercrime; which includes fraud, cyberbullying, and theft. In the past decade, several countries have produced data protection law to protect its citizens. In the Philippines, the ‘Data Privacy Act of 2012 (DPA)’ is a safeguard enacted by the government to such pitfall. According to the DPA, their main goal is to *“protect the fundamental human right of privacy, of communication while ensuring free flow of information to promote innovation and growth”*. As it is relatively new, this research would like to gather and compare perceptions of teachers from private and public high schools in Manila, Philippines on the act.

In this research paper, the group aims to provide answers an explanation to the following research questions: RQ1. Do teachers know the rights of the students' personal data? RQ2. Do teachers respect and protect the personal data of the students? RQ3. How does the teachers perceive legal threats in their role of data management? These questions inquire about the privacy concerns with the usage of social media and usage of personal data for academic use.

Review of Related Literature

Privacy is a right (MacCarthy, 2014). According to Yang and Wang (2014), it is the *“desire of people to choose freely under what circumstances, and to what extent, they will expose themselves, their attitude, and their behavior to others”*. In other words, a person chooses what information of his could be shared, disclosed, and used. There are rules created on privacy, with consideration to the context, because these *“govern the transmission of information and serve to protect the integrity of the context”*, as stated in MacCarthy (2014). With access to information just a click away, how can one be protected?

Data Privacy Systems

Data privacy is a common issue in today's technology-plagued society. Free speech is integrated into different social media platforms. Social media has been consuming

countless minutes of our everyday life and it is one of the primary sources of personal information, such as Facebook and Twitter, especially for the youth (Clemons and Wilson, 2015). An ethical problem revolving around sociology may occur whenever technology companies source data, in which a person may not be fully aware on the usage of their personal human data. User-generated media is rapidly increases and it is impossible for any human to scrutinize all of the data to see which media affects privacy (Smith, Szongott, Henne & Von Voigt ,n.d.). In 2014, an estimate of 2.5 quintillion bytes of data are created each day (Amihan, 2017).

The internet provides its users the opportunity to communicate with people around the globe, research and share information, and conduct podcasts, classes, and videos to name a few; and any of such connection to the internet could potentially be utilized in collecting and/or accessing data (NASSP, n.d.). These modes of communication through the internet transmit the littlest of information that is being uploaded into the web or in other words, whatever is inputted, can be retrieved and used.

Technology-enhanced data collection and analysis have *“the power to transform teaching and learning by helping educators identify and provide supports to all students, assisting teachers and school leaders in improving their instructional practices, and informing schoolwide improvement activities”* (NASSP, n.d.); Furthermore, these data can be used as reference and support in creating activities that can improve the educational system. According to Strauss (2015), most of the student data gathered in schools are through students' online usage or the information provided by teachers, staff, and parents; and this information may be composed of the student's demographics, school and discipline records, disabilities, medical history and records, and Individual Education Plan to name a few.

While having online database systems has its many advantages, it comes with its comparable responsibilities. Schools have collected student data which they had created, used, and stored over the years, through different means; and with this comes the obligation of keeping student information private (Bloom and Attai, 2016).

There have been recent controversies involving such obligation that took down at least two well-known companies namely 23andm3 and inBloom, the latter being a \$100-million non-profit corporation backed up by the Bill and Melinda Gates Foundation and Carnegie Corporation of New York (Boyd and Metcalf, 2014). The said corporation's mission is to personalize learning through the collection of student data and store these in a cloud for teachers to be able to track, customize lessons in real time, and share the records with educational tool developers for better and more effective construction of resources (Singer, 2013). However, a few months later, controversies arose which led to the company to shut down for reasons that there are no policies on the security of information and the amassing increase of information about the students that are stored, leading parents, school board members, and privacy lawyers to gravely object (Singer, 2013).

School administrators and teachers have it easier today when it comes to collecting and analyzing data at the school level because of technology (National Association of Secondary School Principals, n.d.). With the benefits and loopholes of online database systems, there must be safeguards to the usage of these data. School administrators must have policies, besides those of the government, to govern who can access

student information, how these should be stored, and what information can only be shared to private companies such as third-party vendors (Singer, 2013). Legal contracts and agreements must be clearly discussed, and the partner vendors are well-aware of the privacy laws on such as well (Bloom and Attai, 2016). As a provider of education, a school has the responsibility to protect its staff, stakeholders, and students, be it in physical form or through information systems, and how these are being managed within its environment (Aston, 2017). They are accountable as to what is being done to the information.

For students, each of them has personal, identifiable information in a school's database, for whatever purpose; and therefore, for their protection, there must be movements towards student data privacy as to present the "*legal and ethical limitations on the collection, use, sharing, and handling of student personal identifiable information*". (Bloom and Attai, 2016). In our technology-dependent society today, laws must be made to govern such handling of private information.

Free Speech Rights of Teachers

The credibility of teachers is affected by their social media content, in which the perception of the students show that teacher credibility affects whether it is acceptable for a teacher to have Facebook profile (Wang, Z., et. al., 2015). In light of this, teachers are believed to be disciplined whenever students' profiles are being monitored by educators, even when the profile is publicly accessible, since the students have rights over the information posted (Folger, T. S., et. al., 2009). Educational institutions might create strict rules for the use of social media by teachers and students if there is encouragement in the use of social media, whatever the medium. On the other hand, if there is discouragement or banning of the use of social media, the development of their innovative creativity may hinder (Folger, T. S., et. al. 2009).

Legal Implications of the Data Privacy Act of 2012

In the Philippines, with the rapid increase in internet usage, an act was passed to address 21st century crimes, specifically the concern on internet and information. This Act is known to be RA 10173 or otherwise known as the "Data Privacy Act of 2012".

The National Privacy Commission (n.d.) states that the Act "*(1) protects the privacy of individuals while ensuring free flow of information to promote innovation and growth; (2) regulates the collection, recording, organization, storage, updating or modification, retrieval, consultation, use, consolidation, blocking, erasure or destruction of personal data; and (3) ensures that the Philippines complies with international standards set for data protection through National Privacy Commission (NPC)*". It is the country's first comprehensive data protection law.

Based from Nicolas and De Vega Law Offices (2016), "*Data Privacy Act of 2012 protects all forms of information that are personal, private or privileged. It covers all persons, whether natural or juridical, with particular emphasis to companies or juridical entities involved in the processing of protected information*", though it is

worth noting that the law only protects private information, not of which are publicly accessible. Wapp (2017) defines private personal information as being:

- *About an individual's race, ethnic origin, marital status, age, color, and religious, philosophical or political affiliations;*
- *About an individual's health, education, genetic or sexual life of a person, or to any proceeding or any offense committed or alleged to have committed;*
- *Issued by government agencies "peculiar" (unique) to an individual, such as social security number;*
- *Marked as classified by executive order or act of Congress.*

When personal, private, or privileged data are to be collected and processed, the purpose must first be specified, legitimate, transparent, legal, and reasonable (Amihan, 2017; Wapp, 2017). Certain circumstances have been identified though as exceptions when it comes to processing of such data and Wapp (2007) stated these:

- *Consent of the data subject;*
- *Pursuant to law that does not require consent;*
- *Necessity to protect life and health of a person;*
- *Necessity for medical treatment;*
- *Necessity to protect the lawful rights of data subjects in court proceedings, legal proceedings, or regulation.*

Second, the consented information can be shared to only the agreed recipient. The information, kept accurate and relevant, must be used only for the stated and agreed upon purposes and kept for as long as reasonably needed (Amihan, 2017). Third parties, most especially, who process personal information must have and utilize contracts or other reasonable means that align with the Act's implementing rules and regulations (IRR) to "*ensure the confidentiality, integrity and availability of the personal data processed, prevent its use for unauthorized purposes, and otherwise comply with the law*" (Parsons, M. and Crawford, L., 2016). When unauthorized person has acquired any sensitive personal information or information that may be used to commit identity fraud, the personal information controllers must notify NPC within 72 hours as mandatory breach notification (Parsons, M. and Crawford, L., 2016).

Third, when the personal information is no longer needed, it must be securely discarded. It must not be visible and accessible to unauthorized parties (Amihan, 2017). When handled improperly, the Act states that one is punishable for up to six (6) years in prison or up to five million pesos (PHP 5,000,000), depending on the nature and degree of the violation (Amihan, 2017).

National Privacy Commission

A commission was created to enforce the R.A. 10173 or the Data Privacy Act of 2012. The National Privacy Commission is assigned to check and validate whether companies are compliant with the element stated in the republic act. The five (5) elements, as discussed in Amihan (2017), are:

1. Appointing a Data Protection Officer
2. Conducting a privacy impact assessment
3. Creating a privacy knowledge management program
4. Implementing a privacy and data protection policy
5. Exercising a breach reporting procedure

According to Amihan (2017), the Data Privacy Act of 2012 requires companies with at least 250 employees or have access to personal and identifiable information of at least 1,000 people to register with the National Privacy Commission and comply with the Act. Furthermore, as it is relatively new, many are still unaware that they are affected by the law (Amihan, 2017).

Research Methodology

The survey was developed and pretested on the respondents of private schools and public high schools, also known as government schools, in Manila, Philippines. Participants were collected through convenience sampling, in which the researchers sent survey request through the principals of the schools around Manila. Participants must be currently employed as a teacher full-time teacher in a government accredited school. The survey is voluntary, the teachers from each school were not forced by the principal to answer the survey. Out of 534 survey requests only 44 returned to answer the survey. The personal information gathered through this survey is kept intimate and is treated with utmost respect.

The survey, which consists of 25 questions, inquires about the online behavior of teachers, and perceived legal threats. The composition of the survey consists of 6 questions on demographic, 6 technical data, and 13 questions on perceptions, which are divided into three parts.

The questions on perceptions were initially 25 questions, but were then modified to and reduced to 13 questions. The reason for the decrease in questions is to maintain a good score on the reliability test using Cronbach's alpha. Then, perception questions were divided into three parts. The first two categories of questions about perceptions are adapted from information security and education literature, specifically the survey items related to Privacy Concern for Communication Tools, and Risk and Severity of exposing others were adapted from study of James, T. L. et al (2017) and Dhir (2016). The questions about legal implications are developed by the researchers with the assistance of lawyer specializing in education and working as a full-time professor in a university in the Philippines, and it is also based on the current Philippine laws about data privacy and cybercrime. These questions are on a Likert scale from 1 (Highly Disagree) to 7 (Highly Agree).

Table 1.
Sources of Survey Items

Constructs	Items Adapted From:
Privacy Concern for Communication Tools (PC)	Dhir (2016); James (2017)
Risk and Severity of Exposing Others (RS)	Dhir (2016); James (2017)
Perceived Legal Threats (PL)	Scale Developed by Authors

The framework of this research is based on the hypothesis that if the teachers are not efficient and knowledgeable about technology and data, then they are more likely to perceive threats. The researchers made four hypotheses to answer the research questions. Specifically, the first hypothesis (H1) connects that Privacy Concern of Communication tools is positively associated with Risk and Severity of Exposing Others; second hypothesis (H2) is about Risk and Severity of Exposing Others having a significant influence on Perceived Legal Threat; and lastly the last hypothesis (H3), which answers the main inquiry, is about Perceived Legal Threats have a significant difference between technical aspects and demographic profiles of the teachers.

Using the SPSS as a statistical tool, the researchers tested the measures of central tendency, with mean and standard deviation for the analysis of the Likert scale. Validity, reliability, and discriminant validity were measured for the sub constructs items in the survey.

Results and Discussion

As seen in Table 2, it can be observed that most of the teachers are females. Most of the age group comes from the Millennial generation, which was defined by Dimock (2018). Most of the teachers comes from private institutions. The teaching experience of the teachers range highly from 3-4 years, while the next large population comes from those who have though for more than 5 years. The teachers are taking graduate studies and have taken graduate degree exceeds those who only continue to teach with educational attainment of a bachelor's degree.

From the data, it can be inferred that the teachers are experienced teaching and handling students. Furthermore, the professional qualifications of the teachers relating to education are substantial. For most of the teachers, they have most likely have been exposed to the Data Privacy Act from its conception to its implementation by the time they started their teaching profession.

Table 2.
Demographic Profile of Teachers

Demographics	Category	Frequency (Percentage)
Sex	Male	11 (25)
	Female	33 (75)
Age Group	Generation Z (Born in 1997 – 2012)	2 (4.5)
	Millenials (Born in 1980 – 1996)	38 (86.4)
	Generation X (Born in 1965 – 1980)	4 (9.1)
School Type	Private	34 (77.3)
	Public	10 (22.7)
Undergraduate degree is in Education	Yes	31 (70.4)
	No	13 (29.6)
Highest Educational Attainment	Graduate Degree	12 (27.3)

Years of Teaching	Some Master's Units	17 (38.6)
	Undergraduate	15 (34.1)
	1-2 years	9 (20.5)
	3-4 years	23 (52.3)
	5-10 years	7 (15.9)
	>10 years	5 (11.4)

The questions asked for the technical knowledge of teachers related to the potential data breach of information that the teacher may accidentally release. Teachers could accidentally release students' information without warning, and thus they must be trained for data protection practices (Chou & Chou, 2016; Chou & Chen, 2016). The data Risk of Data Breach shows that there is a potential that the personal data of the students may be stored in a teacher's possession without the approval of the school.

The final count for the technical knowledge of the teachers are presented in Table 3. Majority of the teachers have knowledge about the laws covering data privacy in the Philippines. The researchers believe that if the teachers are knowledgeable in the laws regarding the rights of every person in the Philippines and their perceive legal threats is present in their mindset. This also answers **RQ1**, in which teachers know their rights and the rights of the students. Thus, it cannot be dismissed that the teachers are not apathetic to the laws protecting everyone when it comes to handling sensitive data. **RQ2** can also be answered in the information below, in which the teachers may have shared the data or have kept confidential data that can be potentially distributed. Respecting and protecting the data of the students may differ in definition for each teacher and having the ability to protect these data may also differ in terms of efficiency and use of different instruments.

Table 3.
Technical Knowledge of Teachers

Technical Aspect	Items	Answer	
		Yes	No
Risk of Data Breach	I keep the records of my students in my personal computer	32	12
	I save the records of my students in different tools (Drobox, flashdrive, email, Google drive, etc.)	35	9
	I have access to my students' personal data without signing any consent forms on disclosure	24	20
Knowledge About Philippine Laws	I have at least read basic information in Data Privacy Act of 2012	27	17
	I have at least read basic information in the Cybercrime Prevention Act of 2012	33	11
	I have at least read the Philippine 1987 Constitution	38	6

A good reliability of the Cronbach's alpha is greater than 0.7 (Peterson, 1994). The Cronbach's alpha of all the final survey items were greater than 0.7. As can be seen in Table 4, the survey items show a good indicator of reliability. Additionally, the

average for the PC and RS leans on the agreement that there is a threat to certain behaviors and activities that they perceive to be happening.

Table 4.
Reliability of Survey Items

Item	Cronbach's Alpha	Mean	Std. Dev.
Privacy Concern for Communication Tools (PC)	0.71	5.15	1.28
Risk and Severity of Exposing Others (RS)	0.73	5.43	1.33
Perceived Legal Threats (PL)	0.81	4.32	1.24

The final items in the survey, along with the means and standard deviations of each item are provided in Table 5. For each item in the PC, it can be observed that most of the answers tend to agree with the communication tools have some privacy concerns. As for items in RS, teachers can be seen to agree that their behavior may risk of exposing others. This can be seen to be related to the items in Table 3. As for PL, the perception of teachers is leaning towards being more on the neutral when it comes to their legal threats.

The role of the teachers in answering RQ3, could be initially identified by the results in the individual means of each item under PL. It seems that the teachers perception of legal threats is not high as opposed to the expectations of the researchers, in which it is expected to lean towards the scale of agreement.

Table 5.
Descriptive Statistics of Perception Items

Item Indicator	Item	Mean	Std. Dev.
PC1	Through social media, I can get Information	5.73	1.68
PC2	Through social media, I can share information	5.50	1.52
PC3	Others may experience leaks of personal information because of what I do on social media	4.45	2.19
PC4	If I use social media, it is likely that the personal information of some other people may be posted.	4.82	2.06
PC5	It is possible that other people's personal information may be shared by my use of social media.	4.59	1.85
RS1	If I shared somebody's personal information through social media, it could be harmful for that other person.	6.00	1.75
RS2	It could be unfortunate for a person if his or her personal information was spread by my social media activity.	6.14	1.41
RS3	Posting the grade of my students in a social media group or online education platform is not tolerable	4.42	2.04
PL1	It is acceptable that a teacher loses its license if they were put on trial for data privacy	4.41	2.15
PL2	I am vulnerable to lawsuits for my practice in handling student data	4.41	1.99
PL3	I think that my employer is responsible for potential lawsuits regarding student data, and I may pose as an	5.45	1.45

	accessory to such lawsuits		
PL4	Being unaware to some data privacy definitions makes me worried for my legal safety	3.41	1.74
	I see the Data Privacy Act can harm me in the current situation	4.41	2.15

PL5

(7-point Likert scale; 1 = Strongly Disagree to 7 = Strongly Agree)

In testing the three hypotheses, the results of different perceptions together with the technical and demographic data are correlated with each other. The results for the correlation of PC and RS were insignificant ($p > 0.05$), thus rejecting H1, which then it can be inferred that the perceived behavior for the privacy concern does not affect the risk and severity of exposing others. The results show that is not similar to the study by James (2017), in which there is a significance for similar items of RS and PC.

As for RS correlating with PL shows that they are positively significant ($H_2: 0.467$; $p < 0.01$), in which that there is a reason to believe that there is a legal threat if there is a high risk of exposing others.

Lastly, Table 6 shows significance are age, years of teaching, and have read the Data Privacy Act of 2012. This result is straightforward, in which it can be interpreted that as legal threats may come easily to teachers who have aged more and had taught more throughout years of teaching and work experience. The correlation for reading the data privacy law is set at 1 for those who have answered Yes, thus it can be inferred that those who have read the law about data privacy are much more concerned for legal threats. The results for the significance of some demographics and some technical knowledge does not fully supports the totality of H3. The results could be improved by reinforcing different options in the perceptions on legal threats.

Table 6.
Summarized Results for Correlation

Category	Perceived Legal Threats (PL)	
	Pearson Correlation	Sig. (2-tailed)
Age	0.629	0.000**
Years of Teaching	0.475	0.001**
I have at least read basic information in Data Privacy Act of 2012	0.352	0.019*

*Correlation is significant at: ($p < 0.05$); Correlation is significant at **($p < 0.01$)

Conclusion and Recommendation

It can be inferred that teachers in this study are more likely to perceive threats if they are aware of the potential lawsuits applicable to them based on their behavior. Overall, the threats of inhibiting the freedom of the teachers are near to neutral, and it can be implied that they may not see that potential lawsuits are imminent. Perhaps, due to the relatively new implementation of multiple data privacy laws, issues of lawsuits are not entirely visible to the teaching community. The perceptions on the privacy concern for the use of communication tools and risks of exposing others

shows that teachers could have potentially made minor breach in privacy of student data but shows little concern if there would be legal ramifications in the future.

Despite these findings, our study is without its limitations. There are numerous rooms for improvements and opportunities that can be explored. Perhaps, future research could dive into topics that involve a holistic environment of the school setting, where administrators, and the student body are involved. Aside from instruction, the professional and social environment among different countries would be potentially good for exploration. The study was done on a limited scope involving only the city of Manila in the Philippines, in which the results may differ dramatically to other regions of the country or differ from different countries.

Nevertheless, our study has investigated the legal perceptions of the teachers through the Philippine context. We believe that there is a wide potential for research in teacher behavior and data privacy. Our study introduces the different concepts of data privacy in the Philippine context, and it could serve Filipino educators well for building on the growing knowledge of data privacy and the views on its legal implications.

Acknowledgements

We would like to thank our professor Atty. Jocelyn Cruz, faculty and former dean of De La Salle University's (DLSU) College of Law, for encouraging us in making this research. We would also like to express gratitude to all of our colleagues, friends, and fellow teachers who have helped in gathering data. This research would not also be possible without the guidance of Dr. Ferdinand Pitagan, former chair of Educational Leadership and Management Department of DLSU, for his wisdom in being productive in research writing.

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***Mind Mapping and Science Performance of Grade 5 Pupils
of San Juan Elementary School, Sta. Cruz, Laguna***

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

This study aimed in determining the effect of mind mapping to the science performance of Grade 5 Pupils of San Juan Elementary School. Two strategies were executed by the researcher in order to analyze the performance of 40 pupils. For the direct teaching, the teacher delivered the topic on “Female Reproductive System” with proper procedure – from motivation to evaluation. Another strategy being executed by the teacher is by integrating mind mapping so as to evaluate the students’ understanding using the same topic. Using direct teaching and multimedia presentation, pupils obtained a mean of 2.15 and sd 1.66 in a 5-item quiz. On the other hand, integration of mind mapping generated a mean of 3.56 and sd 1.38. Lower coefficient of variation was observed in the result of integrating mind mapping (0.39) than the result of direct teaching (0.77), showing that integrating mind mapping in the teaching process generated a less varied scores than direct teaching. Using t-test for independent samples, assuming equal variances, the t-computed was -4.11 while the t-critical was 1.99. These values showed that integrating mind mapping has significant effect to the Science performance of the pupils. The conclusion is supported by the p-value 0.00. Recommendations to Science teachers, school heads, district supervisors and future researchers were given at the end of the study. Promotion of mind mapping in teaching should be one of the foci of educators. The teacher-researcher reflected also on the importance of involving the learners on the process of teaching-learning.

Keywords: mind, mapping, science, performance

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Introduction

Education is the process of transferring knowledge to the next generation. It is also preserving information so that the future generation can still benefit from the patience and determination of the past.

This is the reason why the Department of Education (DepEd) is continually improving the curriculum. From BEC Curriculum, to RBEC, then the Understanding by Design (UBD), and the latest which is the K to 12 Basic Education Program.

This K to 12 Basic Education program came from the concept in the international scenario. There are many countries around the world, even countries from Asia, which uses this twelve-year development program for the basic education, and the Philippines is already lagging behind this educational setting. Singapore has gone ahead of in such a way that they have already developed their high standard of education system. Many countries are importing their materials especially in Math and Science subjects. This country is topping in the list of quality education base from the internationally conducted contests and exams like the one being done by the Trends in Math and Science Studies (TIMSS).

But how should knowledge be transferred to students in such a way that the knowledge would be retained to them? Many studies have been conducted to investigate on the effectiveness of different strategies like cognitive approach, deductive approach, inductive approach, spoon-feeding approach, peer-tutoring, group activity, simulation, and many other means of instructing.

When it comes to Science subject, what would be an effective way so that students would easily grasp the concepts and connected ideas to a certain topic? This is the focus of this study.

The San Juan Elementary School started as an Annex to Bubukal Elementary School. It has been operating since 2006. The third batch of grade five has completed the course requirement from the Department of Education last school year 2016-2017. After the recognition ceremony, the Parents-Teachers Association pushed through its independency from Bubukal Elementary School and the local government granted the autonomy through the able leadership of Dr. Myra D. Collado.

There here are 40 grade five students and their Science subject is being handled by the researcher of this study. The topics in this subject follow the topics as line-up by DepEd under the K to 12 program. It includes the system of the human bodies, taking care of health, healthy foods, the ecosystem, plants and animals, our environment, and the universe.

To learn these topics, the teacher implements many strategies: experimentation, group activities, lecture method, exploratory activity, investigative projects, and mind mapping.

How is the mind mapping learning style in terms of the output in the exams and quizzes of these grade five students? Are they learning much in the same level or

degree that they learn using the lecture type method or the typical visual aid method? These are the questions that the researcher has in mind in the beginning of the study.

Conclusion

The two teaching processes being compared are classroom sessions without the integration of mind mapping learning style and classroom sessions with the integration of mind mapping learning style. Without the integration of peer mind mapping style, the learners got a mean of 2.15 and an SD of 1.66 out of a 5-item word problem quiz on the topic of “Female Reproductive System”. On the other hand, with the integration of mind mapping learning style, the learners’ mean is 3.56 and SD is 1.38. This shows that learners did better in the teaching-learning process when mind mapping learning style was integrated to learn concepts and skill in Science. Using t-test for independent samples, the T-critical is 1.99 while the T-computed is 4.11. Since the absolute value of the T-computed is greater than the T-critical, it can be said that there is a significant difference between the two means. The P-value 0.00 which is lower than the alpha 0.05 supports the claim that there is a significant difference between the scores in quiz without the integration of mind mapping learning style and with the integration of mind mapping learning style, thus, the implication that the teaching process affects the Science performance of grade 5 learners. When integration of mind mapping learning style is used alongside teaching and learning, higher Science performance is exhibited by the learners compare with the teaching process without the integration of mind mapping learning style. These findings reveal that mind mapping is of great value to the teaching of science. This is in agreement with Toi (2009) shows that Mind Mapping can help children recall words more effectively than using lists, with improvements in memory of up to 32%.

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Theories on Self-Reflection in Education

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

Self-reflection can be recognized as a process that gives students opportunities to stop and be reflective about the learning that has taken place (Davies, Herbst, & Busick, 2013). This study provides analysis of the existing theoretical background on the value and role of learner self-reflection in education in general and language education in particular. This paper will also discuss the perspectives of active classroom research based on the studies on reflective learning through journal writing. In addition, it will overview the contribution to the learners' awareness of journal writing as a medium of self-reflection of their language skill development and progress. In conclusion, this paper will suggest possible outcomes of reflective learning, such as pedagogical implications of perception, goal-setting, learning difficulties and motivation, together with curriculum-related aspects, such as setting customized curricular goals and adjusting activity choices.

Keywords: Self-reflection, Pedagogy, Teacher Development, Learner Development, Learner Autonomy

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Introduction

Self-reflection and its contribution to the field of general learner development has gathered abundant attention in research literature over recent years. The recognition of its significance in terms of learners' empowerment, encouragement and taking responsibility for their learning is undeniable. It can naturally activate further engagement with learning material, deepen learners' understanding of the topic and reinforce independent thinking and in that way create an effective learning environment. (Park 2003, Little 2007).

While on the learners' side the benefits could be clear and comprehensible (Noels 1999), the real challenge lies in finding similar benefits on the educators' side. This paper was designed in order to assist the educators on their way to deeper understanding and discovery of the implicit pedagogical value of their learners' metacognitive reflective processes, by describing the views on the general roles of self-reflection in pedagogy in the literature and offering an overview of the most common mediums of self-reflection in language pedagogy and their conceivable benefits for language educators.

The theoretical background that would be demonstrated in the next section and relevant for this research included research on the definition of self-reflection and its role in education in general, journal writing as reflection medium, and learner autonomy.

The Overview of Self-Reflection in the Literature

The research literature below illustrates all the possible connections between students' self-evaluation, self-reflection, autonomy development and diary writing in EFL classroom. It elaborates on theoretical background to the role of self-reflection in the learning process in general and second-language learning in particular. It also provides valuable explanation of the purposes diary entries serve as conceivable self-reflective medium in terms of building learner metacognitive awareness of their own learning and mastering successful learning behaviors as life-skill. (Sevilla, Gamboa, 2016)

Research on Self-reflection

The metacognitive process of self-reflection has received attention in the literature from various angles such as contribution to learning environment, learning process, learning and teaching styles. For instance, Sivasubramaniam (2011) has considered the basic and irreplaceable elements of constructivist learning environments, which include: the view of knowledge as mutually constructed between learners and instructors, the use of authentic activities and tasks, the provision of "stimulus for reflecting on experience", and the acknowledgement of "collaborative construction of knowledge through interpersonal associations/negotiations" (p.9). In pedagogical practice, such principles are to be translated into opportunities for meaningful reflective learning process, student initiated goal-setting in the classroom, learner autonomy and initiative, and opportunities to become active members of the learning community and to be able to drive lessons and "negotiate strategies and alter content" (Watson, 2001, pp. 140).

In the context of autonomous learning skills development and student-initiated goal-setting it was also claimed that self-reflection can be harmonized with the principles of student-centered learning that has called the attention of many scholars in the past few decades. (e.g., Gronich, 2004; Frances and Rose, 2009; Hickman, 2010; and Qasem, 2010 as cited in Sevilla and Gamboa, 2016)

Stevens and Cooper (2009) provide further perspectives on the nature of reflection and learning from experiences based on the work by John Dewey. They focus on how to perform effective reflection, describing it as an active, intentional, and journalistic cycle. (Stevens and Cooper, 2009 as cited in Desjarlais and Smith, 2011)

Dewey (1991) refers to reflection as to an active and intentional process that can begin with some discomfort with an experience and end with learning and deeper insights. According to Dewey, aspects of reflective thought include perplexity, elaboration, generation hypothesis, comparing hypothesizes, and taking action. In his later work Dewey emphasizes the positive roles reflection might play in fostering students' self-reflection, critical thinking, and in a demonstrable way development of professional values or skills. Dewey has defined reflection as "active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusion to which it tends" (p.9)

Boud et al. (1985) define reflection in the context of learning and equally to Dewey emphasize one's personal experience as the object of reflection, as referring to "those intellectual and affective activities that individuals engage into explore their experience, which leads to new understanding and appreciations" (Boud et al., 1985, p.19 as quoted in Lew and Schmidt, 2011, p.530). Moon (1999) describes reflection as a "form of mental processing with a purpose and/or anticipated outcome that is applied to relatively complex or unstructured ideas for which there is not an obvious solution" (p. 23). Lew and Schmidt (2011) view self-reflection as a:

Process which the learner undergoes to look back on his past learning experiences and what he did to enable learning to occur (i.e. self-reflection on how the learning took place) and the exploration of connections between the knowledge that was taught and learner's own ideas about them (i.e. self-reflection on what was learned). The authors claim that consistent engagement in both processes by the learners by practicing self-reflection lead to better academic achievement.

Finally, self-reflection, as seen by Lew and Schmidt (2011), reflects the view of self-reflection by Steven and Cooper (2009). As Steven and Cooper describe it and summarize the matter in an inclusive way, the reflective phase involves focusing on what as experience means and how it is related to past learning. In comparison, Schon (1983) has two processes: reflection-in-action and reflection-on-action, which he describes as components of the development of expertise. In terms of learner benefits from the process, some studies see self-reflection as a tool for motivating and enhancing learning, fostering autonomy and shifting some of the learning responsibilities from the instructor to the learner. (Noels 1999) Goal-setting and proactive use of strategies as logical outcomes of the reflective process are expected to enable learners to attribute success or failure to their own level of effort and strategy use, rather than factors outside their control such as luck or task difficulty.

This ability empowers learners and helps them develop a greater sense of achievement. (Graham, 2004)

Research on Journal Writing as Self-Reflection Medium

Raelin (2002) and Amulia (2004) emphasized the roles of the reflective practices as “the practice of periodically stepping back to ponder the meaning of what has recently transpired to ourselves and to others in our immediate environment” (Raelin, 2002). He presents it as a public and open process by which an individual’s interpretations, evaluation, and assumptions are subjected to the review of others in order to avoid bias and errors in perceptions of reality (Desjarlais, Smith, 2011). Amulya states the purpose of reflection is to learn from experiences. She suggests journaling as a way to think about an experience, as a process.

Marefat (2002) notes that in order to gain insights into language learning studies and to get closer to learner needs, the researcher is required to guide the learners to examine their own behavior, i.e. introspection, or as Walker (2006) puts it, a pedagogic technique which promotes reflection.

As it appears in Park (2003), the learning journals have sufficient potential to assist the introspective examination of their learning behavior process described by Marefat (2002), and increase student interest in and engagement with course material, to encourage and empower students to take more responsibility for their own learning, to be more reflective in their study, and to allow them to have a voice and provide valuable feedback to the teacher.

According to the overview of research on journal writing presented above, it becomes apparent, that written reflection can serve as a beneficial learning tool for gaining reflective experiences (Amulia, 2004) from the students' angle and serve the educators by in that way supporting more efficient pedagogical practices not only in general education, but also in the context of the language classroom.

Conclusions

The main goal of this study was to investigate theoretical background on reflective learning processes. Existing research in the area of self-reflection puts on display of language educators an undeniable and thorough justification for adopting the implementation of the self-reflective practices on a larger scale as suggested via journaling as a written form of the process. In addition, the study legitimized the usage of goal-setting as a reflective tool, that can be potentially linked to student-initiated autonomous classroom practices.

The study is lacking actual proof by active classroom research on the nature of reflective practices and their potential contribution to pedagogical practices, that would be conducted by the author in the future.

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Teacher Professional Development Through Distance Education: The Ghanaian Experience

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

In spite of the global interests in teacher continuing professional development (CPD), Ghana is yet to institutionalise and implement a well-designed CPD policy to guide teachers' professional practice. At present, CPD opportunities entail participation in hardly organised in-service training and workshops activities. Consequently, continuing education through the distance mode of learning has emerged to be the most viable means for teachers to update professional knowledge in order to improve practice, but this approach is without a challenge. This study uses qualitative interviews to highlight issues involved in teachers' use of distance education for their professional development. The study identifies teacher absenteeism, loss of instructional hours and a general effect on students learning as teachers engage in distance education programmes. The study recommends a much repertoire of CPD activities for Ghanaian teachers and the regularisation of CPD as on-going learning activities for teachers.

Keywords: Professional development, distance education, and basic schoolteachers

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Introduction

In education literature, the Continuing professional development of teachers is seen as an important potential way to improve schools, increase teacher quality and improve the quality of student learning (Day, 1999; Opfer and Pedder, 2011) thus, making CPD policy priorities in efforts to ensure quality education and educational effectiveness (Borg, 2015). Yet in Ghana and other Sub-Saharan African countries, CPD is yet to receive maximum attention in teacher development and educational improvement efforts (Pryor, Akyeampong, Westbrook, & Lussier, 2012).

This is in spite of Ghana's struggle to address quality issues in its educational system. While many attempts have been made over the past three decades through the implementation of various educational reforms and policies (MOE, 1994; Akyeampong, 2002), Ghanaian school child is found to be learning very little (Mereku, 2003) as reforms have had minimal impact on students' learning outcomes. For instance, the OECD (2015) report on Universal Basic Skills in Science and Mathematics ranked Ghana as one of the worse countries to have participated in the international assessment (Ghana was ranked 74th). A study by the Ministry of Education (MOE), (2012) also suggest that less than 25% of primary six children in Ghana are able to read and write and attain basic literacy skills after six years of public schooling.

The lower returns on students learning outcomes is partly because educational reforms and initiatives in the past decades have paid too little attention to what actually goes on in the classroom by way of looking at teachers' professional learning and development. Researches into teacher quality in Ghana suggest that teachers have weak knowledge in content and pedagogies, which undermine effective students' learning and achievements (Akyeampong, Pryor, & Ampiah, 2006; Moon, 2007). To raise the teachers' performances in the classroom to support effective learning of students, Ghanaian teachers must be supported through systematic and ongoing professional development.

Currently, even though the in-service training and workshops activities are current themes in policies and programmes for teachers' development, it all too rarely expands into a larger and more comprehensive idea of CPD (Atta & Mensah, 2015) as it is also hardly organised (Esia-Donkoh, 2014; Essel, Badu, Owusu-Boateng, & Saah, 2009). Consequently the distance education and the sandwich educational programmes have increasingly become avenues for teachers' to upgrade their knowledge and skills (Baiden-Amisshah, 2006) as away of their professional development. As teachers engage in distance education for their professional development as a professional development, there are consequences that affect the teaching and learning of their students. Ananga, Tamanja, and Amos (2015) report in a study that teachers' participation in DE affects teaching and delivery, students' academic progress, monitoring and evaluation, inadequate teacher preparation and the entire school administration systems. Tamanja (2016) also found in a study that, by participating in sandwich programmes as a way of professional development, an average of 264 hours each of classroom instructional time is lost with their students in an academic year.

Yet, the fundamental purpose of CPD is to bring about desirable changes in teachers' practice for improved students learning (Clarke & Hollingsworth, 2002; Guskey, 2002). Therefore CPD enactments of teachers should not in anyway affect the learning of their students. It is against this background that the study examines issues involved in teachers' engagement in distance education programmes as a way for their professional development.

Literature Review

Teacher continuing professional development (CPD)

Literature suggests varying definitions of CPD, but in its simplest form, CPD is seen as the development of a person in his or her professional role (UNESCO, 2003). In teacher education, CPD is perceived as a long-term process, which extends beyond teacher education at the tertiary level to in-service training at the workplace (Putnam & Borko, 2000). It is the "processes and activities designed to enhance the professional knowledge, skills and attitudes of educators so that they might in turn, improve the learning of students" (Guskey, 2002, p. 16). Through participation in CPD activities, teachers are equipped with new knowledge (in content and pedagogy), skills and attitudes, which leads to teacher change for effective students learning (Clarke & Hollingsworth, 2002).

Teachers' participation in Distance Education (DE) in Ghana

In Ghana, one of the dominant approaches of teacher development is continuing education using the distance mode. Distance education is any form of learning process where learners are separated from the teacher in terms of space and time, where "communication between the two is mediated by print media or ICT; and learning is under the control of the learner rather than the teacher" (Mnyanyi & Mbwette, 2009, p. 2). With its large-scale implementation in 1996, the University of Education, Winneba offers various distance education courses for teachers to upgrade their professional knowledge while remaining at post.

Such convenience associated with DE programmes has increased teachers' enrolment in DE over the years. Also, while study leave options are gradually becoming inaccessible to teachers due to its quota implementation, teachers are turning to the DE and sandwich programmes to upgrade themselves while remaining at post. Statistics from the largest DE providers for teachers attests to the phenomenal increase in teachers' enrolment in DE programmes at the University of Education, Winneba (see figure 1)

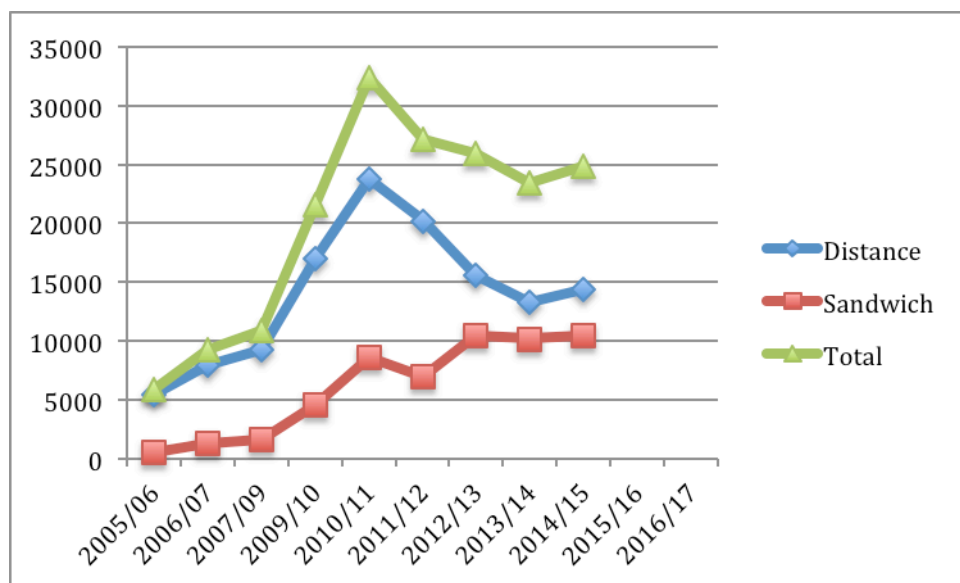


Figure 1: Enrolment trend in Distance Education and Sandwich Programmes at the University of Winneba (UEW)

Source: UEW 22nd Congregation report, 2017)

Methods

The study adopted a basic qualitative design involving 16 teachers and six educational stakeholders. Teachers were drawn from four (4) purposefully selected districts in the Central region as cases with their district educational directors. In-depth interviews were the only data collection tool. Themes were extracted from the data to form the basis of the analysis guided by Braun and Clarke (2006) criterion for thematic data analysis. The study had ethical approval granted by the University of Technology Sydney ethics committee and participants gave informed consent in order to be part of the study.

Results

This section presents the results from the interview data analysis. The findings have been categorised into four themes: teacher absenteeism, loss of instructional hours, effects on students learning and DE serving its fundamental purpose.

Teacher absenteeism

A major concern raised by all educational stakeholders was the increase in teacher absenteeism owing to participation in distance education programmes. All educational directors expressed worry over abandoning of classroom duties for engagement in further school activities such as leaving school to various campus sites for information, to write quizzes and to submit assignments. In Ghana teacher absenteeism has been an educational challenge affecting teaching and learning in classrooms. Absenteeism refers to a miss of work when a teacher allocates teaching time to activities that compete with scheduled work for other reasons such as personal utility (Martochio and Jimeno, 2003). An educational director expressed continuing education as a leading cause of teacher absenteeism in the following way:

It is very common that these teachers leave their classroom duties to engage in other personal studies. It is good that they obtain further upgrading but the distance programmes affect student. When a teacher needs to submit assignment to their various schools [where they pursue further studies] or find out information, they leave their teaching posts. Even though in some cases permission is sought from their head teachers, it amounts to absenteeism in the classroom (Becks, personal Interview)

Loss of instructional hours with students

Another effect of DE participation is the loss of instructional hours with students and time on task. Time on task refers to the contact hours teachers are expected to invest in teaching daily and for which they are paid (Tamanja, 2016). It was revealed that teachers' engagements in DE programmes affect the quality time teachers had to engage with their students in the classroom. Stakeholders observed through supervision and monitoring that, teachers used instructional hours to engage in personal learning while preparing for quizzes and examinations in their respective universities. Similarly leaving teaching duties for other learning commitments in the universities did not only increase absenteeism in the schools but also affected instructional hours and time on task within the schools.

Ironically, all teachers who had used the DE modes of study did not concur to the concerns raised by educational stakeholder on absenteeism and loss of instructional hours with students. Teachers who were Junior high school teachers¹ argued that whenever they had to leave for their university engagements (be it examinations, submission of assignment or registration), they did so after finishing their tasks in schools. Teachers explained with their experiences:

I have successfully completed my degree programme through the DE and there was never a time I left my students unattended for schools. Lectures are on weekends and I also didn't use my instructional hours teaching to read by lecture notes, that is not just possible (Teacher 2, personal interview).

Another teacher also commented:

I think stakeholders just exaggerate teacher absenteeism that we [teachers] leave the classrooms to pursue our own personal learning. I didn't do that and I don't think any good teacher will do that. What we usually do is to engage with our lecture materials during our free time (teacher 3, personal interview)

It is important to emphasise that, this contrary positions have fuelled tensions between participating teachers and school administration that view this practice as affecting the learning of students. While, in the study teachers' responses were apparent justification for their engagement, it is important to reckon that indeed teachers' engagement in DE programmes contribute to teacher absenteeism in the classroom as

¹ At the Junior High school level, teachers teach specific subject and thus have specific time allocation in the school timetable for their lesson.

well as loss of quality time with students as has been established in other studies (Tamanja, 2016).

DE serving its purpose

This theme emerged as teachers' justification on their use of DE programmes to develop professional selves especially in situations where CPD opportunities for teachers are not forthcoming. Therefore to the teachers DE programmes enable majority of teachers to further their education while remaining at their teaching post. Teachers also explained that, as opportunities to obtain study leave with pay to leave classrooms to pursue further studies is limited, the distance education and sandwich programmes remained alternative PD tool to upgrade their professional knowledge. Teachers explained in the following ways:

Whether you like it or not, the DE programmes have come to stay with us. I am able to further my knowledge so are my colleague teachers. We wouldn't have been able to do that because it is difficult to even get study leave with pay (Kwesi, teacher).

Another teacher also explained:

We are able to further our education thanks to DE and the sandwich programmes. It allows us to be in school and study at the same time. Today many teachers are in school because of DE programmes (Ato, teacher).

Discussion and conclusion

The study's results show that teacher participation in DE programmes affect teaching and learning. On one hand, though educational stakeholders identified concerns and effect of teachers' participation, teachers on the other hand felt the DE programmes are serving its purpose by equipping them with professional resources (knowledge, skills and attitudes) with hitherto were unattainable due to the difficulties in access study leave options. Furthermore, in the absence of varied CPD opportunities to develop teachers, engaging in continuing education using the DE demonstrates human agency on the part of these teachers as they sought out own avenue to develop in their profession. However, teachers cannot develop at the expense of their students. Researches have indeed demonstrated effects of participation in DE programmes on the teaching and learning. Mereku (2013) reports in a study among teacher participants in DE programmes at the University of Education, Winneba that although teachers generally felt the DE is achieving its purpose in terms of widening access to teachers in the continuing education pursuits, DE programmes are inadequate to increase teacher capacity effectively in the classrooms. Other reports have also identified teachers' continuing education through the DE and sandwich modes as significant cause of teacher absenteeism, which is found to affect students learning (World Bank report, 2010; Tamanja, 2016).

In conclusion, to harness the contribution of DE towards teachers' professional development, measure must be taken to address these concerns as this study has highlighted. Challenges associated with DE practices need urgent redress in order for teachers to enjoy full participation without adverse effects on their students. School

management can streamline pragmatic steps at the school level to ensure that teachers do not use official hours for personal learning concerning their further studies. Also, there is the need for consideration of richer repertoire of CPD practices that include teachers' informal activities as they occur within the context of their practice. This will reduce the overreliance of continuing education to other avenues for teachers to develop professionally.

Acknowledgement

I acknowledge the contributions and support of my two supervisors: Dr. Jacquie Widin and Prof. Nina Burridge, all senior lecturers at the University of Technology Sydney, Australia.

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*Internationalization at Home - Enhancing Students' Intercultural Competence in
"Intercultural Collaborative Co-Learning Class"*

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

Japanese universities face an increasing demand - from students as well as industries - for quality education that is directly connected to the improvement of students' employability. One of the important components of employability is intercultural competence. As the world becomes more globalized and diversified, our students need to be not only internationally minded but also equipped with skills to effectively work with people from different backgrounds. Education-abroad will probably be the most effective way to develop the intercultural competence. Yet, data suggests that only a few percent of students on average in Japanese universities take advantage of studying abroad due to reasons such as financial difficulty, lack of language proficiency, fear of delaying graduation, and so forth. Intercultural co-learning collaborative classes designed to promote meaningful interactions between international and domestic students have great potential to develop students' intercultural competence while at home. In the classes, thematic discussions and/or collaborative projects by students with diverse linguistic and cultural backgrounds are built into the learner-centered lessons where different ways of thinking, values, and working styles are respected. The intensive interactions across cultures enable students to gain deeper insights into their differences and similarities, reflect on their own cultures and identities, and reconstruct themselves. Previous studies suggest the effectiveness of intercultural co-learning, yet few connect the benefits and intercultural competence development. This paper serves to examine the effects of intercultural co-learning between domestic and international students, introduces some pedagogical implications, and suggest policy makers to integrate the concept of Internationalization at Home (Beelen & Jones, 2015) into higher education in Japan as alternative for education abroad.

Keywords: Intercultural education, collaborative learning, project-based learning, internationalization at home

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Introduction

Internationalization has brought about notable changes in higher education. In Japan, this was made possible through a few project-based educational reforms such as the Development of Global Human Resources (Go Global Japan or GGJ), where the focus is on fostering global talent. This term has several different applications. The project initiated by the Ministry of Education, Sport, Culture, Science and Technology (MEXT) defines the global talent as an individual who possesses the following qualities: “language and communication skills,” “independence, activeness, the desire to take on new challenges, cooperativeness and flexibility, responsibility,” “capability of appreciating other cultures while being aware of their own identity,” “leadership and teamwork through problem-solving”. Each university selected on this project is responsible for providing curricula that emphasize these sets of skills – whether it be accomplished through setting appropriate goals or reforming policies. Hence, every institution, department, and program should have its own unique definition of global talent.

The importance of providing such educational opportunities for students has become obvious over recent years. Climate change, natural disasters, terrorism, political unrest, and immigration problems all have their roots down in this single phenomenon we call globalization. The need for instructors at higher education institutions to respond to this dramatic shift in society has become more critical than ever. Language proficiency is no longer the only quality expected from global citizens. They must also demonstrate a wide range of refined skills such as attentive listening, negotiation skills, logical thinking, problem-solving skills, teamwork, and the ability to take action.

2 Cultivating Global Talent in Japan

2-1 Recent Developments in Policies

One of the first global policies implemented in Japanese higher education was “100,000 International Student Project” (1983) under the Prime Minister Nakasone’s Cabinet. Since then, several so-called global projects such as Global 30 (2009-2013), Go Global Japan (2012-2016), and Top Global (2014-2023) were carried out in order to internationalize higher education institutions in Japan. These policies encouraged higher education institutions to establish systems that would enable the take-in of talented students from abroad and allow domestic students to gain international experiences including education abroad. The Ministry of Economy, Trade and Industry and the MEXT collaborated on the joint project called, “Asia Human Resources Fund” (2007-2013) to welcome international students and foster their talents in IT. The MEXT’s ongoing “Inter-University Exchange Project” is also serving as a driving force to internationalize Japanese higher education.

2-2 Defining Global Talent

It is important to review what global human resources we, as a nation, are hoping to cultivate. “Global talent” is a unique Japanese term that has numerous applications, dependent upon each institution to interpret. This concept is thought to have originated after the economic bubble burst in Japan, alongside the emergence of a worldwide globalization movement as discussed earlier. In order to overcome the economic depression and to compete in the global market, Japan began to realize the importance of cultivating competent global human resources. The economic industry has its own expectations from higher education institutions regarding global talent cultivation. The Ministry of Economy, Trade and Industry (METI) made its first involvement with this matter following their issuance of “Industry-University Partnership” in 2009, which later developed into “New Development Strategy Realization Meeting (Shinseichosenryakukaigi)” and then to “Global Human Resource Promotion Committee” (Yoshida, 2014). The latter meeting consisted of Ministers of Foreign Affairs, Education, Health, Labor and Welfare. This indicates that nurturing global human resources was not only a common interest of different ministries. This was also a national project. It was on this meeting’s midterm report that the skills and qualities of global talent were discussed in detail.

2-3 Issues of Generic Skills and Graduate Attributes

Between 1990 and 2000, education reforms of similar nature took place outside of Japan. These reforms focused on the acquisition of generic skills, such as key competency, EU competency, key skills, the 21st century skills, transferable skills and employability. The employability advocated by Knight and Yorke (2003) was especially valued by higher education institutions to envision specific sets of skills and qualities crucial for students to acquire before graduation. For instance, the University of Kent or the University of Edinburgh states in their university mission that the employability is one of their important graduate attributes.

These events outside of Japan, combined with critical issues within the nation – decreased international competitiveness due to ailing economy and the youth reluctant to strive for success – have led Japan to reconsider its interpretation of global talent. The MEXT’s “graduate attributes” (2007), the METI’s “fundamental competencies for working persons” (2006), the Cabinet Office’s “human strength”, the Ministry of Foreign Affairs, Education, Health, Labor and Welfare’s “foundational skills for employment” all incorporated the idea of competency, versatility, and employability. Together, these specific skills provide the basis of global talent. Evidently, some of these skills are specific to career development as they were suggested either by the METI or experts in similar fields. Moreover, these sets of skills also differ in depth with some being detailed and others not. Yoshihara (2007) blames the lack of harmony between educational and industrial experts who attended the Global Human Resource Promotion Committee for this imbalance, and not sharing the same definition or interpretation of global talent.

2-4 Definition of Global Talent in GGJ

Bearing this complexity in mind, it is quite interesting to see how 11 universities selected for the GGJ projects incorporate their core values into education policies that strengthen and support human resource development. However, these projects do fall short in one critical aspect. They seem to be ambiguous about the skills, qualities, and knowledge that their students are expected to obtain by graduation or the end of the term. The exception is linguistic ability, a skill which can be determined merely from administering score-based exams. It is as if they directly applied GGJ's definition of global talent to their programs. The GGJ's unique and flexible system is worth commending, in that each institution's educational policy is valued individually. The GGJ also strives to inspire youths who have been affected by the economic bubble burst and depression afterwards. What the GGJ could have done, however, is to demand the selected universities to provide detailed definitions/explanations about their graduate attributes, possibly in the form of rubrics for skill assessment.

3 Global Talent Cultivation and Study Abroad

3-1 The Effects of Study Abroad on Human Resource Development

Universities selected by the GGJ do, in fact, share the same passion for promoting study abroad. It is crucial that all of GGJ programs are built on the assumption that study abroad is integral to global talent cultivation. The GGJ has triggered the implementation of several government-funded study abroad programs such as "Leap for Tomorrow, Study-Abroad Initiative," a collaborative scholarship program of the industry and the MEXT.

Previous studies indicate that exposures to different cultures, practices and beliefs as well as experiences to overcome challenges while living in a different cultural environment enhance one's global competency. Research has proved that the effects of studying abroad are more profound than initially understood. Study abroad experiences strengthen intercultural communication skills, most significantly, the ability to express appreciation towards different cultures and values, and nourish creative-analytical thinking skills (William, 2005; Lee et al., 2012). Stebleton et al. (2013) also believes the greatest product of studying abroad is the substantial increase of intercultural competency. Similar effects have been reported in Japan. A research conducted by Kobayashi (2013) revealed that 91.7% of students who had studied abroad saw significant improvements in their command of foreign languages, followed by 89.8% who thought it was their communication skills that improved the most. In a similar study targeting scholarship students supported by the Japan Student Services Organization, Nomizu and Nitta (2014) concluded that a long-term study abroad foster students' generic skills, specifically, foundational skills necessary for the workforce.

3-2 Factors Impeding Study Abroad

The benefits of studying in an environment with different customs, traditions, languages, and values have been emphasized throughout the previous sections. However, it goes without saying that several factors such as financial issues, lack of language proficiency, delayed graduation, job-hunting related factors, and uncertainty towards living in a foreign country can stand in the student's study-abroad. Kojima et al. (2014) found that out of 418 domestic students, 142 showed no interest in studying abroad. A survey by Tohoku University in 2015 (N=2,595) also revealed that 51.8% of respondents "did not want to study abroad" with the most popular reasons being, "financial difficulty" (28.7%), "a lack of linguistic ability" (24.6%), "concerned about living overseas" (19.2%), "not willing to delay graduation" (18.9%), and "preferring Japan's safety and convenience" (18.8%). This indicates that no matter how established Japan's study abroad programs may be, not everyone is willing to take advantage of these opportunities.

Addressing some of these issues, in recent years, many non-profitable or non-governmental organizations have started to advertise their own scholarship opportunities to students, alongside several universities adopting similar reward programs. The industry is also undergoing accommodating changes. The Japan Economic Foundation has encouraged hirers to reconsider their time frames for recruitment and hosted special information sessions for post-study abroad students. Yet, financial issues still persist. With the economy yet to recover, many students still depend heavily on scholarships just to attend university, and these people simply cannot afford the luxury to study abroad, bearing in mind how costly tuition and living expenses can be.

3-3 Alternatives to Studying Abroad

Under these circumstances, how can a higher education institution encourage its students to experience the outside world? What is an easier way to cultivate global talent if economic factors get in the way? Internationalization at Home (IoH) may be the answer. This concept was first introduced by Wachter (2003), and later endorsed by Knight (2004) as a crucial measure for higher education across the nation, alongside cross-border education. International associations such as the Association of International Educators (NAFSA) and the European Association of International Educators (EAIE) advocate IoH, and this movement is expected to spread to other regions over the years. In a comprehensive study (n=15,807), Soria and Troisi (2013) had students from nine public research universities in the United States self-assess their Global, International, Intercultural (GII) competency. Upon comparing the evaluations between students with study abroad experiences to students who were more globally active on campus - such as taking international or global-related courses, interacting with international students, and partaking in international or global-related activities - they found the latter group displayed higher global competency. It is important to note that this study relies on subjective evaluations, and therefore, should not be used to prove the effectiveness of on-campus activities.

However, it does imply that such on-campus learning experiences could equate to a single study abroad experience.

4 Internationalizing the Curriculum

4-1 Intercultural Collaborative Co-learning

Such collaborative learning between domestic and international students has begun to receive attentions in Japan. Intercultural collaborative co-learning classes provide both international and Japanese students with opportunities to learn from each other through "meaningful interactions." Thematic discussions and collaborative projects by students with diverse linguistic and cultural backgrounds are built into the learner-centered lessons where different ways of thinking, values, and working-styles are respected. The intensive interactions across cultures enable students to gain deeper insights into their differences and similarities, reflect on their own cultures and identities, and reconstruct themselves. Due to the nature of this concept, these classes are sometimes referred to as intercultural classes or multicultural classes. It is crucial to value a bidirectional, interactive, and cooperative learning process in this type of class (Van der Wende, 2000).

In Japan, however, multicultural classes are not held on a regular basis as students from abroad are still a minority. Furthermore, each university has its own preference for naming these types of classes (a multicultural class, multicultural coexistence, multicultural learning, intercultural appreciation, an intercultural communication class, mutual cultural learning, to name a few) yet structurally, they are all similar. A group of Japanese students and another group of international students are to learn together, which is "co-learning (kyoshu)" if translated directly into Japanese, but it is more intercultural collaborative learning.

It is the learning process that is valued most in intercultural co-learning. Students from different backgrounds share their own values, exchange opinions, and experience a wide range of emotions. By overcoming language and cultural barriers, they learn to accept and appreciate each other's differences, and come to reflect upon their own identities. This experience helps learners gain empathy as well as critical thinking skills. Meticulous planning and instructor's involvement are of crucial importance in the intercultural co-learning classes because they are not your typical lecture-based classes. Yet, the concept still remains simple. Intercultural collaborative learning leads students to a global perspective.

4-2 The Effects of Intercultural Collaborative Co-learning

Several studies have confirmed the benefits of intercultural interaction between local and international students, both inside and outside of the classroom, and its relation to global competency (Leask, 2009). According to Leask and Carroll (2009), the interaction between domestic and international students should be always purposeful, but meaningful interaction is not something that occurs naturally. Instructors need to make the following adjustments along the way to facilitate intercultural interaction: 1)

Having students map out a common goal to be accomplished, 2) assigning tasks and activities to students in accordance with the goal, 3) evaluating their learning outcomes that are connected to the goal and assignment.

Intercultural collaborative co-learning has been endorsed by experts of intercultural education also in Japan for over ten years. Kagami (1999) states that such educational interventions deepened learners' understanding of different cultures, widened their perspectives, increased self-awareness of their own development, and changed their attitudes toward different cultures positively. These opportunities also affect their attitudes toward multicultural understanding, such as learning to appreciate diversity and collaboration (Kagami, 2006) and positively influenced domestic students' motivation for intercultural communication, flexibility, self-control of emotion, and tolerance with uncertainty (Suematsu, 2014). This challenging process also enables international students to understand the Japanese way of communicating, and improve their own Japanese language communication skills along the way (Nakano, 2006).

4-3 Challenges in Practices

Intercultural collaborative co-learning in Japan is still in the midst of development. It was initially started with the purpose of teaching international students "Nihonjijo" or Japanese current issues as part of Japanese language education. Instructors first brought Japanese students into their classes to increase a contact with natives for international students. Then they realized the benefits that domestic students enjoy from interacting with international students. The classes were gradually modified to also target domestic students. The second type of the intercultural co-learning was developed as a response to the internationalization of higher education initiated by Global 30 and GGJ. The classes were held in English. Some of the instructors, however, misunderstood that either classes taught in English or classes where international and Japanese students were taking together were all intercultural co-learning.

Examining the history of intercultural co-learning in Japan in fact, reveals that it lacks a proper backbone structure such as theories behind the practices or well-developed pedagogy. Educational practitioners who integrate intercultural collaborative co-learning into their teaching must attend to setting an appropriate theme and learning goal for the class, identifying possible resources for students, selecting a language of instruction, determining the method and frequency of instructor's intervention, and choosing how to assess and evaluate students' learning outcomes.

5 Conclusion

A government-sponsored project to develop instructor's guide in Australia, "Finding Common Ground" provides a framework for facilitating interaction between students of different language and cultural backgrounds. As indicated throughout, Japan must prioritize the construction of such a theoretical framework for intercultural co-learning. In addition, a platform where educational practitioners exchange ideas for pedagogical improvements needs to be developed. This type of network within

university or even inter-university collaboration would serve as resources and faculty development opportunities. Furthermore, research looking into students' learning experiences as well as outcomes should be promoted.

Japan may still continue to struggle with the promotion of student mobility, especially the outbound. Yet there is much to expect from intercultural collaborative co-learning as an alternative or a supplement for education-abroad. Also, with the "300,000 International Student Project" launched in 2008, higher education institutions in Japan are continuously diversifying. In order for Japan to provide an appealing learning environment for both domestic and international students, educational practices such as intercultural co-learning must be built into the national curriculum. This internationalization of curriculum will lead Japanese higher education to an overall enhancement.

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Challenges and Opportunities to the Use of Google Docs Sharing for Realtime Writing Task Feedback: Inclusive ESL Classroom at Jakarta Multicultural School

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstracts

The integration of technology in language learning is not something new in the formal education context. This study explores the challenges and opportunities in real teaching and learning experiences toward the use of Google Docs Sharing for real-time feedback in writing task applied in inclusive lower secondary level context. Through observation and experiment in English Second Language (ESL) class at Jakarta Multicultural School (JMS), this study will evaluate the challenges for students to understand the feedbacks from teacher, the opportunities to apply this approach in inclusive classroom with Autism Spectrum Disorder (ASD) students, and the students' perspective upon the lesson. The interviews will be conducted with ESL students (special needs and non-special needs students), other ESL teachers and a shadow teacher (an assistant teacher who helps special needs student) of ASD students. The research result will be completed after the second-semester finish and all the writing task cycles from all lower secondary levels have been done.

Keywords: writing task, real-time feedback, Google Docs Sharing, English Second Language (ESL), Inclusive Classroom, and Autism Spectrum Disorder (ASD).

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Introduction

The immersion of technology in language teaching and learning is not something new in the formal education context. In Indonesia education system, the implementation of technology-based integration or e-learning has been widely known in both public and private education context. According to the survey result released by Esfindo in 2008 (E-school for Indonesia), the number of schools that have been registered and owned a learning site was about 187 schools in 20 provinces and most of the schools are in Java region. The survey result showed that the integration of technology in school is still very low compared to the number of schools in the region. In addition, in the capital city of Indonesia, Jakarta, there are 16 schools that have been implemented e-learning, yet this number is still very low compared to a total number of schools in the city which is around 2,546 schools. (Suhartanto & Junus, 2014). However, Indonesia's government has been putting this technology-based education as a concern since 2001 that specifically explained in the ICT National Plan. Based the ICT National Plan under Presidential Instruction No. 6/2001, it is stated that there are four priorities for the education field: Development of ICT networks for education and research; Development and implementation of ICT curricula; Use of ICT as an essential part of the curricula and learning tools in schools, universities and training centers; Facilitation of the use of internet for more efficient teaching-learning process. (Firman & Tola , 2008). These priorities have been implemented through several projects and initiatives conducted by the Ministry of Education in primary and secondary education fields, such as Wide Area Network (the project builds wireless based connection among schools in 30 cities); ICT for Vocational Education (established a forum and created a mailing as well as trained basic skills of information technology); School 2000 (connected 2000 upper secondary schools to the internet through an educational portal); Edukasi (provided internet-based learning materials for lower secondary, general upper secondary schools and vocational secondary schools students in some of the school subjects, including mathematics, physics, chemistry, biology, electronics, and information technology) (Firman & Tola , 2008).

In general, there are two purposes of e-learning integration in Indonesia based on its implementation model, a complementary and a substitution. A complementary model of e-learning applies face-to-face session and combine with the e-learning system. On the other hand, a substitution model uses the e-learning system as the main medium of the learning process. In Indonesia, a specific regulation made by the Ministry of Education under its instruction No. 107/U/2001 stated that in upper secondary school, the suggested model to be used by schools is a complementary model. This model is considered as the most effective model to be implemented at schools to enhance the learning process, where teachers are helped to deliver the additional materials through learning websites when it is not possible to be covered during the classroom session. In addition, teachers are allowed to open a virtual class, create quizzes for pre and post-test, open a discussion forum and create a video conference to replace the missing face-to-face session. For students, they can upload assignments, open the active the learning session or topic, follow and get involved in a discussion forum, do the quizzes and get the result of the quizzes right after the test. (Hartatik, Cahyaningsih, Purnomo, Hartono, & Tri Bawono, 2017). There are some well-known learning websites and applications are being used in Indonesia's schools (public and private school), such as Moodle, Schoology, Edmodo, Google Classroom and so forth. Those website domain and application are used to enhance the learning process as complementary or substitution model for most of the subjects in schools.

The varied learning websites are differed from one to another, especially their features, yet the main functions are moderately similar, is to enhance the learning process. In order to make it more efficient and effective, the approaches the teachers use in integrating technology into part of learning will boost the function of the technology itself. Take for example in the language class, there are a lot of approaches to engage students to be active learner through e-learning as the learning medium, such as collaborative reading and writing, video teleconference or online presentation, classroom discussion and many more.

In one of the private schools in South Tangerang, Indonesia, Jakarta Multicultural School (JMS) has been integrating technology into their learning process by using Google Classroom. In addition, this school accommodates varied students' abilities and they are all engaged in face-to-face and e-learning session. Therefore, this study examines the challenges and opportunities of the technology integration in the language classroom, especially in an inclusive classroom with ASD (Autism Spectrum Disorder) students.

Technology Integration In Language Classroom

English as Second Language Class (ESL)

English Second Language (ESL) is generally for students whom primary language or their home language, is other than English and would require additional English language support to develop reading, writing, listening and speaking skills. There are no typical There are no typical ESL students. They come from many linguistic and cultural backgrounds and have had a wide variety of life experiences. They can significantly enrich the life of the school and help enhance learning for all students (Special Programs, 1999). The need for ESL classes is growing throughout the world followed by the number of immigrants' movement to English speaking countries like England, Canada, USA, New Zealand and Australia (Thornton, 2009).

In Indonesia public school context, the Ministry of National Education released Decree No. 22/2006 on The Structure of National Curriculum. The decree requires English as a local content subject with an instruction period of up to 1 hour and 15 minutes per learning session. Public schools were given the freedom to start teaching English earlier than Grade 4 and were instructed to implement a competency-based curriculum developed at the Local Education Unit (Kurikulum Tingkat Satuan Terpadu – hereafter KTSP). In the following years, in 2013 Ministry of National Education conducted the piloting of Curriculum 2013 in 2,598 model elementary schools throughout the country, and a few months later major provinces such as DKI Jakarta (the capital region) banned all public elementary schools from teaching English during school hours. Recently, in 2015 the policy has changed, the Ministry of Education and Culture instructed schools to teach three languages: Indonesian as the national language, an indigenous language of the school's choice and English as a foreign language (Zein, 2017).

On the other hand, most of the private schools in Indonesia that are using international-based curriculum like Cambridge and International Baccalaureate (IB) program have a different timetable for their English subject. Take for example in Jakarta Multicultural School (JMS) that uses IB PYP Program for Year 1 to Year 5 (Primary), Cambridge Curriculum and JMS Program for Year 6 to Year 8 (Lower Secondary), Cambridge Curriculum for Year 9 to Year 10 (Upper Secondary) and IB Diploma Program for Year 11 to Year 12 (Upper Secondary). In this school, they conduct English lesson 5 (five) times a week for 50 (fifty) minutes per learning session. In Lower Secondary (Year 6 to Year 8), students are divided into two different classes for their English subject, English Second Language (ESL) and English First

Language (EFL). The designated of students into those classes based on the result of their English Placement Test (EPT) conducted prior to the semester 1 begin. The EPT consists of reading, writing and speaking skills.

Google Docs and Writing Task Feedback

There are numerous applications, programs, websites, and internet services that can help students to learn better in language class, one of the services is Google Docs. This free web-based Microsoft Word offered by Google Corporation allows their users to create, edit and store their documents online. The users can view their working document as it appeared at any time in the past and they can choose to return to an earlier version. This service supported by other features such as Google Documents, Google Spreadsheets, Google Presentations and Google Drawing (Suwantarathip & Wichadee, 2014). This review emphasizes on Google Document and how the real-time writing task feedbacks are given from teacher to students in English language class through a complementary model of the session.

Google Docs, as the online working tool, can help students in English language class especially in the writing skills. Supported by the capability to share the online working document to others make this service a beneficial tool to do a collaborative working and peer editing of students' writing task. According to Sharp (2009), the collaborative editing tools allow a group of individuals or students to edit a document instantaneously while they can view the changes made the others in real time (Suwantarathip & Wichadee, 2014). Therefore, as it is beneficial for collaborative working, the share document feature can help teachers as well to assist students in doing their writing task.

There are a lot of writing assistant services that can help people minimize their technical language issues (verb tenses, punctuation and spelling), such as Grammarly (to give general feedback on technical languages such as spellings, verb tenses and word choice, with free or a paid service options that enables users to adjust the feedback according to document type; Cambridge's Write & Improve (to give automatic feedback to non-native writers English in set writing assignments specified in the tool); Write-Away (an autocompletes writers' sentences with words taken from a corpus); Write Assistant (to integrate a bilingual Danish-English dictionary and predictive text as an add-in to Microsoft Word) (Tarp, Fisker, & Sepstrup, 2017). However, in this research, the real-time feedback that the teacher gave through Google Docs is not limited to the technical language issues. The feedbacks that are given in a time when students working on their writing task, are mainly aimed to keep students on track with the specific writing goals (based on the given rubric for different text type), scaffold students to brainstorm a starter ideas through online discussion (provide suggestion of reading material), remain any missing part of their writing before it is submitted as final work and gradually able to check students' progress. This kind of feedback approaches is given to only ESL students in Lower Secondary level at JMS.

Previous Studies

There are some previous studies discussed the use of Google Docs in English language class to help students improving their collaborative skill and writing skills. The latest research took place in San Francisco, United State was conducted by Woodrich and Fan (2017) about Google Docs and the collaborative writing in the middle school aimed to explores student participation in anonymous collaborative writing via Google Docs can lead to more successful products in a linguistically diverse eighth-grade English Language Arts classroom.

The researchers conducted their study in quantitative mode through face-to-face, online, and anonymous writing activities, a rubric, and a survey, to compare anonymous collaborative writing with other modalities, equalizes participation among students of varying language fluencies, and if anonymous collaborative writing, compared to other modalities, affect student comfort levels. They found that students of varying language fluencies participated more equally when they were able to remain anonymous. In addition, face-to-face writing showed the highest overall scores, and students enjoyed working on Google Docs.

Another research from Southeast Asian context was conducted by Suwantarathip and Wichadee (2014) about the effect of collaborative writing activity using Google Docs on students' writing abilities. The research compared writing abilities of students who collaborated on writing assignments using Google Docs with those working in groups in a face-to-face classroom. The researchers have conducted this experimental research with students enrolled in EN 012 course in the first semester of Academic Year of 2013. Through writing tests and questionnaires data collection, the researchers found that there is a significant difference between the two groups' writing mean score after the experiment. Students in the Google Docs' group could achieve higher mean scores compared to those working in a face-to-face classroom setting. Moreover, students reported that they had positive attitudes toward collaborative writing activity and high collaboration in their groups using Google Docs.

An Inclusive English Class – Autism Spectrum Disorder (ASD)

Inclusive English Class and ASD Language Skills

There are no typical students in ESL class, especially in our school, Jakarta Multicultural School (JMS). Some students are Indonesian-born with limited English language skills especially in speaking and writing, some have immigrated to Indonesia with their families after having received some formal education in their home countries (some of them have learned English as a foreign language) and some others are Indonesian-born with special needs, especially Autism Spectrum Disorder (ASD). Our ESL class accommodates special needs students by including them in our regular class with mainstream students (inclusive classroom). An inclusive classroom can be defined as including students of different conditions, backgrounds, and abilities to be in the same classroom.

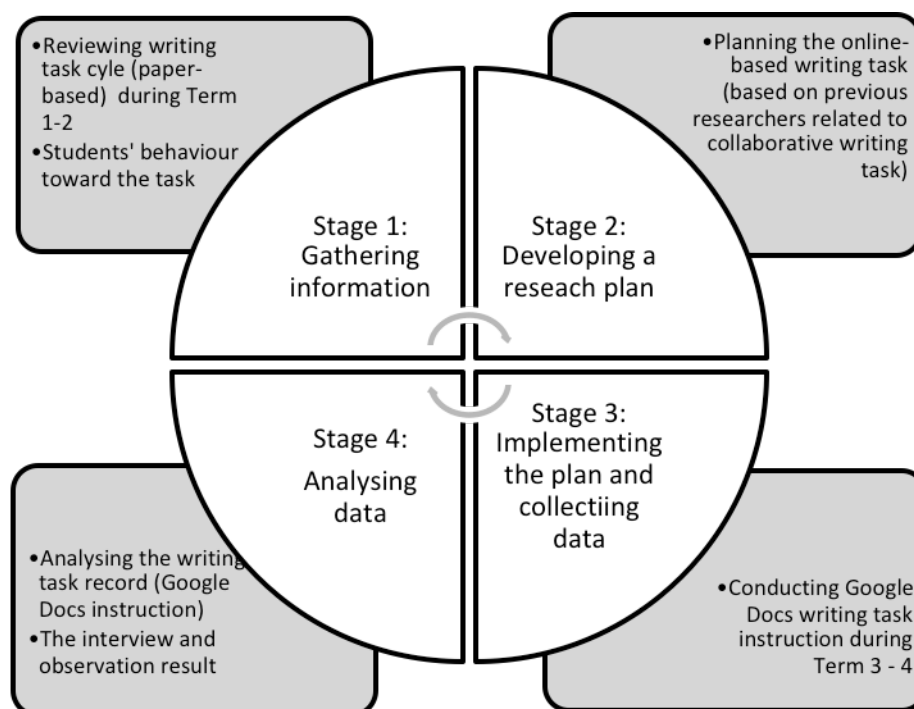
Theoretically, inclusion is related to philosophical decision that emphasizes 'the importance of bringing together diverse students, families, educators and community members', in the purpose of establishing supportive learning atmosphere that helps every individual student the feeling of respect, acceptance and the sense of belonging. Inclusive education recognizes that all students are learners who benefit from a challenging, meaningful, appropriate curriculum (Padmadewi & Artini, 2017).

Students with ASD have some linguistic differences due to their language impairment. They will reach the developmental indicators of their first language acquisition at different rates than the mainstream students. Theoretically, autism had been identified of having limitation in social interaction skills, restricted and repetitive behavior and activities. Their limitation in social interaction skills effects their oral language skills, students with ASD has a limitation in vocabulary and syntax, as well as the presence of unnatural pitch and intonation (Szymkowiak, 2013). Dockrell, et.al (2014) explained in their research that students with language impairment and ASD will experience difficulties in writing task, as well as it

impacts their writing product. In writing, ASD students are commonly having problems in producing a complex text with less used of difficult terms, as well as hardly able to focus on the main topic and hardly able to write the structure the ideas smoothly (Dockrell, 2014).

Research Method

A qualitative classroom action research was adopted in this study. Through the recording of real-time feedback on the Google Docs screen (teacher's screen with screen o-metic application), interviews recordings, students' writing documents, and students' writing progress report.



Picture 1. Research outline

Subject and Setting

The subject of this study was ESL students (with and without ASD) of Lower Secondary Level (Year 6 to Year 8) and a shadow teacher of ASD student. There were 2 (two) students in Year 6, 4 (four) students in Year 7 (one student with ASD) and 3 (three) students in Year 8 (one student with ASD) and one shadow teacher. The participants' English language level was mostly in A1 – A2, it had been identified based on their English Placement Test (EPT) at the beginning of the semester. All the participants and one shadow teacher were being observed and interviewed in this study.

Table 1. Participants' Information

Class	Number of Student	Participants' Coding	Native Language	ASD student and Shadow Teacher	Average EPT Score
Year 6	2 (two) students	Student Y6.1 Student Y6.2	Student Y6.1: Indonesian Native Speaker Student Y6.2: Japanese Native speaker	No student with ASD	Y6.1: 61% Y6.2: 23%
Year 7	4 (four) students	Student Y7.1 (ASD) Student Y7.2 Student Y7.3 Student Y7.4	Student Y7.1 – Y7.3: Indonesian Native Speaker Student Y.4: Japanese Native speaker	1 (one) student with ASD	Y7.1: 41% Y7.2: 55% Y7.3: 50% Y7.4: 22%
Year 8	3 (three) students	Student Y8.1 (ASD) Student Y8.2 Student Y8.3	Student Y8.1 – Y8.2: Indonesian Native Speaker Student Y8.3: Korean Native speaker	1 (one) student with ASD and 1 (one) shadow teacher	Y8.1: 35% Y8.2: 49% Y8.3: 50%

Data Collection

The procedure of data collection of this study was begun by designing writing task instruction, documenting real-time feedback on Google Docs screen, designing semi-structure questions for the interview, deciding participants to be interviewed and conducting the interview.

Data Analysis and Procedure

Over and done with theory-based analysis toward the interview result based on the theory of Electronic feedback on second language writing: A retrospective and prospective essay on multimodality (Chang, Cunningham, Satar, & Strobl, 2017), Exploring writing in products in students with language impairments and autism spectrum disorders (Dockrell, Ricketts, Charman, & Lindsay, 2014) and Using Technology to Support Students with Autism Spectrum Disorders in the Writing Process: A Pilot Study (Asaro-Saddler, Knox, Meredith, & Akhmedjanova, 2015)

Finding And Discussion

Challenges and Opportunities to the Use of Google Docs Sharing for Realtime Writing Task Feedback in Inclusive ESL Classroom

According to the writing task cycle record (throughout the semesters) and the interview result with all the students (with and without ASD) in Lower Secondary Level and the shadow teacher of student with ASD, there were some challenges happened during the implementation of the task, as well as appeared some opportunities to develop this approach

better in the future. This finding was focused on discussing the phenomenon on students with ASD, students without ASD that showed significant progress and students without ASD that showed less significant progress in writing task throughout the semesters.

1. Challenges for students with ASD

According to the class observation during the writing task, there were some challenges had been found for students with ASD in doing the writing task: the problem to stay focus when working with computer and the need of extra supervision during the task. One of the students with ASD easily got distracted if she/he works with a computer, especially under the minimum supervision and assistance of his/her shadow teacher. It is confirmed from the result of the interview with the shadow teacher in responding to the question *“do you still remember Miss when I gave a writing task in the class, first I gave it on a paper and the second one we did it on Google Docs and I gave direct comment. Which one do you think is suitable, easier and helpful for special needs students? Especially for your student?”*

The shadow teacher explained:

I prefer for him to have a handwriting task (paper-based task) because when he used Microsoft Word, it was hard for him to stay focus, you know that right? He will busy opening a new tab or other things on computer, so it will take a longer time for him to finish the task, but it depends on the condition of the special needs students ya, every special need student has different needs and for Student Y8.1, this media is not really suitable for him. He can do it, but we need to be right beside him to supervise his work progress, so he cannot do it alone. The Student Y8.1 seems hardly able to stay focus for he must follow the fast rate of writing task feedback because he needed to directly revise his writing when he was doing the task. This condition supported by the student's shadow teacher in term of the cognitive skill in understanding the concept. The complex process of writing task might be challenging for students with ASD since it involved the process of organizing ideas and presenting the message (Graham & Harris, 2005 in Asaro-Saddler, Knox, Meredith, & Akhmedjanova, 2015). Therefore, the shadow teacher suggested having a paper-based writing task, because it might give him more time to think when Student Y8.1 needed to finish the task.

Then the shadow teacher responded to the question *“based on your observation, do you think Student Y8.1 has the same problems with Student Y7.1 (student with ASD in different Lower Secondary level)?”*

The shadow teacher explained:

...each of them has different problems and for Student Y8.1, his problem is in his focus and actually, he can think but his capability to understand the concept that is hard.

The shadow teacher said that every student with ASD has different needs and different problems in the classroom. This condition is confirmed to be true in some other researchers that explained students with ASD are not a homogeneous group, they vary in terms of language development, intellectual ability and adaptive functioning (Asaro-Saddler, Knox, Meredith, & Akhmedjanova, 2015). For the case of Student Y8.1, he is barely able to stay focus in the classroom, not only during the writing task but also in daily session and even in other classes. However, this condition might be affected by other factors such as the student's interest and learning motivation.

From two students with ASD, one student has shown significant issues in producing phrase, sentences, and a complete thought. In addition, their level of independence, spoken language fluency, written expression is different. Therefore, some issues were mostly found in Student Y8.1. Minor issues have shown from Student Y7.1 such as the need to be reminded to keep on track on his writing task, the need for instruction clarification, written comment clarification was found during the writing task cycle. The Student Y7.1 has a higher level of independence and language skill compare to Student Y8.1.

2. Challenges for students without ASD

The similar issues in generating and elaborating ideas had been found in a student without ASD. One of the students from less significant progress group preferred paper-based writing task. Based on her response to the question *“do you still remember when I gave a writing task in the class, first I gave it on a paper and you will receive the written feedback, then you will do the revision and you give it back to me. The second one, we did it on Google Docs and I gave direct comment. Which one do you prefer?”*

She said, *“the first one”* Then she was asked again *“so after you finish all the things, you get the revision? Why do you think it is easier for you?”*

She explained:

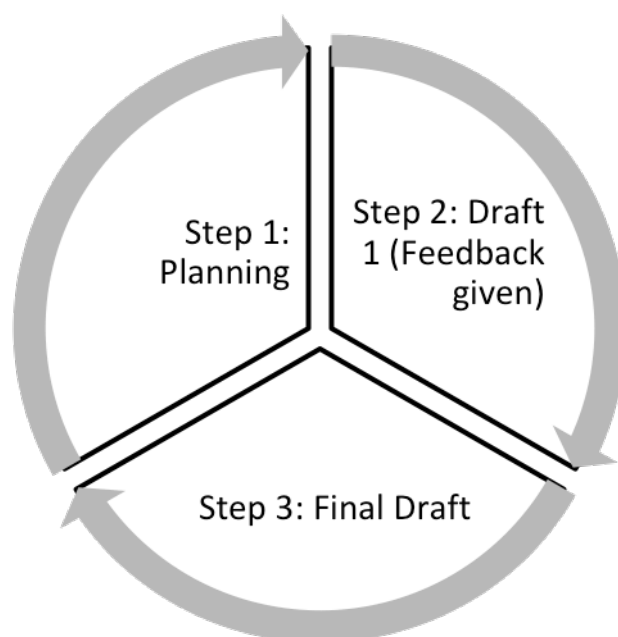
..because the second one, I think I confuse what should I write at that time, so I will forget the story, the things that I need to write...

She was one of the students in less significant progress group and the only student without ASD who preferred paper-based writing task. It is true that writing considered as a complex process of thinking and organizing ideas, then it is not only challenging for students with ASD, but also for most of the students with minimum writing skills (especially for students who have just learned English in less than a year). It is proven from her explanation and the class observation result, that she looked calmer when she was doing the writing task in paper-based mode compare to online-based, because in paper-based mode she could generate her ideas without any interruption from the real-time feedback.

Opportunities to the Use of Google Docs Sharing for Realtime Writing Task Feedback in Inclusive ESL Classroom

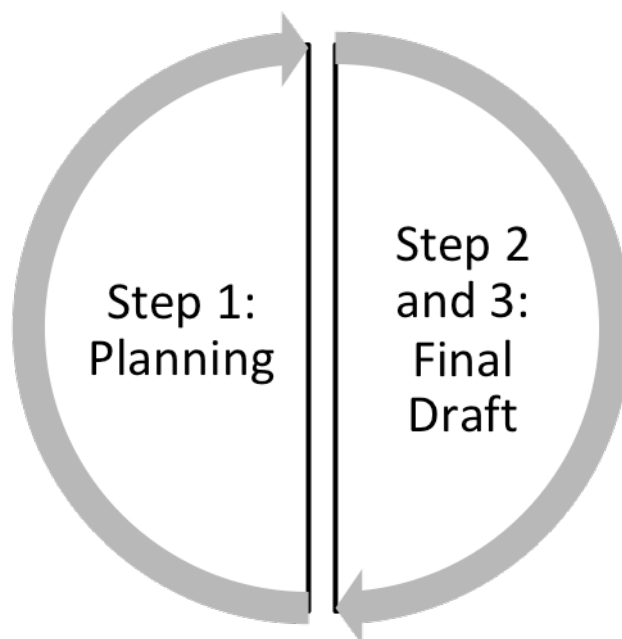
1. The efficiency of time to finish the writing task cycle

This research had been done in two writing task cycles throughout the semesters, Semester 1 (Term 1 to Term 2) for paper-based writing task and Semester 2 (Term 3 and Term 4) for Google Docs Sharing or online-based writing task. Here is the comparison of the writing task cycles throughout the semesters.



Picture 2. Paper-based Writing Task (Term 1 to Term 2)

The paper-based writing task basically took one to two weeks to finish the whole step (from Step 1 to Step 3). In Step 1: Planning, they are required to draw mind-map – their brainstorming result, their main points and any resources that they are planning to put in their writing. They were expected to finish Step 1 in one meeting (one meeting equal to 50 minutes long) or less. In Step 2: First Draft, they can start to write by following the requirements of the task such as topic, word count, tenses used and any specific requirements. It is called “First Draft” because this draft will be reviewed by the teacher and it will be given to the students to be revised and later it will be called “Final Draft”. In this task, students have a maximum of three meetings (3 times of 50 minutes) to finish the task, depends on the task requirements and level of difficulty. After they finished Step 1 and Step 2, the teacher would have two meetings (2 times of 50 minutes) maximum to read and give feedback of their writing, and after that, the “First Draft” is ready to be given back to the students. At the last, in Step 3: Final Draft, students were given one meeting only to revise their writing. In total, there were 6 (six) meetings needed to finish the whole step of paper-based writing task cycle. On the other hand, the Google Docs Sharing or online-based writing task can be finished in 2 (two) steps only with the same content of instruct.



Picture 2. Online-based (Google Docs) writing task (Term 3 and Term 4)

The online-based writing task only took maximum one week to finish the whole process (Step 1 and Step 2) because the feedbacks were given while students working on their writing task, so it did not need to pass through the Step 2: First Draft (as it was implemented in paper-based writing task).

2. Minimizing issues on ASD students' handwriting

According to some previous researches, it has been discussed that the handwriting of students with ASD mostly have minor quality in letter formation compare to their peers (Fuentes, Mostofsky, & Bastian, 2009 in Dockrell, Ricketts, Charman, & Lindsay, 2014).

The deficit may be problematic for two reasons; first, students who have difficulty with handwriting tend to produce briefer pieces so that they do not have to endure the physical struggle of writing (Asaro-Saddler & Bak, 2014); and second, neatness of a written product tends to impact a teacher's rating of a writing sample. Specifically, illegible papers tend to score lower than those of equal quality that are written neatly (Graham, Harris, & Hebert, 2011 in Dockrell, Ricketts, Charman, & Lindsay, 2014).

It is proven that all my ASD students have problems with the eligibility of their handwriting. Some of them have a problem in differentiating lower-case and upper-case letters and another one has a problem in letter construction. It was a challenge for the teacher to understand students handwriting and their writing content. Therefore, by having the type-based writing task using Google Docs, it is a way easier for the teacher to read and evaluate ASD students' handwriting. In addition, the auto-correct and suggested-word feature help students in spelling and word choice.

3. Increase students' motivation

According to the interview result, 7 (seven) out of 9 (nine) students preferred to do the writing task in Google Docs.

Student Y7.1 said “I prefer Google Docs, because when we use Google Docs, we can get the feedback easily, so we do not need to wait for next week and we can change it directly”

Student Y7.2 said “In Google Docs I just need to type it and fix it, so it is easier, and I do not need to read it all”

Student Y8.2 said, “I choose Google Docs because I can directly edit my text.”

Some students pointed out the efficiency of time in doing writing task in Google Docs compare to paper-based and one of them pointed out her/his preference in working with electronic, which only require them to type rather than to write. It is in line with the previous study that explained the review features in Microsoft Word, have been shown to contribute to student preference for written e-feedback over handwritten comments (Ho, 2015 in Chang, Cunningham, Satar, & Strobl, 2017).

Since, all the students are exposed by technology screen in this era, which makes them easier to access any information and to do some activities online (watching, phoning, video calling), it is not surprising that they prefer to work on screen compare on paper. In addition, there were two different text types that students usually had in their writing task; informative text (non-fiction) and narrative text (fiction) writing. However, only the informative text could increase students' motivation in doing writing task in Google Docs. It was indicated some reasons behind this preference, the informative text required them to do research (finding facts) for their writing, to insert some graphics/illustration/photos and to interact-and-share their writing with peers. Therefore, this integration helps them to find joy within the writing task and as the bridging point of their preference in technology and their need for improving their language skills.

Conclusion

Through two cycles of writing tasks from semester one to semester two, class observation and interview, it can be concluded that the challenges happened not only for a student with ASD but also for a student without ASD with minimum experience of English language learning (less significant progress group), to follow the pace in real-time feedback. However, the challenges were followed by the opportunities to develop this approach better in the future, time efficiency, students' handwriting issues, and students' motivation were the major opportunities can be taken as the biggest solution in nowadays language class as well as in inclusive classroom setting. It is suggested to conduct a similar research to know the challenges and opportunities in a bigger classroom context since this study was conducted in a small classroom setting with less than 10 (ten) students in total, so it was quite possible for a teacher to give the real-time feedback.

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***The Development of a Novel Using Storytelling Technique as a Learning Tool
in Promoting Student Engagement and Satisfaction***

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

The purposes were to 1) develop a novel using storytelling technique as a learning tool. 2) examine student engagement and satisfaction after applying a developed novel. The purposive sample group was 24 students. The research instruments were 1) a developed novel 2) a questionnaire collecting expert opinions towards appropriateness of a developed novel 3) an observation checklist towards student engagement 4) a questionnaire towards student satisfaction. Statistical methods used were content analysis, mean, standard deviation, frequency and percentage. The research results were summarized as following: 1) The developed novel consisted of 7 chapters with 69 pages covering content knowledge of learner characteristics, learner-centered teaching, educational problems, and the future of education. There were 6 main steps to develop a novel. First, the topic was chosen. Second, key concepts were used as content knowledge and design. Third, the plot and theme were planned. Fourth, the scenes were set. Fifth, the characters were introduced. Sixth, the story was written in a form of a novel. It was verified by experts as appropriate ($\bar{X} = 4.54$, S.D. = 0.44) at a very high level in its content, structure and presentation. 2) Most of students engaged in learning activities that used the developed novel as a learning tool. Student satisfaction when using the developed novel as a learning tool was at a high level ($\bar{X} = 4.36$, S.D. = 0.49). Students found the developed novel as a new, interesting and fun learning tool to remember, understand and retain content knowledge. In conclusion, the results suggested that the developed novel using storytelling technique yielded positive impact on student engagement and satisfaction. Therefore, the developed novel can be used as a powerful learning tool to engage students in learning activities and promote student satisfaction for better learning.

Keywords: Novel, Storytelling Technique, Learning Tool, Student Engagement, Student Satisfaction

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Introduction

There is a consensus that student learning is important (Darling-Hammond, 2000) and if students do not learn, which demonstrated in form of not getting engaged and satisfied with their own learning, the established learning outcomes will not be achieved at the end of class. Fortunately, there is a variety of learning tools that can be used in the classroom to support student learning, ranging from traditional to high-tech options. Depending on course learning goals and outcomes, instructors may choose to use one or several of these learning tools to augment the teaching and learning environment in their classroom (Yale, n.d.) and learning can be enjoyable if teachers use appealing methods of teaching (DiPerna, 2008). Storytelling is commonly used in education for learning, explaining and entertaining (Li & Hew, 2017) because it engages and entertains students while enabling students to easily recall facts from the story (Rossiter, 2002). Lindesmith & McWeeny (1994) and Zhao (2012) also stated that storytelling is a teaching method which is based on a carefully chosen story to illustrate and explain the things that teachers want students to know. This teaching method also helps students think further from the story about the insights, ideas, feelings, and experiences that remain in the story. McDrury & Alterio (2003) agreed that when storytelling is formalized in meaningful ways, it can capture everyday examples of practice and turn them into an opportunity to learn - encouraging both reflection, a deeper understanding of a topic and stimulating critical thinking skills. Therefore, it has become an important technique in the process of learning (Abrahamson, 1998), which is considered as an ideal teaching and learning tool, for it takes seriously the need for students to make sense of experience, using their own culturally generated sense-making processes (Bishop and Glynn, 1999). By telling stories, students are engaged in the process of their own learning. Research has demonstrated that engaging students in the learning process increases their attention and focus, motivates them to practice higher-level critical thinking skills and promotes meaningful learning experiences (Center for Teaching and Learning, n.d.). Furthermore, many studies have shown that student engagement and satisfaction can maximize student learning as it helped reflect on students' willingness, need, desire, and compulsion to participate in, and be successful in, the learning process (Bomia et al, 1997). According to Vanichvasin (2017), she used storytelling as a knowledge management tool to promote student learning and as a communication tool to enhance the effectiveness of communication and her researches demonstrated positively that students were satisfied with the novel-based teaching and learning approach. If storytelling is used as a learning tool, it is anticipated that it can yield the same positive results. Therefore, the researcher was interested in building on her previous studies to develop a novel as a medium using storytelling technique as a learning tool through learning activities to promote student engagement and satisfaction as it seemed that storytelling can engage students and bring satisfaction to them with its entertaining characteristics. It was anticipated that the results of this research would be useful for establishing storytelling technique as a learning tool for better learning.

Research Methodology

The novel using storytelling technique intervention was developed from documentary review on theories and related researches. A six staged process from documentary review was applied. First, the topic was chosen. Second, key concepts were used as content knowledge and design. Third, the theme and plot were planned. Fourth, the

scenes were set. Fifth, the characters were introduced. Sixth, the story was written in a form of a novel. The developed novel was then examined with an appropriateness questionnaire by three experts with a variety of professional and personal background for its content, structure and presentation. After revising from comments of experts, the researcher then posted a developed novel using storytelling technique online for class learning and participation with duration of four weeks to 24 targeted samples who enrolled in courses that the researcher, as an instructor, was responsible for teaching by using purposive sampling. The researcher then examined student engagement and satisfaction after applying a developed novel with observation checklist of student engagement and student satisfaction questionnaire.

Results

The developed novel consisted of 7 chapters with 69 pages covering content knowledge of learner characteristics, learner-centered teaching, educational problems, and the future of education. There were six main steps to develop a novel. First, the topic was chosen by selecting the content knowledge to be the main focus of a novel and naming the topic of a novel. Second, key concepts were used by selecting key concepts, that is, learner characteristics, learner-centered teaching, educational problems, and the future of education to be put as key content in the developed novel. Third, the plot and theme were planned by creating the plot about the present educational problems with theme of finding the best practices to fix those problems and at the same time understanding learner more to educate them better. Fourth, the scenes were set by setting the scene around the educational problems to make a sequence of important events and to lead the main characters to find out the best practices of better education. Fifth, the characters were introduced by introducing main characters and describing them through a sequence of actions among different scenes to tell the story. Sixth, the story was written in a form of a novel by developing a novel to tell the story about finding the best practices to fix educational problems.

It was then verified by experts as appropriate ($\bar{X} = 4.54$, S.D. = 0.44) at a very high level in its content, structure and presentation.

Table 1 Means and Standard Deviation of Appropriateness

Appropriateness	n = 24		Interpretation
	\bar{x}	S.D.	
Content	4.67	0.58	Very high
Structure	4.33	0.58	High
Presentation	4.67	0.33	Very high
TOTAL	4.54	0.44	Very high

From table 1, it demonstrated that mean and standard deviation of the appropriateness of a developed novel was 4.54 and standard deviation (S.D.) was 0.44. This meant that the developed novel was appropriate at a very high level.

1. Student engagement after applying a developed novel

Table 2 Frequency and Percentage of Student Engagement

Student Engagement	n = 24			
	Engaged		Not engaged	
	Number	Percentage	Number	Percentage
1. Chapter 1	24	100	0	0
2. Chapter 2	23	95.83	1	4.17
3. Chapter 3	23	95.83	1	4.17
4. Chapter 4	22	91.66	2	8.34
5. Chapter 5	20	83.33	4	16.67
6. Chapter 6	23	95.83	1	4.17
7. Chapter 7	24	100	1	0
TOTAL	94.64		5.36	

From table 2, it demonstrated that most of students (94.64 out of 100 percent) engaged in learning activities (for example: questions, discussion and etc.) that used the developed novel as a learning tool.

Student satisfaction after applying a developed novel

Table 3 Means and Standard Deviation of Student satisfaction

Student Satisfaction	n = 24		Interpretation
	\bar{X}	S.D.	
1. A developed novel is designed on the basis of the established learning outcomes	4.29	0.62	High
2. A developed novel helps students achieve the established learning outcomes	4.33	0.56	High
3. A developed novel is a suitable, easy and understandable learning tool	4.42	0.65	High
4. A developed novel makes the content accessible helps give content knowledge	4.29	0.55	High
5. A developed novel enhances content knowledge to a wider perspective through its learning activities	4.42	0.58	High
6. A developed novel motivates students to learn	4.54	0.59	Very High
7. A developed novel helps stimulate interest throughout the learning process	3.75	0.61	High
8. A developed novel makes the learning process much more effective through learning activities	4.29	0.62	High
9. A developed novel helps remember content knowledge	4.46	0.59	High
10. A developed novel helps students get satisfied with its entertaining characteristics	4.67	0.48	Very High
11. A developed novel is used in a variety of learning activities as a learning tool	4.50	0.51	Very High
Total	4.36	0.49	High

The data analysis in Table 3 showed that mean was 4.36 and standard deviation (S.D.) was 0.49. This meant that student satisfaction was at a high level. Results from open ended answers were that students found a developed novel as a new, interesting and fun learning tool to remember, understand and retain content knowledge.

Conclusion

In conclusion, the research yielded positive impact on student engagement and satisfaction, which supported that storytelling in a variety of forms such as a novel can be used as a powerful learning tool to engage students in learning activities and promote student satisfaction for better learning.

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E-learning Strategies in English Language Learning in Pre-service Teacher Education: Comparison in Hong Kong and Mainland China

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

The knowledge and pedagogies of English e-learning taught in teacher education courses would assist student teachers to design their lectures. Thus, the strategies and attitudes of student teachers to the teaching education course lead a widespread discussion for higher education in Hong Kong and Mainland China. It not only benefits to educators and university student teachers to understand the models for teacher education development but also helps Chinese university student teachers to understand the advantages and shortages about their English e-learning strategies in teacher education course. Meanwhile, Chinese university student teachers could improve and contribute to the innovative strategies and acceptable attitudes to English e-learning in teacher education courses. This study aims to compare the difference and commons in the strategies and attitudes of Chinese university student teachers to English e-learning in teacher education courses in Hong Kong and Mainland China. One hundred Chinese university students of English are involved. The mixed-method approach would be adopted in the research. The study would mainly focus on designing the framework for the research which relates to strategies and attitudes to English e-learning in teacher education course of Chinese university student teachers in Hong Kong and Mainland China. The findings assist educators and Chinese university student teachers to know the general situation of strategies and attitudes to English e-learning in teacher education course in Hong Kong and Mainland China.

Keywords: the comparison in teaching English as second language education, e-learning practices, pre-service teacher education in China

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Introduction

With the development of educational technology, the trend of teacher education reform presses hard on its way both in Hong Kong and mainland China, thus teacher professional development with e-learning implementation for 21st century which also is called digital era lead massive debates in educational field. Shin and Crandall (2014) agreed that teaching in 21st century skills which are helpful to improve the curricula and teaching strategies need to be emphasized to every educator especially digital literacy including information literacy, media literacy and information and communication technology (ICT) literacy. Thus, it is very important to both educators and students to improve the English skills and knowledge by technical-mediated instruction. Based on the previous researches, learners' higher learning performance is depended on appropriated learning strategies. Learners with lower learning performance since they did not use the suitable learning strategies, but they used the easiest learning strategies they perceived. (Leaver, Ehrman and Shekhtman, 2005). The goals of this research focus on designing frameworks for the research related to English e-learning strategies in teacher education in Hong Kong and Mainland China.

Background of e-learning and e-learning Strategies

E-learning is a complex definition in the field of education and different scholars and educational organizations had distinguished explanation about the e-learning. Laferrière, Lamon and Chan (2006) pointed out e-learning strategies are not only tools but also one chance to help teacher instructors to better understand the knowledge they learnt then to improve the strategies for future teaching and learning of themselves and their students. Fee (2009) showed the clear way of the developments of e-learning strategies which also could help e-learning beginners to find the shortcuts to access to their suitable e-learning strategies. The author suggested that e-learning beginners could exercise the corporate strategies firstly, then they could summarize the learning and development strategies for improving their learning effectively, finally, they could clarify appreciated e-learning strategies for their learning needs and achievement.

The Categories and Development of e-learning Strategies

The appreciated e-learning strategies would help learners to effectively learning. Fee (2009) indicated that the development of e-learning strategies could follow the strategies development cycle. Firstly, learners should develop their e-learning resources and identify the quality of the e-learning resources. Second step is called building the capability which focus on both the learners themselves and e-learning strategies. It means learners could complete the self-improvement by appreciated e-learning strategies and then to find the leaks of present e-learning strategies to fix and improve them. Finally, learners should choose the e-learning strategies to match their own learning needs even they may not be perfect for others. Laferrière, Lamon and Chan (2006) believed that only teachers showed how often they use the e-learning strategies and how they use could influence their teaching beliefs and practice during their teaching process. Turvey (2010) researched that how to develop the understanding and knowledge of e-learning strategies from in-serve students to the student teachers, the author believed that e-learning itself is a strategy which is valuable to research the sufficient definition and scopes of it. Based on the theory for

cognition, the strategies could be divided into four aspects which are cognitive strategies, metacognitive strategies, social strategies and affective strategies. English language learners can find suitable strategies for English language teaching and learning. Anderson (2005) showed that seven different learning strategies, which are cognitive strategies, metacognitive strategies, memory strategies, compensatory strategies, affective strategies, social strategies and self-motivating strategies.

The Implementation of E-learning Strategies in English Learning and Teaching

Curtin (2009) discussed the English e-learning strategies from two perspectives. One is from the perspective of teachers support strategies for English language learners. Teachers need to be patient and keep smile when they interact with students. Teachers should consider that students individual situation and learning abilities and diversity of teaching materials. Sternberg and Spear (1996) summarized that three general teaching strategies which would increase the interaction between teachers and students. Firstly, lecture-based teaching strategies are directly pressing the teaching contents and simply interaction between teachers and students. Secondly, question-based teaching strategies that teachers would tell the understanding of knowledge and skills from students by asking students questions. Finally, thinking-based teaching strategies which focus on the discussions and debate among students and teachers could aware the learning difficulties and problems from students by observing and indirectly intervening.

E-learning Strategies in English Learning and Teaching in Hong Kong and Mainland China

Littlewood and Ngar-Fun (1996) illustrated that English is one of vital characteristic of educated person in Hong Kong. Bankowski, E. (2000) summarized 21 items about English learning skills and strategies would be referred as designed for questionnaires for this study. In Hong Kong, the Knowledge Society Network is utilized by some teachers and would provide the chances to visitors to scan the whole designed lecture within pedagogies, assessments and creative activities (Laferrière, Lamon and Chan, 2006). Keengwe and Kang (2013) founded that technology-rich curriculum offered more chances to Chinese learners of English in the e-learning environment, such as they could complete diverse teaching and learning activities and games about English language learning and teaching.

Methodology

Macaro (2002) illustrated basic research method for studying English e-learning strategies within two aspects. One is descriptive method which focused on the features and the number of strategies. It could also be the guideline for the quantitative research method by questionnaires for this study. The other is intervention method which focused on in-depth change and reasons of strategies. It can be the guideline for the qualitative research method by interviews and observations for this study. One hundred Chinese university students of English are involved. The mixed-method approach would be adopted in the research. The study would mainly focus on the strategies and attitudes to English e-learning in teacher education course of Chinese university student teachers in Hong Kong and Mainland China. The findings will help educators and Chinese university student teachers to

know the general situation of strategies and attitudes to English e-learning in teacher education course in Hong Kong and Mainland China.

Conclusion

The purpose of this study is to suggest Chinese university student teachers in Hong Kong and Mainland China for future teaching and learning in teacher education development. Since the data are still collected, thus the results of this research will be presented in further papers.

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***Zoo Kids Zone in Chiang Mai Zoo: Best Practice Activities
under the Concept of Edutainment***

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

In the term of edutainment which is currently defined as the helper for social and health problems, this paper is intended to empirically apply the conceptual framework of edutainment to evaluate the behavior of young tourists who attended to the Zoo Kid Zone in Chiang Mai zoo, Thailand. Additionally, the empirical practice done in this paper is conducted directly to investigate the capability of the students who are above 15 years old to understand the edutainment concept by doing activities in the Zoo Kid zone for suggesting efficient plans to the policy makers. Methodologically, 355 young tourists are sampled to analyze by the descriptive and statistical approaches for clarifying the correlation between edutainment activities in the kid zone and tourists' perception and adoption. The results were obvious that the sampled people misunderstand the edutainment concept and they did not realize this issue in daily life. Consequently, these results will be the crucial work that empirically explains the recognition of edutainment travellers should be mentioned and implemented for improving the higher standard of the kid sector in Chiang Mai zoo. Furthermore, the pilot practical results in this paper will be the useful application for other zoos around Thailand that similarly have kid zone activities.

Keywords: Edutainment, Adoption, Kid activities, Choice analysis

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Introduction

What is Edutainment? Education and Entertainment can be combined as a new word called “Edutainment”. This regards the study of using input factors, processes, and output factors in each form of communications to apply in many educational situations. Why we should apply edutainment in educational institutions? Inevitably, educational activities need enjoyable things and entertainment activities needs educational learning. So, the concept of edutainment can provide knowledge, enjoy with environment, entertainment, relaxing, and learning by doing. Why is the Zoo Kids Zone in Chiang Mai Zoo? Chiang Mai zoo is the worldwide zoological place that is guaranteed by the World Association of Zoos and Aquariums (WAZA). The Zoo Kids zone is one of spotlighted sections located in the zoo. This place was established to provide kids for learning about animals, humans, technologies and ecological systems. As a result, edutainment would be suitably applied to improve services of this zone.

1. Objectives

1. To evaluate the activities in the Zoo Kids zone based on edutainment applications.
2. To study expectations and attitudes of audiences in the Zoo Kids zone.
3. To recommend a policy “Best Practice” for planning edutainment activities in the zoo Kids zone.

2. Review Literature

Zühal Okan (2003) studied the edutainment application to remedy children who addicted electronic games. Vasanth Kiran and team (2012) explored the edutainment application in how to use Hollywood movies in classrooms. Erin M. Steffes and Philippe Duverger (2012) applied edutainment ideas combining video clips to cure children who addicted them.

3. Research Methodologies

The methodology was implemented in this research are consist of the descriptive statistics and logit model. The observations were collected from the sample size equal to 355 by surveying in Zoo Kids zone of Chiang Mai zoo in during period of 1 year (2016-2017).

3.1 data description

Table 1. Display the data of Gender who visited in Zoo Kids zone of Chiang Mai zoo in during period of 1 year (2016-2017).

Gender	Amount	Percentage
Men	140	39.4
Women	215	60.6
Total	355	100

Source: surveying

From table 1 was indicated that women have already visited in Zoo Kids zone of Chiang Mai zoo in during period of 1 year (2016-2017) more than man equal to over 60 %. From table 2, the people who were collected by surveying of this study have mostly the age of 15 to 19 is equal to 38%. From table 3, which it was presented that the data of the address for who visited in Zoo Kids zone of Chiang Mai zoo in during period of 1 year (2016-2017). Most of them have address in Chiang Mai is equal to 53.2%. Table 4, which it display that the data of frequency of visiting for who visited in Zoo Kids zone of Chiang Mai zoo in during period of 1 year (2016-2017). Most of them came to Zoo Kids zone of Chiang Mai zoo in during period of 1 year is equal to 1 times or about of equal to 56.6%. In table 5, which it present the data of types for traveling for who visited in Zoo Kids zone of Chiang Mai zoo found that most of them visited this place with their family is equal to more than 80%.

Table 2. Display the data of Age who visited in Zoo Kids zone of Chiang Mai zoo in during Period of 1 year (2016-2017).

Age	Amount	Percentage
15 - 19 ปี	135	38.0
20 - 24 ปี	44	12.4
25 - 29 ปี	39	11.0
30 - 34 ปี	62	17.5
35 - 39 ปี	44	12.4
40 - 44 ปี	17	4.8
45 - 49 ปี	4	1.1
50 - 54 ปี	4	1.1
55 - 59 ปี	2	0.6
More than 60	4	1.1
Total	355	100

Source: surveying**Table 3.** Display the data of the address for who visited in Zoo Kids zone of Chiang Mai zoo in During period of 1 year (2016-2017)

Location	Amount	Percentage
In Chiang Mai	189	53.2
Other provinces	166	46.8
Total	355	100

Source: surveying

Table 4. Display the data of the frequency of visiting for who visited in Zoo Kids zone of Chiang Mai zoo in during period of 1 year (2016-2017)

Frequency	Amount	Percentage
First time	201	56.6
Twice	55	15.5
More than twice	99	27.9
Total	355	100

Source: surveying

Table 5. Display the data of types for traveling for who visited in Zoo Kids zone of Chiang Mai zoo in during period of 1 year (2016-2017)

Company	Amount	Percentage
Alone	8	2.3
With families	294	82.8
Tour groups	6	1.7
Schools/University	2	0.6
With friends	43	12.1
Others	2	0.6
Total	355	100

Source: surveying

From table 6, this table display about the data of education for who visited in Zoo Kids zone of Chiang Mai zoo in during period of 2016 to 2017. Most of them are study in bachelor degree is equal to 41.7% and second order of the group has visiting in this place has of education level as the firs high-school is equal to a proximally 23% respectively.

Table 6. Display the data of education for who visited in Zoo Kids zone of Chiang Mai zoo in during period of 1 year (2016-2017)

Education	Amount	Percentage
First high-school	81	22.8
Second high-school	53	14.9
vocational certificate	35	9.9
Bachelor degree	148	41.7
Others	38	10.7
Total	355	100

Table 7. Display the data of expenditure for who visited in Zoo Kids zone of Chiang Mai zoo in during period of 1 year (2016-2017)

Expenditure (Baht)	Amount	Percentage
< 100	156	43.9
101 - 200	92	25.8
201 - 300	64	18.0
301 - 400	8	2.3
401 – 500	31	8.7
> 501	4	1.1
Total	355	100

Source: surveying

The last table, this table displayed the data of expenditure for who visited in Zoo Kids zone of Chiang Mai zoo in during period of 1 year (2016-2017). In terms of data collection by surveying method was demonstrated that more than 40% of them expend less than 100 baht per time to visit the Zoo Kids zone of Chiang Mai zoo in during period of this study. In addition, the visitors have to expend higher from 300 to more than 500 baht per time is equal to a proximally 12%.

4.2 The empirical result of model estimation

Table 8. Display the result of model estimation for logit model based considers on the social And economic factors are influencing for revisiting of Zoo Kids zone of Chiang Mai zoo

```
. logit back gender age place frequence company education expenditure, robust
Iteration 0:  log pseudolikelihood = -142.48558
Iteration 1:  log pseudolikelihood = -135.80585
Iteration 2:  log pseudolikelihood = -135.46644
Iteration 3:  log pseudolikelihood = -135.46521
Iteration 4:  log pseudolikelihood = -135.46521

Logistic regression                                Number of obs   =       355
                                                    Wald chi2(7)    =       15.41
                                                    Prob > chi2     =       0.0311
Log pseudolikelihood = -135.46521                Pseudo R2      =       0.0493
```

back	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
gender	.8062772	.3294185	2.45	0.014	.1606288	1.451926
age	.0500574	.0242832	2.06	0.039	.0024631	.0976516
place	.2065725	.3194333	0.65	0.518	-.4195053	.8326503
frequence	-.2426542	.1709402	-1.42	0.156	-.5776907	.0923824
company	.042845	.1686434	0.25	0.799	-.2876901	.3733801
education	-.2251114	.1335971	-1.69	0.092	-.4869569	.0367342
expenditure	.0005985	.0009984	0.60	0.549	-.0013582	.0025552
_cons	-.0725908	1.269495	-0.06	0.954	-2.560754	2.415573

From: authors

From table 8, the logit model estimation was indicated that only the social factor was influencing for who revisited the Zoo Kids zone of Chiang Mai zoo in during period of study. In other factor is not influenced for who revisited the Zoo Kids zone of Chiang Mai zoo in during the same period of study. In addition, the social factor influenced of who revisited the Zoo Kids zone is consist of gender, age, and education respectively. In term of logit model explanation for this visiting behavior give more detail that the gender and age have a positively relationship with the probability of who will revisit the Zoo Kids zone of Chiang Mai zoo. In contrast, the education of the people visited the Zoo Kids zone of Chiang Mai zoo has impact of a reducing the probability of who revisited the Zoo Kids zone of Chiang Mai zoo. It implied that whenever the people have more higher education then they will reduce of revisit in the Zoo Kids zone of Chiang Mai zoo as less as they can.

Table 9. Display the result of model estimation for logit model based consider on the Expectation before entrance

Logistic regression		Number of obs = 355				
Log pseudo likelihood = -104.51653		wald chi2(34) = 75.82	Prob > chi2 = 0.0001			
		Pseudo R2 = 0.2665				
back	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
e_hall	-.1736386	.4790224	-0.36	0.717	-1.112505	.765228
e_intro	.8851162	.604908	1.46	0.143	-.3004817	2.070714
e_greenzoo	-.2011943	.5361388	-0.38	0.707	-1.252007	.8496185
e_manriver	.580173	.6888112	0.84	0.400	-.7698721	1.930218
e_model	-.2758029	.4512227	-0.61	0.541	-1.160183	.6085772
e_hunting	-.4481027	.5139066	-0.87	0.383	-1.455341	.5591358
e_anatomy	.2316092	.4795251	0.48	0.629	-.7082428	1.171461
e_consume	-1.145404	.5929691	-1.93	0.053	-2.307602	.0167943
e_forrest	-.1204449	.6350979	-0.19	0.850	-1.365214	1.124324
e_reenergy	.7120252	.8612946	0.83	0.408	-.9760813	2.400132
e_games	-.4932807	.4649285	-1.06	0.289	-1.404524	.4179624
e_elephant	-1.101026	.4857365	-2.27	0.023	-2.053052	-.1489995
e_royal_pro	-.2800446	.6151852	-0.46	0.649	-1.485785	.9256963
e_cinema	-.5888855	.6974402	-0.84	0.398	-1.955843	.7780722
e_library	1.530324	.6848065	2.23	0.025	.1881278	2.87252
e_know1	1.000163	.5770582	1.73	0.083	-.1308501	2.131176
e_know2	-1.539266	.8047483	-1.91	0.056	-3.116544	.0380112
e_know3	-.3037231	.6860253	-0.44	0.658	-1.648308	1.040862
e_know4	-.6605013	.6645343	-0.99	0.320	-1.962965	.6419619
e_know5	1.55761	.7536971	2.07	0.039	.0803912	3.034829
e_know6	-2.041278	.6451253	-3.16	0.002	-3.305701	-.776856
e_know7	2.637487	.7460321	3.54	0.000	1.175291	4.099683
e_know8	-.3071129	.760596	-0.40	0.686	-1.797854	1.183628
e_know9	-.6283532	.557761	-1.13	0.260	-1.721545	.4648382
e_fun1	1.152594	.6868282	1.68	0.093	-.1935647	2.498752
e_fun2	-2.443739	1.001005	-2.44	0.015	-4.405672	-.4818057
e_fun3	-.1913878	.7936731	-0.24	0.809	-1.746958	1.364183
e_tech1	-.1156229	.670986	-0.17	0.863	-1.430731	1.199485
e_tech2	-.0264962	.9018746	-0.03	0.977	-1.794138	1.741145
e_tech3	1.800919	.7887904	2.28	0.022	.2549187	3.34692
e_act1	1.153986	.4917386	2.35	0.019	.1901959	2.117776
e_act2	-1.64908	.9338564	-1.77	0.077	-3.479405	.181245
e_act3	1.189736	.7858759	1.51	0.130	-.3505528	2.730024
e_act4	.1870342	.6540905	0.29	0.775	-1.09496	1.469028
_cons	.1197801	.9344343	0.13	0.898	-1.711678	1.951238

From: authors

From table 9, the results of logit model estimation was indicated that the 13 factors were influencing on the expectation for probability of whom still never to revisit the Zoo Kids zone of Chiang Mai zoo in during period of study. In those factors consists of two group are influencing on both the positive direction and negative direction to the expectation of the probability of them before they revisit the Zoo Kids zone of Chiang Mai zoo in during the same period of study. First, the positive direction factors are affected to their expectation of probability of before to revisit again the Zoo Kids zone of Chiang Mai zoo is to consist of 7 factors such as library room of animal (e_library), the exhibition of Chiang Mai zoo history (e_know_1), the exhibition of hunting equipment (e_know_5), the exhibition of forest in Thailand(e_know_7), animal game zone(e_fun_1), the exhibition of technology for Zoo Kids zone (e_tech_3), and the last positive factor is the activity influence to self-exiting away(e_act_1). In contrast, the negative direction factors are affected to their expectation of probability of before to revisit again the Zoo Kids zone of Chiang Mai zoo is to consist of 6 factors such as exhibition of displaying for wrong thinking for consume the animals (e_consume), the 3D exhibition of elephant (e_elephant), the

exhibition of introduction for Chiang Mai zoo (e_know_2), the exhibition of anatomy of animals (e_know_6), the exhibition of 3D drawing (e_fun_2), and the last negative factor is the exhibition of activity to stimulate the creative thinking(e_act_2). In conclusion, the empirical results of estimation from logit model suggested that the overall of those factors confirmed that visitors to visit the Zoo Kids zone is satisfied with the process of entertaining people at the same time as teaching them the knowledge together. From table 10, this table display about the result of model estimation for logit model based consider on attitude after entrance. The factors have influence on the probability to revisit of whom have ever been in Zoo Kids zone of Chiang Mai Zoo is still decreased when compare the result of estimation from previous logit model. In this case, only 8 factors are affected the probability of whom to revisit the Zoo Kids zone again. In the positive direction factors to impact the probability of whom to revisit this place consist of 5 factors such as the exhibition of green zone (a_know_3), the exhibition of forest in Thailand (a_know_7), the exhibition of VDO story of wrong thinking to consume of animals (a_tech_2), the exhibition of technology for Zoo Kids zone (e_tech_3), and the last positive factor is the exhibition of activity to stimulate the creative thinking (e_act_2).

Table 10. Display the result of model estimation for logit model based consider on attitude after Entrance

Logistic regression		Number of obs	=	354
		wald chi2(19)	=	82.09
		Prob > chi2	=	0.0000
Log pseudolikelihood = -98.380331		Pseudo R2	=	0.3088

back	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
a_know1	.0232708	.4995383	0.05	0.963	-.9558062	1.002348
a_know2	-.8551793	.4038813	-2.12	0.034	-1.646772	-.0635865
a_know3	1.359522	.3678731	3.70	0.000	.6385038	2.08054
a_know4	.4261774	.3844959	1.11	0.268	-.3274208	1.179776
a_know5	.4916825	.3655833	1.34	0.179	-.2248476	1.208213
a_know6	-.3297007	.3999117	-0.82	0.410	-1.113513	.4541117
a_know7	1.004898	.5229255	1.92	0.055	-.0200169	2.029814
a_know8	-.3913003	.3835331	-1.02	0.308	-1.143011	.3604108
a_know9	-.201766	.4702936	-0.43	0.668	-1.123525	.7199925
a_fun1	-.5975225	.3962179	-1.51	0.132	-1.374095	.1790503
a_fun2	-.8431556	.5081954	-1.66	0.097	-1.8392	.1528891
a_fun3	.1238777	.4290325	0.29	0.773	-.7170106	.964766
a_tech1	-.6552788	.5029457	-1.30	0.193	-1.641034	.3304767
a_tech2	.7213414	.3770774	1.91	0.056	-.0177167	1.4604
a_tech3	.9925319	.5934819	1.67	0.094	-.1706712	2.155735
a_act1	-.5777367	.5680043	-1.02	0.309	-1.691005	.5355314
a_act2	1.192524	.4898135	2.43	0.015	.2325068	2.15254
a_act3	.5747984	.4389425	1.31	0.190	-.2855131	1.43511
a_act4	-.4406152	.4094886	-1.08	0.282	-1.243198	.3619677
_cons	-4.95416	1.44915	-3.42	0.001	-7.794442	-2.113879

From: authors

For the negative factors to effect of the probability to revisits of who have ever already been Zoo Kids zone of Chiang Mai Zoo. The first factor is the exhibition of introduction for Chiang Mai zoo (e_know_2) and the second factor is the exhibition of 3D drawing (e_fun_2). And the last factor has a negative impact on the probability to revisit in Zoo Kids zone of Chiang Mai Zoo is other factors are not included in the

logit model. However, some factors in the logit model estimation are found that they would be displayed in the same direction in both before coming and after coming to visit the Zoo Kids zone in Chiang Mai Zoo. If those of factors have positive influence on the probability to revisit in the Zoo Kids zone of Chiang Mai Zoo then both government sector and private sector must be stimulated these activities more than previously for improving of the Zoo Kids zone of Chiang Mai Zoo. Which it will be as a suitable process of based on learning by the best practice activities under the concept of edutainment for this place.

5. Conclusion

The binary statistic model confirmed that the factors of social and economics, activities, and audiences' knowledge backgrounds significantly relate to their re-visiting decision. It is obvious that sampled people needed to be basically improved regarding the concept of edutainment since the results stated people raised high expectations, but they have gained a few of good experiences after attending. The edutainment concept really needs the rotations of creative activities, and public and publication supports to encourage audiences to recommend to others.

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A Study of Praise, Motivation, and Self-esteem of Low-achieving Students in Mentoring Groups

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

The study attempts to examine the effects of evidence-based praise strategies on the learning motivation and self-esteem in low-achieving students in mentoring groups and study the processes that influence the corresponding changes. Participants in the study were students from two secondary schools in Hong Kong. Thirty-two students participated in one of the four weekly mentoring groups, each of which was facilitated by a school-based mentor. Data triangulation and methodological triangulation were employed in the study; data were collected from student questionnaires, observational field notes, and interviews with mentees and mentors before and after the intervention program. Two major findings arise from the investigation: first, the implementation of praise strategies, which promoted adaptive attribution patterns, was effective in the enhancement of students' learning motivation and academic aspect of self-esteem while no significant change was noticeable on their global self-esteem. Second, it was found that the corresponding change processes should be understood from the interacting forces of the environment, student personal factors, and student behavior. In particular, mentor-mentee relationships and social climate in learning environments emerged as key contextual factors which mediated the outcomes of praise administration. In conclusion, when bestowed strategically, praise can be conducive to learning motivation and self-esteem of low-achieving students. More research is needed to cover more diversified populations and understand the long-term consequences of research-informed praise strategies.

Keywords: mentoring, learning motivation, self-esteem, low-achieving students

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1. Introduction

In an attempt to enhance the motivation and self-esteem of low-achieving students, a wide range of instructional strategies have been suggested by educational psychologists, with praise being singled out as a particularly valuable and desirable form of reinforcement of good conduct and successful performance in the classroom setting (Brophy, 1981). As a mentor teaching English language at a secondary school with most of its students performing below average academically, I observed that most students did not devote time and effort to learning. It was speculated that the reason for this behavior was that they had experienced much more failure than success in their academic pursuits; strongly influenced by the examination-oriented and competitive school culture, students subconsciously equated their self-worth with the scores they obtained from academic assessments such as tests and examinations. However, when students were praised for positive learning behavior other than academic results alone on a consistent basis, their level of classroom engagement and self-confidence in learning appeared to be higher. In line with my teaching experience, a number of research have shown that praise, if effectively administered, can offer an array of benefits on learning motivation and self-esteem, such as boosting self-efficacy (Bandura, 1977, 1997), enhancing feelings of competence (Deci & Ryan, 1985), and encouraging adaptive effort attributions (Henderlong, 2000; Mueller & Dweck, 1998). Having said that, the vast majority of previous research is primarily based on experimental procedures that necessarily remove the actual context in which praise is bestowed without taking the change processes of students into consideration; little is known about the changes of beliefs, intentions, cognitions, and even behavior of students in the natural learning environment, which is useful information for teachers in managing student learning. Furthermore, the measures of motivation and self-esteem in previous findings were mostly self-reported by research participants in surveys; the adaptation processes were often not examined and explored in detail. Therefore, this study attempts to use mixed methods, including surveys, interviews, document analysis, and observations, to study the changes of motivation and self-esteem in low-achieving students under the local secondary education after the intervention of praise strategies in a naturalistic setting. It then offers justified explanations for the changes observed. It is worth noting that the research intends to provide insights into the dynamic relationships between the instructional strategy of praise, learning motivation, and self-esteem of lower-achieving students such that instructional delivery and appropriate interventions can be more effectively designed by teachers in the promotion of student learning in future.

2. Literature Review

2.1 Definition and Overview of Praise, Motivation, and Self-Esteem

Praise refers to positive evaluations made by the teachers of a student's products, performances, or attributes, where the teacher as an evaluator presumes the validity of the standards on which the evaluation is based (Kanouse, Gumpert, & Canavan-Gumpert, 1981). It should be noted that praise connotes a more intense and detailed teacher response to student behavior than such terms as feedback and acknowledgment (for example, "That's correct"; "You scored 80 marks."), which are

classified as neutral forms of recognition (Brophy, 1981). Moreover, the characteristics of praise statements may also affect children's responsiveness to praise; characteristics of effective praise include its being contingent on desirable behavior (Shores, Gunter, & Jack, 1993; Willingham, 2005), behavior specific (Chalk & Bizo, 2004; Sutherland, Wehby, & Copeland, 2000), and focused on effort and process (Dweck, 2000; Hitz & Driscoll, 1988). Henderlong and Lepper (2002) state that praise is not simply a one-way transmission from the teacher to the student praised but rather a complex social communication in which both have equally important roles to play; the effects of praise differ depending not only on the content of praise but also the context involved, the intended meanings of praise conveyed, and also the interpretations of praise by students.

Motivation is one of the most important concerns that educators and teachers deal with in order to improve student learning (Williams & Williams, 2011). It has been found to be essential in facilitating a desire to engage in learning and pursue educational goals (Elliott, Hufton, Willis, & Illushin 2005; Reeve, 2006). According to Maehr and Meyer (1997), motivation is a theoretical construct used to explain the initiation, direction, intensity, persistence, and quality of behavior, especially goal-directed behavior. In the classroom setting, the concept of learning motivation is used to explain the degree to which students invest attention and effort in different pursuits, which may or may not be those desired by school teachers. Learning motivation is rooted in students' subjective experiences and their reasons for doing so and can be understood as a complex construct that is contextual, domain-specific, and inherently changeable (Pintrich & Schunk, 2002).

Self-esteem is defined as the evaluation of our own self-concept and value that each of us places on our own abilities and behavior (Woolfolk, 1995). It can be categorized as either global or specific; the former refers to an all-round feeling of self-worth and confidence while the latter refers to a feeling of self-worth and confidence with respect to a specific activity or behavior in such domains as academic, emotional, physical, and social (Shavelson, Hubner, & Stanton, 1976). Self-esteem influences the psychological well-being, motivation, and achievement of individuals, as suggested by Franken (1994):

“People who have good self-esteem have a clearly self-differentiated self-concept... When people know themselves they can maximize outcomes because they know what they can and cannot do” (p.439).

Adolescents with high self-esteem are likely to be successful in accomplishing their life tasks and tackling learning challenges, whereas those without healthy self-esteem may fail to meet these challenges, withdraw socially, and even experience depression (Duys & Hobson, 2004; Moote & Wodarski, 1997; UsznyskaJaromoc, 2007; Wick, Wick, & Peterson, 1997). A positive self-concept is therefore important because it drives a person to achieve, develop positive social relationships, and enjoy satisfaction in life. However, according to some researchers, self-esteem may be vulnerable during the secondary school life (Akos & Galassi, 2004; Lohaus, Elben, Ball, & Klein-Hessling, 2004). This seems to be particularly true because adolescents

experience several transitions during this period of changes of school and changes in family and peer relations (Akos, 2002; Chen, French, & Schneider, 2006).

2.2 Relationship of Praise, Motivation, and Self-Esteem

The potential power of praise is evident in the research literature, in which programs are developed that involve a systematic and contingent use of praise over time for the purpose of reducing classroom behavior problems and encouraging students to learn. It has been demonstrated that effectively administered praise can be a successful technique for influencing students' learning motivation and performance, including increase of intrinsic motivation (Corpus & Lepper, 2007; Deci, Koestner, & Ryan, 1999; Harackiewicz, 1979), academic performance (Elawar & Corno, 1985; Hancock, 2002; Schunk, 1983), self-efficacy (Schunk, 1983), and decrease in classroom behavioral problems (Harris, Wolf, & Baer, 1967; Madsen, Becker, & Thomas, 1968; O'Leary & O'Leary, 1977). Early research has also revealed that at any grade level, students with low socio-economic status backgrounds or from minority groups tend to be especially responsive to praise and encouragement from teachers (Kennedy & Willcutt, 1964; Leith & Davis, 1969). However, a growing body of research has challenged the purely beneficial effects of praise and suggested that praise may have no observable influence dependent on the context in which it is distributed and the message communicated (Brophy, 1981; Deci et al., 1999; Henderlong & Lepper, 2002).

The discrepancies of research findings mentioned above can be resolved by the expectancy-value model (Feather, 1982; Pekrun, 1993; Wigfield & Eccles, 2000). The model holds that the effort people are willing to invest in an activity is the product of (a) the degree to which they expect to be able to perform the activity successfully, and (b) the degree to which they value the rewards and the opportunity to engage in the process involved in carrying out the activity itself (See Table 1). In order to enhance the expectations for success, both theory and research have illustrated that attributional focus of praise statements may hold significant value in the determination of students' motivation (Stipek, 2002; Toland & Boyle, 2008). A number of research studies have investigated the effects of praise on motivation when the attributional message is directed at the person and the process (Corpus & Lepper, 2007; Kamins & Dweck, 1999; Mueller & Dweck, 1998). Person praise aims at evaluating a person's traits or the person as a whole; in person praise, the good performance is attributed to something that the student cannot control. Process praise focuses on recipients' efforts or strategies; in process praise, the good performance is attributed to something that the student can control.

Table 1. Students' Strategies in Response to Classroom Activities as Related to Expectancy and Value Perceptions (Hansen, 1989)

	Has low success expectations	Has high success expectations
Does not value the task/activity	<i>Rejection:</i> Refuses to participate	<i>Evading:</i> Does the minimum
Values the task/activity	<i>Dissembling:</i> Protects image of competence	<i>Engagement:</i> Seeks to learn

Experimental evidence shows that praising a child for ability or intelligence may lead the child to attribute the success to internal, stable, and uncontrollable causes. Whereas individuals who attribute their success to internal abilities and traits have been found to maintain their self-efficacy (Schunk, 1996) and motivation (Weiner, 1985), individuals who attribute their failures to abilities will develop helpless coping strategies and a sense of self-worth contingent on external measures of success (Haimovitz & Corpus, 2011). Furthermore, it can also be seen that person praise contributes to a self-perpetuating downward spiral of self-derogation among low-esteem children (Brummelman et al., 2014). However, when an individual is praised for hard work, he or she will be more inclined to interpret success as a result of controllable effort and will continue to try hard when challenges and setbacks arise (Kamins & Dweck, 1999; Mueller & Dweck, 1998). Hence, effectively presented praise is an important component for any intervention designed to promote learning motivation and self-esteem.

2.3 Theoretical Framework of Current Research

From a social cognitive perspective, learning is described as the process of converting information from the environment into mental representations that guide behavior (Bandura, 1986, 1999). Ormond (2008) argues that its success as a model of learning is attributed to its basis in behaviorism and its potential for incorporating new developments in cognitive modelling. Focusing on important theoretical issues such as the role of reward in learning and stability of behavior, the theory offers a reasonable view of human behavior and social implications. The basic assumptions of the theory are listed as follows:

1. Students can learn by observing the behavior of others, for instance, their teachers and classmates.
2. Learning is defined as a cognitive process and may or may not involve changes in observable behavior. Whether a certain behavior can be observed depends largely on the presence of an appropriate environment. This underscores the importance of creating a desirable learning environment.
3. All student behavior is directed towards a goal, which is not necessarily the same for every student and depends on both the demands of the environment and individual needs.
4. Students' behavior eventually becomes self-regulated because of the consequences of the behavior.
5. Reinforcement and punishment play an indirect role in influencing student behavior, but they are important in helping to shape student expectations of the consequences of their behavior based on what they see happening to students, the environment and personal preferences.

Bandura's concept of reciprocal determinism describes the social cognitive perspective by explaining the relationship between student personal factors, social environment, and student behavior. The student personal factors include such concepts as motivation and self-esteem; the student environment includes positive and negative reinforcements; and student behavior refers to time and effort spent on tasks, attention in learning processes, and performance on achievement tests. With reference to the framework, praise is considered as an intervention in the classroom

environment, which results in a chain of changes in students, their behavior, and the environment itself (See Figure 1).

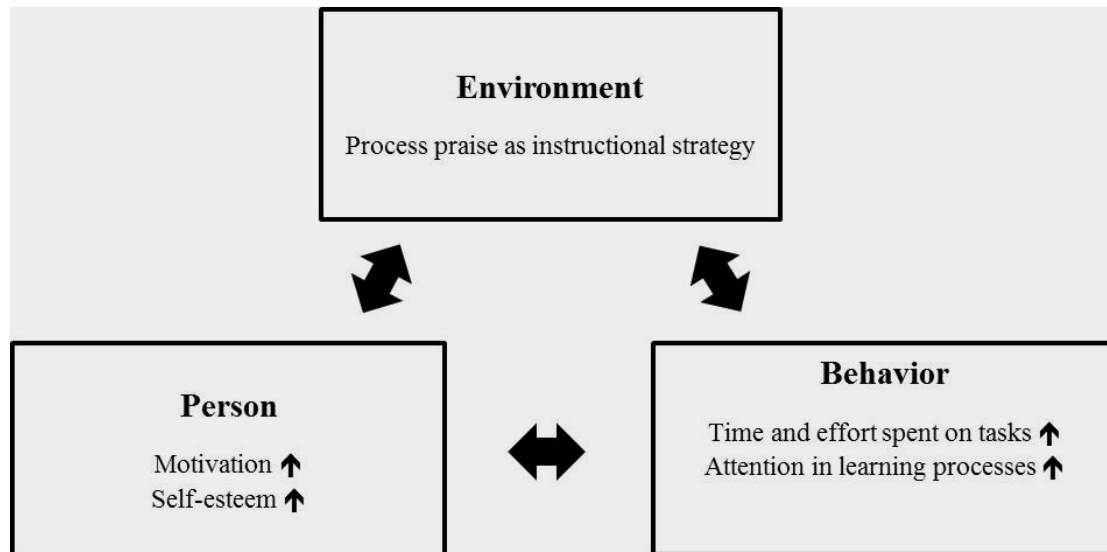


Figure 1. Theoretical Framework

Given the small number of studies, however, it remains unclear how praise in actual classrooms lead to changes cognitive processes in the person praised, and in their corresponding behavior, suggesting the need for more research. In an effort to shed light on the interdependence of these three components, a program which incorporates the intervention of praise statements in the classroom setting is studied in the current research. The key characteristics of praise include being contingent on desirable behavior, behavior specific, and focused on effort and process. The dynamics among student personal factors, behavior, and environment are then thoroughly investigated. The two research questions of the present study are as follows:

1. Were there any changes of learning motivation and self-esteem in students after implementation of praise strategies? If yes, what were the changes?
2. How did the implementation of praise strategies bring about the changes of learning motivation and self-esteem in students?

3. Research Methodology

The research study was undertaken at two government aided co-educational secondary schools in Sha Tin district. The majority of the in-take students were in the lowest third upon admission to school in terms of their academic achievements. Moreover, more than 30% of the students in each school came from low socio-economic family backgrounds and sought financial subsidies from the government. Both schools have participated in an English mentoring program provided by a local non-governmental organization since the school year of 2014/15. The program focuses on the enhancement of learning motivation and self-esteem of low-achieving students, using mentoring in English as the point of intervention. A total of four recent university graduates have been appointed as school-based mentors to conduct English

mentoring in small group context during the regular English speaking lesson on a weekly basis. The class size ranged from seven to twelve students and each weekly lesson lasted between 35 to 45 minutes.

The study was conducted from September to December 2015. It included the participants of all four mentors and a sample of 32 mentees (21 males and 11 females) from both junior and senior secondary in the aforementioned two schools. All of these 32 students in the four mentoring groups took part in the survey study. Using the typical case sampling method, one student in each group, who had an average motivation and performance in learning, was selected by the mentor and invited to be interviewed. All four mentors were also separately interviewed in the focus group study for cross-referencing with the results from students. Finally, class observations were arranged with each group to study the intervention impact. Permission to conduct this study was received from the two school principals and four mentors; the students and parents were informed with information sheets and asked to give permission with consent forms.

Interventions

Prior to the commencement of English mentoring sessions, mentors were offered a training session on the administration of effective praise strategies which could potentially enhance students' learning motivation and self-esteem. Mentors were also instructed to complete journal entries immediately after each mentoring session to reflect upon the administration of praise in an attempt to assist in their continuous self-improvement (See Appendix A). Reflection items included the praise statements administered, characteristics of the praise statements, and behavioral changes of target students.

Instruments

Two sets of questionnaires on learning motivation and self-esteem, namely Motivated Strategies for Learning Questionnaire (MSLQ) (adapted) (Pintrich & DeGroot, 1990) and Rosenberg Self-Esteem Scale (RSES) (Rosenberg, 1965), were administered before and after the program intervention. The former survey takes into account the value and expectancy components of motivation in classroom learning while the latter measures the global self-esteem.

Semi-structured interviews and focus groups were also conducted to gauge the views of mentees and mentors respectively. The duration of the former ranged from 15 to 25 minutes and the latter from 25 to 35 minutes. To enhance the representation of all the small groups, a mentee of each mentoring group was invited to be interviewed on the experience of the mentoring class (See Table 4). Both interviews began with questions on demographics and proceeded with questions and responses regarding experience on receiving and administering praise; prompts were used to probe for further information whenever appropriate.

Furthermore, two class observations were conducted with each of the four mentors to obtain first-hand information on the administration of praise statements in classroom environments and examine the corresponding responses from students. In addition to

the field notes taken during each of the 45-minute sessions observed, the video-taped lessons were reviewed subsequently to take note of student behavior indicative of learning motivation and self-esteem in the hope of producing a comprehensive evaluation of mentees' learning performances.

Table 4. Profile of Student Interviewees

Students Selected for Interview	Mentee A	Mentee B	Mentee C	Mentee D*
Gender	F	M	M	F
School	School 1	School 1	School 2	School 2
Form	S.2	S.5	S.2	S.5
Mentor Comments	Passive learner with low confidence in English learning, especially public speaking.	Active in extra-curricular activities, but not interested in learning English and other academic pursuits.	Poor relationship with peers and teachers maintained, destructive learning behavior demonstrated to draw attention.	Socially withdrawn and disengaged from classroom learning.

*The student was withdrawn from the mentoring class in the midst of school term. No interview was conducted by the end of school term consequently.

4. Research Analysis and Findings

Part A – Were there any changes of learning motivation and self-esteem in students after implementation of praise strategies? If yes, what were the changes?

The questionnaire data collected during the pre- and post-tests were then inputted into and analyzed by the software Statistical Package for Social Sciences (SPSS). Below are the descriptive and inferential statistics.

Student Questionnaire – Descriptive Statistics

In the pre-test, 32 students completed the questionnaires of MSLQ (M = 42.59, SD = 14.45) and RSES (M = 29.24, SD = 5.07) respectively. In the post-test, 29 students returned the questionnaires of MSLQ (M = 47.80, SD = 13.81) and RSES (M = 28.62, SD = 5.56) respectively.

Student Questionnaire – Inferential Statistics

Cronbach's alphas were computed for each questionnaire set prior to conducting t-test to ensure reliability. The values were greater than 0.9 for measurement of learning motivation and greater than 0.8 for measurement of global self-esteem, both of which indicated a good internal consistency estimate of reliability of test scores.

The results of paired t-test revealed that the mean score of learning motivation in the post-test (M = 47.80, SD = 13.81) tends to differ statistically significantly ($t = 1.518$, $df = 28$, two-tailed $p = 0.140$) from that of pre-test (M = 42.59, SD = 14.45). However, the mean score of global self-esteem in the post-test (M = 28.62, SD = 5.56) did not differ statistically significantly ($t = -0.533$, $df = 28$, two-tailed $p = 0.599$) from that of pre-test (M = 29.24, SD = 5.07).

Student Interview, Mentor Focus Group Interview, Mentor Reflection Log, and Class Observation

Consistent with the quantitative findings, the analysis of student interviews revealed that the magnitude of changes in learning motivation had been more significant than in self-esteem (See Table 6). The results indicated that Mentee B, who had a medium level of learning motivation and academic self-esteem at the beginning of the school term tended to show improvements in both aspects after the program intervention. According to the student, he usually performed poorly in English learning because he had a lack of initiative to study for the subject. He would expend some effort in task completion only when his teacher offered direct and clear instructions. Although Mentee B was a sports team member and performed quite well in the team, he attempted to compare his strength in sports to high academic achievers and downplayed the importance of his potential. However, in the second interview, he appeared to be more confident and motivated to learn English. He became more aware of the appreciation of his mentor when he engaged in positive learning behavior. He could also articulate what he did well in class with a high level of confidence, for instance, asking questions when in doubt and helping peers with task. All these indicated that he had been a committed and confident learner in the mentoring group.

Mentee A displayed a high level of motivation to learn and high academic self-esteem in the pre- and post-interviews. She was very comfortable in sharing examples of her successful learning experience and seemed to be interested and engaged in learning. Having a high self-regard, she was able to participate in class activities actively, display initiative in learning, and accept praise from the mentor without any embarrassment. It could be concluded that Mentee A had maintained her motivation to learn and positive self-concept after her participation in the program.

Among all the interviewees, Mentee C appeared to be the one who lacked confidence and motivation to learn the most. He encountered a number of social problems at school, such as poor teacher-student and peer relationships, which posed a threat to his motivational and socio-emotional developments. In the second interview following the intervention by his mentor, he was able to recall a few rare experiences of being praised and recognized for his positive learning behavior, such as being attentive and helping peers to answer questions. Nonetheless, his self-esteem maintained relatively low because he often disregarded the compliments even though he was aware of his improvements.

Table 6. Case Studies of Individual Mentees

	Baseline Assessment	Year-end Assessment
Mentee A Self-esteem	<i>High – Pride in academic accomplishment</i> “I got a high score on a worksheet... Most students could not do it but I completed it very fast.”	<i>High - A sense of competence</i> “I feel happy about the mentoring session... I have learnt a lot about English, such as drawing mind-maps and usage of vocabulary...”
Mentee A Learning motivation	<i>High - Enjoyment in class activities</i> “Our lessons are not boring and we are very happy. Sometimes we go like crazy in class and cannot stop laughing... The same happens to teachers.”	<i>High - Initiative to learn and engagement in class activities</i> “When I asked her (the mentor) how to use some vocabulary words, she also complimented my effort. I was then busy correcting my (writing) work...”
Mentee B Self-esteem	<i>Medium - Negative self-image and peer comparison</i> “Maybe I am good at sports... Strength is all about comparison; your (my) strength is nothing to the student who ranks first in academic studies.”	<i>High - A sense of belonging and contribution in class</i> “Once I voluntarily helped my peers to answer questions when they fell asleep, he (the mentor) also showed his appreciation of my behavior.”
Mentee B Learning motivation	<i>Medium - Lack of initiative and effort in learning</i> “I have studied in this school for five years and I think the students are relatively lazy, including me... We are very naughty in English lessons and we do nothing in class...but we follow the teacher’s instructions in doing projects.”	<i>High – Initiative to learn both in and out of class</i> “He (the mentor) often appreciated us for asking questions... Last time, he praised me for asking additional questions after class because it was about learning... We were also rewarded for making attempts to read and explain words.”
Mentee C Self-esteem	<i>Low - Lack of self-regard</i> “Wisdom is always with me... But just forget it. People usually think I am stupid.”	<i>Low - Reluctance to accept sincere praise</i> “A few weeks ago, I was praised for being attentive in lesson... It was true but I didn’t have much response and I quickly returned to the classroom.”
Mentee C Learning motivation	<i>Low - Disengagement in learning due to poor teacher-student relationship</i> “Teachers are quite mean sometimes and I am often teased... That is, when I said something wrong (and stopped answering), they would say I used to be proactive in answering questions...”	<i>Low-Medium - Improvement in perception towards teachers</i> “All teachers want to teach students well... I would give myself 50 marks on the performance... I was attentive 50% of the time and wasn’t at the remaining time.”

Notes: Description of data elements. There are two outcomes of behavior: LM=learning motivation; SE=self-esteem (academic). Motivation is defined as the processes that include the initiation, direction, intensity, persistence, and quality of goal-directed behavior, while self-esteem is defined as the evaluation of self-concept and value that students place on their own abilities and behavior. Each component has three levels, non-numerically represented as low (L), middle (M), and high (H), with reference to the case-ordered descriptive meta-matrix proposed by Miles and Huberman (1994).

Part B – How did the implementation of praise strategies bring about the changes of learning motivation and self-esteem in students?

Prior to establishing the relationship between praise strategies, learning motivation, and self-esteem, it is essential to examine the intervention – the actual administration

of praise strategies – in the classroom context. A review of the field notes taken during class observations and mentor reflection logs confirmed that the majority of praise statements could be classified as effective because they embodied the characteristics of being specific, effort-focused, without social comparison, contingent upon positive learning behavior, and mentor-initiated (Brophy, 1981). It was also observed that the praise statements administered were found to be primarily focused on the following aspects of positive behavior: perseverance (“*I notice you are on task and have the courage to try. Well-done!*”), improvement (“*Good try! You tried to speak up just now!*”), engagement (“*Good try! Thank you for your effort and contribution. I appreciate that you answered today!*”), and strategy (“*Excellent! You have elaborated your ideas in English. You’ve done a great job!*”). All of these can be categorized into a larger theme of “process-oriented” as opposed to “person-oriented.” Furthermore, no overuse of praise statements was noted; on average, mentors attempted to administer one to two praise statements to each of the participating students within a mentoring session.

To account for the changes of learning motivation and self-esteem, two important contextual variables, namely the perceived relationship between mentors and mentees and social climate in classroom, emerged from the qualitative data. Upon a detailed analysis of the student interviews, it was found that the mentorship was characterized by trust, care, and mutual respect. According to the mentee interviews, mentors were most often described as reliable people whom mentees could turn to when they had academic or even personal problems. For example, Mentee B mentioned,

“He (the mentor) does not only teach but he also helps us solve real life problems... (I have also learnt from him that) the relationship between teachers and students can be very close, unlike the traditional Chinese culture that emphasizes the hierarchy of power and that students must admire and show utmost respect to teachers. It is clearly not the case in this (mentoring) class... I asked him a question irrelevant to English learning once (through social media). He was aware that it was very late in the night and cared about me...”

It was also discovered that mentors had spent a considerable amount of time to engage and build rapport with mentees outside of regular lessons in order to nurture a caring relationship. For instance, Mentee A recalled the experience when she and her mentor first encountered in the school canteen and had a delightful conversation, while Mentee C described the relationship with the mentor as excellent and cited a recent experience in which he taught the mentor how to play the piano out of class as supporting evidence. The findings from mentees also echoed with those from the mentors. When asked about their roles, mentors unanimously agreed that they are close friends and role models who facilitate the learning and development of students. In the hope of fostering the change processes, they employed a variety of strategies, which included taking an initiative in building and sustaining rapport and providing customized learning support. It was evident that the solid relationships between mentors and mentees added credibility to the demonstration of sincerity implied in the

praise statements, which was stated as the single most important factor in their acknowledgment by interviewed mentees.

In addition to the trustful relationship between mentors and mentees, mentees who sustained a medium to high level of motivation and self-esteem also commented that the learning atmosphere was in general supportive and interactive. Both Mentees A and B pointed out that the small-group learning environment had enabled mentors to understand and cater to individual learning and developmental needs. For example, their mentors were reported to have adapted the pace and content of teaching to ensure mentees learn most effectively. Mentees also agreed that they were provided with ample opportunities to converse and socialize with classmates in a more casual and relaxing manner when compared to the traditional English classroom with school teachers. The subjective learning experience of students was also in alignment with the empirical evidence collected during class observations in which such elements as guidance from mentors, peer support, and equal opportunities to participate were identified. On the other hand, although Mentee C articulated a nurturing relationship with the mentor, who spent out-of-the-class time to interact with him, he tended to hold a negative view of the classroom ambience. He described his peers as generally lazy and reluctant to learn even with the dynamic learning activities in class. Lacking a sense of belonging, he also considered it as natural for his classmates to be distracted from listening to teachers and to keep talking on less important personal things. There is a high likelihood that the dearth of a perceived supportive learning community had affected his motivation to stay engaged in the mentoring class and thus not much improvement in academic self-concept was manifested in the closing interview when compared to the preliminary one.

To further investigate into the change processes, it was found that under the supportive mentorship in a nurturing learning environment, the administration of process praise brought forth a pattern of similar changes in Mentees A and B and their behavior. Perceiving it as sincere and non-controlling, the mentees regarded praise from mentors as a recognition of their abilities to complete learning tasks. During the interviews, they described that the mentors had had clear expectations of the class, and whenever their peers had demonstrated the positive learning behavior, the mentors would make equal effort to recognize it through genuine praise. In addition, both mentees exhibited the openness to accept the praise and treat it as valuable feedback to strengthen learning performance. The enhancement in self-efficacy appeared to determine their choices of subsequent learning tasks and lead to an overall improvement of the demonstrated learning performance. For example, Mentee B had clearly demonstrated an adaptive motivational pattern in the post-interview; when asked about the most significant changes in the attitude towards learning after the first school term, he reflected on the value of exerting effort to improve learning outcomes in his response:

“... When I practice after thoroughly understanding the topic, the result is usually not that bad. Therefore, I have learnt a great lesson that listening and understanding is very important to my motivation to learn because only then will I start doing.”

Similar observations were noted by their mentors, who suggested that the learning behavior of mentees had shown marked improvements, including a higher frequency to ask and answer questions and an increase in effort in task completion. It was very likely that their successful experience to manage classroom tasks along with the attributional messages embedded in praise statements by the mentors had increased their perceived expectations for future performance. However, for Mentee C, who differed in the perception of social climate in the classroom when compared to Mentees A and B, the impact of praise on motivation and self-esteem seemed to be limited and the no change on subsequent behavior could be observed.

5. Discussion and Conclusio

General Discussion

The current study revealed two main findings with reference to the two research questions. First, the results derived from both quantitative and qualitative data indicated that in general, mentees who completed the mentoring program in the first school term experienced an increase in learning motivation. While there was no significant change in the global self-esteem as measured in the student survey, the academic aspect of self-esteem appeared to show improvements in accordance with the interviews with mentors and mentees. It was not a surprising finding because the implementation of praise strategies focused on student learning, which is only one of the many dimensions of self-esteem. Second, it was found that the causal relationship of adaptive motivational processes and attributional messages implied in the praise statements is not unidirectional but should be comprehended in a larger context, which involves the mentor-mentee relationship and learning ambience. Figure 2 illustrates the conceptual framework on the application of social cognitive model to explain the effects of praise on motivation and self-esteem and the detailed change processes.

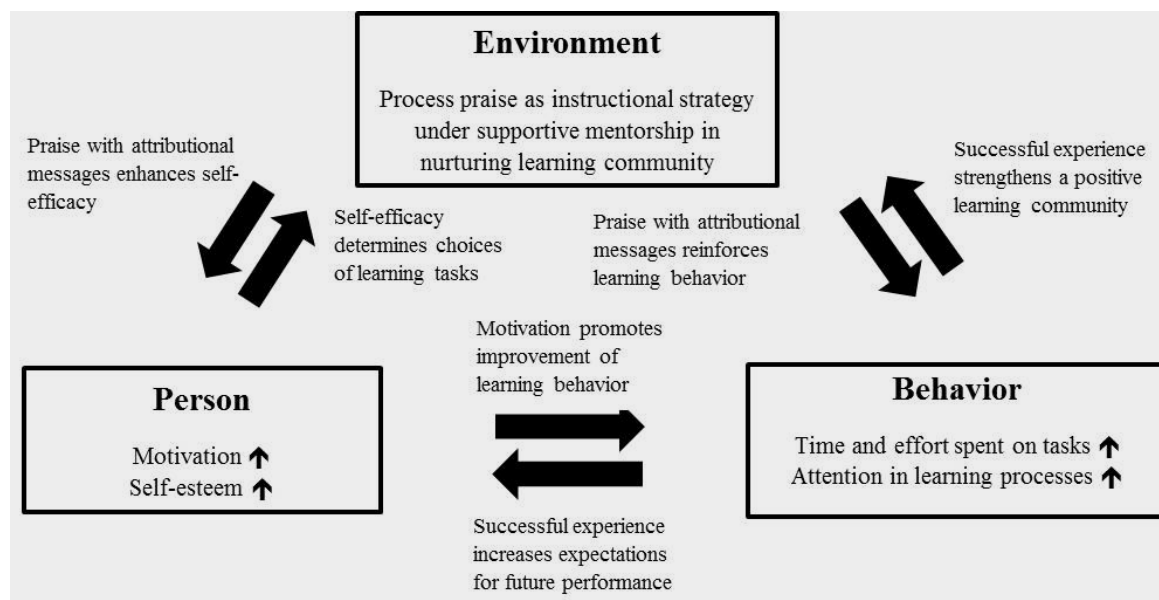


Figure 2. Conceptual Framework: Relationship between Praise, Motivation, and Self-Esteem

Research Implications

This study is an attempt to utilize a more sophisticated research methodology to gain insights into the impact of praise in the classroom environment by understanding the perspectives of mentors, mentees, and researcher. The findings that research-informed praise strategies have positive psychological effects on the learning attitudes and motivation of low-achieving students in a classroom setting have important theoretical and practical implications. The qualitative data collected in this research study has disentangled the underlying adaptive processes by providing insights into the perceptions of students towards themselves, their behavior, and the environment, which cannot be gauged from the majority of research literature on praise. Moreover, prevention and intervention programs and other educational programs have been commonly found to utilize praise as an instructional strategy to enhance motivation and self-esteem of different target participants (Hattie & Timperley, 2007; O'Mara, Marsh, Craven, & Debus, 2006). In addition to the preference of process praise over person praise in initiating changes in learning behavior, the current study has preliminarily identified building of trustful teacher-student relationships and development of collaborative classroom environments as fundamentals for transforming low-achieving students into more motivated and confident learners through praise because these two contextual elements are found to be crucial to their psychological adjustment in learning (Rohner, 2004). The study also extends the practical implications that teachers and curriculum developers who have the intent to motivate students to learn should focus not only on content design but also on the delivery process and instructional strategy. In particular, recognition should be provided for all students who make noteworthy progress, not just to the highest achievers. Students should be praised for a broader range of achievements, such as demonstration of perseverance and engagement, and not just for high scores on standardized tests and examinations; recognition should be based on levels of progress made toward individually established goals as a result of effort. In response to the call for research to examine praise in teacher-student interactions (Brummelman et al., 2014), the present study has provided initial answers to the role of praise in motivation and self-esteem in naturalistic settings and enriched the understanding of their complex interdependent relationships.

Conclusion

The research results support the theoretical assumptions concerning praise, motivation, and self-esteem outlined in the introductory material (Ormond, 2008). The effects of praise on motivation and self-esteem and the underlying rationale have been found to be complex and should be examined without overlooking the importance of context. In spite of the aforementioned limitations, the present research indicates that praise is likely to have positive motivational consequences when attributional messages when perceived competence and self-efficacy are heightened without social comparison and when realistic standards and expectations are properly conveyed. It can provide encouragement and support when made contingent on effort and can be informative and reinforcing when it directs students' attention to genuine progress or accomplishment. However, it is worth noting that the perceived relationship with

teachers and social climate in the classroom should be both positive such that the impact of praise on learning motivation and academic self-esteem of low-achieving students can be achieved.

Acknowledgements

The research project could only be completed with the help and support from people I have met all along the journey. First, I would like to thank my supervisor Dr. Ellen Zhang for always providing me with another perspective to look at the problems facing me whenever I was puzzled and confused in the research processes. This offered me a memorable learning experience on how to mentally prepare myself to engage in rigorous academic research. Second, I would like to show my greatest appreciation to all of the research participants. The research would not have been possible without their active participation and involvement. Finally, I would also like to thank Dr. Amelia Tse and Mr. Kerry Jones for their advice on polishing my academic writing. As a novice in the research discipline, I have realized the value of learning by doing and learning from mistakes.

Appendix B: Interview Protocols

Interview Protocol – Student Interview (Baseline Assessment)

I. General Background Information

1. Research background
2. Student background

II. The Role of Praise in Learning Experiences

3. Describe your school life.
4. Do you have strengths?
 a. What are they?
 b. Describe a situation you exhibit the strengths.
 c. How have your strengths been formed?
 d. Are your strengths recognized by others, such as teachers and peers? How do you feel?
 e. Is there any other thing you think should be recognized?
5. When was the last time you were recognized or praised by teachers?
 a. What was the context?
 b. What did you do?
 c. How would you describe your performance?
 d. How did the teacher respond?
 e. What did you feel and respond in turn?
 f. How much do you like or dislike being recognized or praised?
 g. Do you think you deserved that praise?
6. How often are you recognized or praised by teachers?
 a. What do you think about the frequency?
 b. Is there any difference in frequency at various stages of schooling, e.g. kindergarten, primary school and secondary school? Why?
 c. What kinds of behavior should be recognized and praised?

Appendix B: Interview Protocols

Interview Protocol – Student Interview (Year-end Assessment)

I. General Background Information

1. Research background
2. Student background

II. The Role of Praise in Learning Experiences

3. How do you feel about your school learning now?
4. Describe your school life from the perspectives of (1) academics and (2) ECA.
5. How would you describe your performance in the above activities?
6. What do you usually do in the mentoring sessions?
7. How do you usually interact with peers in the mentoring sessions?
8. How do you usually interact with mentor in and out of the mentoring sessions?
9. What are the similarities and differences between regular English teaching and mentoring sessions?
10. When was the last time you were recognized or praised by mentor?
 - a. What was the context?
 - b. What did you do?
 - c. How would you describe your performance?
 - d. How did the teacher respond?
 - e. What did you feel and respond in turn?
 - f. Do you like being recognized or praised?
 - g. Do you think you deserved that praise? What do you learn from the mentoring sessions? What do you like most and least in the mentoring sessions? Why?
11. On a scale of 0-100, how would you rate your performance in the mentoring sessions?
12. How do you feel after participating for a school term?
13. Would you recommend the program to your friends? Why or why not?

Appendix B: Interview Protocols

Interview Protocol – Mentor Focus Group (Baseline Assessment)

Interview Protocol

Before Recording

- Remind PMs to read aloud their names and schools assigned

Opening

- Mention date, time, venue and people of the interview to be conducted
- Discuss purpose of the interview, i.e. understand more about how program mentors conduct small group sessions

Interview Questions

1. What is your role as a mentor in small group sessions?
2. What is your approach to inspire and motivate students?
3. What kinds of strategies have you adopted?
4. Do you offer praise or recognition to students? Why?
5. Under what circumstances do you praise or recognize your students?
6. How often do you do so?
7. What do you usually focus on praise or recognition?
8. What do you intend to achieve?
9. Do you consider them as effective? How can you tell? (Give examples)
10. If you could do it again, how would you behave differently?

Ending

- Mention ending time and show appreciation to participants

Appendix B: Interview Protocols

Interview Protocol – Mentor Focus Group (Year-end Assessment)

Interview Protocol

Before Recording

- Remind PMs to read aloud their names and schools assigned

Opening

- Mention date, time, venue and people of the interview to be conducted
- Discuss purpose of the interview, i.e. understand how program mentors incorporate verbal praise strategies into mentoring sessions to facilitate student learning and the impact of their use in the practical setting

Interview Questions

1. Describe the group dynamics and mentoring plan of targeted class.
2. What have you been doing to achieve the intended outcomes?
3. Describe the use of praise strategies. What are the actual outcomes?
4. Describe the use of mentor reflection log. What are the actual outcomes?
5. How effective or ineffective are they in initiating behavioral changes?
6. What are the success or failure factors of the system?
7. If you could do it again, how would you have done it?
8. How likely or unlikely would it continue to be implemented in targeted class and other classes? Why?
9. Other relevant issues.

Ending

- Mention ending time and show appreciation to participants

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The Academic Culture Shock Experiences of Turkish International Students in Japan: A Qualitative Study

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The Asian Conference on Education, 2018
Official Conference Proceedings

Abstract

The present research focuses on academic culture shock (ACS) experienced by Turkish students due to the differences between academic cultures. ACS is a novel concept which can be described as “the shock when faced the cultural differences in academic life”. It can be used to identify problems and challenges that international students experience during their academic transition to a new academic culture. This research explores ACS experiences of 21 Turkish students (12 females and nine males, ages from 25 to 37) in the context of Japanese universities. The aim is to understand the ACS of Turkish students, suggest solutions to the problems and help them to overcome the challenges for successful academic adjustment. The research draws on data from semi-structured, in-depth interviews with Turkish students to identify the stressors, challenges and problems related to ACS. Each interview transcript was individually examined via qualitative analysis, aiming to develop or identify possible categories based on Grounded Theory Approach. According to the results, there emerged some categories related to ACS. Supervision style, language skills, laboratory/seminar system, differences between Japanese and Turkish academic systems, stressors, coping strategies for stress, and academic-social skills are main categories. The results showed that challenges that Turkish students encountered resulted in ACS which might lead to difficulties in academic adjustment. It is suggested the problems and challenges that the students experienced are associated with their educational and cultural background. Cross-cultural differences in educational background which resulted in problems in academic adjustment are considered of reasons that can explain ACS.

Keywords: Academic culture shock, academic adjustment, grounded theory approach, Turkish international students in Japan, autonomous learning

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Introduction

Universities in Japan host a substantial number of international students including Turkish students. The number of international students as May 1, 2017 was reported as 267.042 by Japan Student Services Organization (JASSO). The number of Turkish students in Japan estimated by The Embassy of The Republic of Turkey in Tokyo (2017) and by UNESCO (2018) is 160 and 152 respectively. Although there is a substantial body of research that focuses on international students from Asian and Western countries in Japan (Guo, Yiwei, & Ito, 2014; Maruyama, 1998; Simic-Yamashita & Tanaka, 2010), there are a limited number of studies (e.g. Boiger, Güngör, Karasawa, & Mesquita, 2014; Güngör, Karasawa, & Boiger, 2014) available that compares Turkish and Japanese cultures. However, these studies make cross-cultural comparisons using samples directly from Turkey and Japan. Also, they focus on topics such as interpersonal relations, interdependence, relatedness, certain emotions and autonomy. In addition to this, there is no other available research which investigates academic adjustment of Turkish people studying in Japan. In other words, the research on Turkish and Japanese cultures in a cross-cultural academic context is very limited. Therefore, the present research focuses on academic culture shock (ACS) and academic adjustment.

Culture Shock and Academic Culture Shock

International students must encounter new social and educational organizations, behaviors, and expectations. Also, they must cope with the adjustment problems common to students in general. This process is challenging even when international students are conscious about the cultural differences. However, it is more challenging when they are not conscious and falsely expect that the new culture operates like their home country. Unfamiliar experiences have a collective impact on cultural travelers which is defined as culture shock (Zhou, Jindal-Snape, Topping, & Todman, 2008). International students may have to struggle with potential challenges by moving to a foreign country to study. Therefore, it may result in experiencing cross-cultural stress and adjustment problems (Smith & Khawaja, 2011), which may result in experiencing shock when faced the cultural differences in academic life (e.g. teaching style, communication with teachers) especially when there is a mismatch between cultural facts and expectations. It can be termed “academic culture shock”.

Academic Adjustment

Adjustment refers to the responses to a new environment such as new work procedure, a new language or a monetary system or a new academic life. Adjustment is a dynamic process which involves a motive, goal-directed movement and an obstacle or thwarting. International students face with the challenges of and are expected to meet the demands of a novel academic setting. The adjustment to the demands of a novel academic setting including teaching and learning style is defined as academic adjustment. It is a challenging intellectual revolution that takes time. Also, it is difficult for international students to understand the changes that they go through (Ballard, 1987).

It is crucial to understand the adjustment problems of these students in order to frame their unique challenges in unique academic settings and a new society, and in order to

offer guidance for a better adjustment both to academic settings and society. Therefore, the main purpose of the current study was to investigate the academic culture shock which is thought to be related to academic adjustment problems of Turkish international students studying in Japan. In addition, this study should also provide upcoming students with an overall understanding of what to expect when they choose to study at a university in Japan, and it should provide universities with some implications of how to devise better support and facilities to aid international students with their transition stages.

Research Questions

The research questions that are examined in the current study are as follows:

- 1) What are the academic problems Turkish international students experience in Japan?
- 2) What are the similarities and differences do Turkish international students encounter between the Turkish and the Japanese academic system?
- 3) What kind of strategies do Turkish international students use to cope with the problems and difficulties that they face with in academic life in Japan?
- 4) What kind of social skills do Turkish international students learn in the context of Japanese universities?

Method

Participants

A total of 21 students (12 females and nine males) from Turkey who were in higher education or graduated from a university in Japan (one bachelor's degree, two master's students, one master's degree, 11 PhD students, four PhD degrees and two postdoc degrees). Twenty of the students received their bachelor's degree from various universities in Turkey. Only one student received her bachelor's degree from a university in France. Additionally, all students except one student received or were studying to receive a postgraduate degree in Japan. One student was on one-year exchange program in Japan and did not continue into graduate education. Of the total sample 13 of the students were from natural sciences or engineering (five females and eight males), and the rest were from humanities or social sciences (seven females and one male). Students ranged in age from 25 to 37 years with a mean age of 29.09 years ($SD = 3.30$). The average length of stay in Japan was 52.14 months ($SD = 32.89$) at the time of interview completion (range = 12-151 months). The students were asked to report their Japanese language levels. Japanese language levels are distributed as follows: Eight advanced (38 %), eight intermediate (38 %) and five beginners (24 %). (see Table 1)

Measures

A three-page long demographic questionnaire and a two-page long interview question sheets were employed in this study. Questions on demographics covered information about the age, gender, major, hometown, education level, length of stay in Japan and Japanese language proficiency level. The interview was designed to assess academic culture shock, academic problems, academic stress and coping strategies, academic

social skills, communication and relationship with supervisor and laboratory mates, academic expectations and so on.

The research draws on data from semi-structured, in-depth interviews with Turkish students to identify the stressors, challenges and problems related to ACS. Each interview transcript was individually examined via qualitative analysis, aiming to develop or identify possible categories based on Grounded Theory Approach (Glaser & Strauss, 1967). As a result, interviews were employed with the Turkish students to identify the stressors related to academic issues that the Turkish students encounter and coping strategies that they use. It also explores the social skills that Turkish students use while studying in Japan.

Procedures

The interviews were conducted in Turkish in 2017-2018. The participants were interviewed individually after they filled out the questionnaire. Participation was anonymous and voluntary. In order to maintain anonymity, the interviewees' real names were not used. Of 21 interviews, 17 (81 %) were conducted on Skype and four (19 %) were face-to-face. The interviews were recorded with a voice recorder with the consent of the participants. The interviews lasted approximately one hour.

Table 1: Demographic information of Turkish students.

Gender	Age	Major	Education Level	Bachelors	Master	PhD	Length of Stay	Japanese Language Proficiency Level	
1	F	28	Humanities	PhD Student	Turkey	Japan (completed)	Japan (ongoing)	55 Months	Advanced
2	F	31	Humanities	PhD Student	Turkey	Japan (completed)	Japan (ongoing)	108 Months	Advanced (N1)
3	M	26	Engineering	PhD Student	Turkey	Japan (completed)	Japan (ongoing)	26 Months	Intermediate (N3)
4	F	37	Engineering	PhD Graduate	Turkey	Turkey (completed)	Japan (completed)	42 Months	Beginner
5	M	37	Engineering	Postdoc Graduate	Turkey	Turkey (completed)	Japan (completed)	151 Months	Intermediate (N2)
6	F	26	Social Sciences	Master's Student	Turkey	Japan (ongoing)	N/A	20 Months	Beginner
7	F	27	Social Sciences	PhD Student	Turkey	Japan (completed)	Japan (ongoing)	30 Months	Intermediate
8	F	26	Natural Sciences	PhD Student	France	France (completed)	Japan (ongoing)	21 Months	Beginner
9	M	30	Engineering	PhD Graduate	Turkey	Japan (completed)	Japan (completed)	94 Months	Intermediate
10	F	29	Humanities	PhD Student	Turkey	Japan (completed)	Japan (ongoing)	56 Months	Advanced (N1)
11	F	27	Humanities	PhD Student	Turkey	Japan (completed)	Turkey (ongoing)	42 Months	Advanced
12	M	29	Engineering	PhD Student	Turkey	Turkey (completed)	Japan (ongoing)	67 Months	Intermediate (N3 - Old)
13	M	26	Humanities	University Graduate	Turkey	N/A	N/A	12 Months	Advanced (N1)
14	F	25	Humanities	Master's Student	Turkey	Japan (ongoing)	N/A	28 Months	Advanced (N1)
15	M	30	Engineering	PhD Graduate	Turkey	Japan (completed)	Japan (completed)	66 Months	Intermediate
16	F	30	Engineering	Master's Graduate	Turkey	Japan (completed)	N/A	36 Months	Advanced (N2)
17	M	27	Natural Sciences	PhD Student	Turkey	Japan (completed)	Japan (ongoing)	60 Months	Intermediate (N3)
18	M	33	Engineering	Postdoc Graduate	Turkey	Turkey (completed)	Japan (completed)	36 Months	Beginner
19	F	29	Engineering	PhD Student	Turkey	Japan (completed)	Japan (ongoing)	51 Months	Intermediate
20	M	28	Natural Sciences	PhD Graduate	Turkey	Japan (completed)	Japan (completed)	60 Months	Advanced (N2)
21	F	30	Natural Sciences	PhD Student	Turkey	Turkey (completed)	Japan (ongoing)	34 Months	Beginner (N4)

Data Analysis

After all of 21 interviews were completed, the researcher compiled each audio-taped interview transcript to ensure that the data was full and accurate. Additionally, all transcriptions were read several times to eliminate typographical errors and to remove any possible contradictions. As soon as all 21 interview transcripts were read several times, the researcher began to examine each transcript individually, with the aim being to develop or identify possible categories based on Grounded Theory Approach (Glaser and Strauss, 1967). In this type of qualitative analysis, categories that emerge in the interviews are identified. In other words, each transcript is coded, distinguishing important categories and each category is reconsidered as the coding progresses. The researcher creates hierarchical organization of the categories where appropriate. This approach is described as iterative, because it is repeated to allow categories and organization of the categories to best fit the data.

Results

The coding resulted in two hierarchical levels of categories (i.e., categories and subcategories), using 1008 comments by students in total. Three main categories emerged. Within the three main categories there were 11 categories, and within 11 categories there were 51 subcategories.

Eleven categories are named as *Supervisor, Academic Self-Reliance, Research, Education, Academic Gains, Differences between Turkish and Japanese Academic Systems, Laboratory/Seminar(Abbreviated as “Zemi” in Japanese)/Kenkyushitsu (which means laboratory or seminar room in Japanese) System, Academic Facilities and Support, Challenges and Problems in Academic Life, Coping Strategies for Stress and Academic/Social Skills*. After the analysis, these 11 categories were grouped into three main categories which are named as “*Research in Academia*” (*Supervisor, Academic Self-Reliance and Research*), “*Education in Academia*” (*Education, Academic Gains, Differences between Turkish and Japanese Academic Systems, Laboratory/Zemi/Kenkyushitsu System, Academic Facilities and Support*) and “*Social Skills in Academia*” (*Challenges and Problems in Academic Life, Coping Strategies for Stress and Academic/Social Skills*) (see Table 2).

Table 2: Categories that emerged based on Grounded Theory Approach.

Research in Academia			Education in Academia				Social Skills in Academia			
Supervisor	Academic self-reliance	Academic facilities and support	Laboratory/zemi/kenkyushitsu system	Challenges and problems in academic life	Education	Differences between Turkish and Japanese academic system	Research	Academic gains	Coping strategies for stress	Academic/Social skills
Supervision style	Self-motivation	Lab utilities	Laboratory/zemi environment	Language related problems	Teaching style	Information on the differences	Pace (Low vs. fast)	Research experience	Active vs. passive coping strategies	Social skills used in academic life
Feedback on academic performance	Conscientiousness Autonomous Learning	Academic sources Academic funding	Laboratory meetings/seminars Laboratory/zemi mates	Alienation Passive supervision style	Class participation Class Discussions	Research focused vs teaching focused Expectations vs reality	Change of research theme Lack of instructions/guidance on processes and using lab equipment	Academic ability Academic network		
Differences between Japanese and Turkish supervisors			Closedness Alienation	Low feedback on academic performance	Course contents and requirements	Academic facilities and support Supervision style	Publication	Presentation skills		
Relationship			Senpai-Kohai relationship	Lack of classes in PhD level	Language related problems	Lab/zemi/kenkyushitsu system	Length of PhD	Satisfaction with academic improvement		
Professionalism				Change of research theme	Courses offered	Assertion/agreeableness	Support to women in science	Satisfaction with academic life		

Research in Academia

The first main category *Research in Academia* consists of three categories which are *Supervisor*, *Academic Self-Reliance* and *Research*.

The category called *Supervisor* related to subcategories such as supervision style, feedback on academic performance, differences between Turkish and Japanese supervisors, relationship with supervisor and professionalism. This category refers to the relationship with Japanese supervisors, how interviewees form a relationship with them, how they adjust to style of Japanese supervisors, the evaluation of differences between Turkish and Japanese supervisors, the style of Japanese supervisors and feedback provided by Japanese supervisors on academic performance of Turkish students. Most of the Turkish students focused on differences in supervision styles of Turkish supervisors and Japanese supervisors saying Japanese supervisors adopt a passive style and leave most of the work such as planning and decisions about research to the students. The students addressed the differences in supervision style as surprising and stressful and a style that they should tailor themselves. An example of the comments on this category is as follows:

“Of course, professors supervise you, but it seems like they supervise you a little further from the distance. My impression is that they supervise you in a passive way. In Turkey, supervision is more active whereas in Japan supervision is more passive. You yourself need to ask “Professor, is it alright?” Your supervisor doesn’t directly explain. (...) Although my Japanese supervisor was already fine, I wish he would supervise a little more actively. He’s very knowledgeable, obviously. It was a little hard to reach the source of the knowledge if you didn’t ask for it.” (Interviewee 16)

The category *Academic Self-Reliance* which is closely related to the category *Supervision* addressed experiences on self-motivation, conscientiousness and autonomous learning. The students mentioned that they expected active supervision including help, knowledge and feedback on their academic performance from their supervisors. However, the passive style of Japanese supervisors led them to begin to plan their research, acquire knowledge reviewing the literature and reading related papers all by themselves which helped them form academic self-reliance increasing

self-motivation and conscientiousness. An example of the comments on this category is provided below:

“The difficulty in the academic sense, I think, is that we the Turkish need someone to push us. (...) While writing your thesis, you need, I think, a boosting/a thrust. Because the Japanese here try to take their own responsibilities even if you don't tell them what to do, maybe they think that telling an adult person what to do hurts his/her dignity and that thought formed some kind of a habit for them, but it doesn't work for us. This thought forms a gap. The important part is how to fill the gap. It is up to us.” (Interviewee 14)

The category called *Research* is engaged in issues associated with research pace, publication, instructions/guidance on processes and using laboratory equipment, length of PhD, support to women in science, change of research theme. This category covers all aspects about research which Turkish students addressed. The students not only mentioned about the differences in research pace (slow paced- vs. fast paced-research), but also advantages of studying in Japan such laboratory equipment provided or support by the government of Japan to women in science. However, some students addressed research related problems such as change of research theme and having difficulties adapting to the new theme due to lack of sufficient academic ability. An example of the comments on this category is provided below:

“Sometimes projects progress very slowly. For example, even if an experiment can be completed in six months, it takes, like, a year and a half to complete, the professor takes things slowly. It has both advantages and disadvantages. The advantage is that you learn very well what you study. The disadvantage is that it reduces productivity.” (Interviewee 9)

Education in Academia

The second main category is *Education in Academia* comprises of five categories which are *Education, Academic Gains, Differences between Turkish and Japanese Academic Systems, Laboratory/Zemi/Kenkyushitsu System, Academic Facilities and Support*.

Students commented on the *Education* which included aspects of teaching style, class participation, class discussions, courses offered, course contents and requirements and language related problems. Some Turkish students mentioned about the differences in teaching style of Japanese lecturers and class participation of Japanese students addressing that both Turkish lecturers and students are more active in classes leading to more active class discussions. Additionally, they commented on the low number of courses offered in English. Some students who earned their master's degree stated that course contents and requirements are easier than they expected saying that course contents and requirements are almost the same as undergraduate level which they addressed as a disadvantage. Also, some of the students in PhD commented on the lack of a sufficient number of courses which was stated as an unfavorable side. An example of the comments on this category is provided below:

“I didn't get my bachelor's degree here (in Japan), but I interacted with undergraduate students in the laboratory, because they had a research presentation once, and we had twice a year. Together with an undergraduate research I had to write an undergraduate thesis. As compared to my bachelor's thesis, their undergraduate research was much simpler. Likewise, the difficulty and the quality of the courses we received from the graduate school were very different. While the graduate courses I learned in Turkey had a high quality, the level of the graduate courses I took here is below the undergraduate courses in terms of the quality.” (Interviewee 15)

The *Academic Gains* was another category that emerged as the interviewees addressed the acquisitions and their satisfaction with those while studying and doing research in Japan; namely, research experience, academic ability, academic network, presentation skills, satisfaction with academic improvement and satisfaction with academic life. Most of the Turkish students commented on their satisfaction with academic improvement and academic life in general in Japan. They stated that opportunities and sources provided by Japanese universities are higher than Turkish universities. However, students except to Japanese language majors and students in English-medium programs addressed Japanese language as the biggest problems which prevented them to benefit more from course contents, class discussions and presentations in laboratory meetings and seminars and contribute to discussions in return. An example of the comments on this category is shown below:

“My academic performance in Japan is much better than Turkey, but it is still below my expectation. Obviously, as I was coming to Japan from Turkey, I had an academic expectation. I couldn’t meet it, but I can tell that it is better than Turkey, and my performance in Turkey. I mean, I thought I would be more productive in Japan, I mean much more productive as I left Turkey. My underperformance may be the result of academic differences.” (Interviewee 20)

The category *Differences between Turkish and Japanese Academic Systems* addressed the information on Japanese academic system before going to Japan. Also, this category covers all the differences that Turkish students addressed in the interviews with most common ones being research focused- vs. teaching focused-approach, academic facilities and support, supervision style and laboratory/zemi/kenkyushitsu system. An example of the comments on this category is provided below:

“As I observe, starting from masters in Japan, at least in field of biology, there is a research focused-approach. There are fewer courses and students are directly affiliated with a laboratory.” (Interviewee 8)

Another category was *Laboratory/Zemi/Kenkyushitsu System* that emerged as the interviewees addressed the laboratory/zemi/kenkyushitsu environment, laboratory meetings and seminars, laboratory/zemi/kenkyushitsu mates, senpai-kohai relationship, closedness and alienation. Laboratory/zemi/kenkyushitsu system which is a unique part of Japanese academic system can be described as research group of a Japanese professor. This research group consists of a professor and his/her students, and depending on department and size, it can include more than one professor, postdoc researchers, graduate students and bachelor students. The analysis of the results suggested differences in laboratory/zemi/kenkyushitsu system depending on departments. For example, most of the students from natural sciences and engineering mentioned that they are expected to go to the laboratory every day, report the results of experiments regularly whereas students from humanities and social sciences commented that this type of requirements are almost non-existent. Additionally, students from natural sciences and engineering reported that relationship in their laboratories being more connected while students from humanities and social sciences stated loosely connected relationships between members. Another aspect of this system is the vertical hierarchy in laboratory. There is an informal hierarchical relationship between all members which is called senpai-kohai relationship. This type of vertical hierarchy exists in laboratory/zemi/kenkyushitsu system and requires lower classmates to show respect to upper classmates. Some Turkish students stated that they had some difficulties adjusting to this type of hierarchy between their laboratory

/ zemi/kenkyushitsu mates. An example of the comments on this category is provided below:

“If you can utilize well, there is an advantage of zemi system, because when you study together, you are always in touch with many students. Assistant professor is also in the same laboratory. (...) You live in a communal life. Also, a very good environment for friendship is built in the laboratory if you wish. Especially among the Japanese. (...) When there is a problem they find a solution together. They speak and discuss. They create a very nice communal life. We couldn’t benefit from it, though. The international students couldn’t join if they didn’t push other students to get accepted. The Japanese take the advantage of this very well and push it further.” (Interviewee 5)

Academic Facilities and Support category addressed laboratory utilities, academic sources and academic funding. This category addresses the aspects of university facilities including laboratory utilities, laboratory equipment, library, access to academic sources and academic funding to research. Especially students from natural sciences and engineering addressed that opportunities provided by universities with a high level of satisfaction. An example of the comments on this category is shown below:

“My supervisor in Turkey had very limited funding. Now being under such a professor and a big laboratory (in Japan), these people have no account of the amount of money they can receive and spend.” (Interviewee 12)

Social Skills in Academia

The third category is *Social Skills in Academia*, consisting of categories called as *Challenges and Problems in Academic Life*, *Coping Strategies for Stress* and *Academic/Social Skills*.

The category called *Challenges and Problems in Academic Life* focused on language related problems, alienation, passive supervision style, low feedback on academic performance, lack of classes in PhD level and change of research theme. Some of the students addressed deadlines of papers and dissertations, interpersonal problems with laboratory mates, strict attitude of supervisor, obstacles in experiments and data, and lower academic ability as challenges and problems that they had to overcome. Most of the students addressed the passive supervision style which is also related to low feedback on academic performance as one of the biggest problems. Following the supervision style, the most commonly used language being the Japanese language is presented as one of the struggles that they had to overcome. Some of the students stated that they felt alienated during the laboratory meetings. The results suggested that students who earned their master’s degree from a country other than Japan reported having more problems in adapting to Japanese academic system that students earned their master’s degree from Japan and continued into PhD. An example of the comments on this category is shown below:

“We international students feel really alienated in the classroom, because we don’t understand anyway. We feel weird when we are there to understand, and we don’t do any English version of this activity, so we feel a little disconnected and isolated.” (Interviewee 19)

Interviewees described how they coped with stress in *Coping Strategies for Stress*. The coping strategies are classified into two strategies; namely, active coping strategy and passive coping strategy. Active coping strategies can be exemplified as doing

exercise, talking to supervisor about obstacles in research whereas passive coping strategies is associated with taking antidepressants or withdrawal from social life. An example of the comments on this category is provided below:

“I have two options when I have problems with the experiments. Actually, not two options, but two ways. Either I’m really nervous, and “I’ll troubleshoot it” I say, I work 7 days and 24 hours, or I close myself off and stay at home. So, I can’t tell that I can cope with stress very well.” (Interviewee 17)

The final category was *Academic/Social Skills* consisting of social skills used by interviewees in academic life. Some students stated that they observed and adopted new social skills to use in academic life including class environment and communication with laboratory/zemi/kenkyushitsu mates whereas some students stated that they do not regulate their actions and behaviors. An example of the comments on this category is provided below:

“I often use an indirect expression, like a Japanese. I observed the relationship between Japanese students and teachers. When the teacher asks a question, they don’t immediately answer, or the Japanese do not respond very confident. It is what I’ve observed. They are like “Oh, isn’t it?” They take a moment to think. I began to mimic it. I realized that when you act like that, the teachers began to treat kinder.” (Interviewee 1)

Discussion and Conclusion

The results of this study revealed the academic experiences of Turkish students regarding to the Japanese academic system with the evaluation of the positive and negative aspects, differences between Turkish and Japanese academic systems, challenges and problems encountered and coping strategies used. The results suggest that supervision related variables are associated with academic culture shock leading to adjustive problems. A study (Güngör, Karasawa, & Boiger, 2014) that compared Turkish students and Japanese students in terms of autonomy revealed that the autonomy level of Turkish students is lower than Japanese students. Autonomy is described as “the ability to take charge of one’s own learning” (Holec, 1981). Research on autonomous learning done in Turkey (Cakici, 2017; Kırtık, 2017) suggest that although Turkish university students are aware that they can autonomously learn, and they exhibit features of an autonomous learner, they still expect guidance and support from teachers in some areas. Also, research indicate that education system in Turkey is not designed to promote and maintain autonomous learning in students. The results of the present study revealed that Turkish students in Japan had problems when they encountered the Japanese style of supervision, and experienced academic culture shock which was a challenging process that they had to go through. As mentioned previously in results section, the style of Japanese supervisor is described as passive, and some students stated that they expected an active guidance from their supervisors such as providing knowledge on a certain topic or teaching a method. Most of the students addressed this issue as one of the biggest differences between the Turkish academic system and the Japanese academic system. Some students had problems understanding if it is the cultural difference in the supervision style or indifference of their supervisors. The results of the analysis point out that problems comprehending the differences between academic systems may result in frustration and wrong attribution to the attitudes of supervisors leading to academic culture shock. Additionally, it was revealed that students who expected more guidance in research and feedback on their performance and had lower levels of

autonomous learning experienced a decrease in motivation and an increase in stress levels leading to adjustment problems to the Japanese academic system. Conversely, the results suggest that students with higher levels of autonomous learning or students who realized the essence of the Japanese academic system experienced lower levels of academic culture shock and problems and adjusted more quickly to the system. To sum up, the results suggest that the cross-cultural differences in educational background which is related to academic culture shock resulted in some problems in academic adjustment. The results of a study conducted by Okumuş Ceylan (2015) with Turkish university students indicate that autonomous learning can be acquired via student training, and autonomous learning strategies that are provided can help make students their own teachers at universities. Therefore, a training program to promote autonomous learning in Turkish students in order for them to gain academic self-reliance prior to their arrival to Japan is suggested for a smoother academic adjustment.

Further research on international students from different countries is needed in order to have a deeper understanding the current issue, for generalizability and to devise a training program for all international students to support academic self-reliance prior to their arrival at Japan if needed.

Acknowledgements

We would like to thank the Turkish students/graduates in Japan or Turkey for their invaluable contribution to these insightful interviews. Additionally, this study was supported by KAKENHI (Grant-Aid for Challenging Exploratory Research NO. 15H0345618, representative Tomoko TANAKA).

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***Preliminary Finding:
The Role of Non-Formal Education in Developing Rural Youth Empowerment***

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

High unemployment levels remain a real concern for developing countries like Indonesia, where employment growth is much slower than population growth, with youth experiencing the highest unemployment rate and difficulties finding a place in the national workforce. This is often compounded by poverty which is an entrenched social and economic challenge. To support poverty reduction improve employment opportunities and facilitate empowerment for children and youth in rural Gianyar Bali, the non-formal education facility, the Slukat Learning Center, was established in 2007. With just over a decade of operation, and a number of seemingly positive student outcomes, it is arguably timely to reflect upon the nature of the Slukat curriculum, with the view to informing what has otherwise being a gap in the research literature between the theory and practices in non-formal education (Romi and Schmida, 2009). Aiming to contribute to the research in the field on youth empowerment through non-formal education, this paper draws on the work of Bourdieu's Social Reproduction Theory to explore how the Slukat Learning Centre curriculum has evolved to provide learning experiences that challenge poverty and facilitate employment. In particular this paper draws upon data collected from 18 SLC alumni to unpack their understanding and experience of the curriculum. Reading these data through the lens of Social Reproduction theory, preliminary analysis indicate that "SLC" comprises which is supportive of youth developing an new new habitus through access to and acquisition of a range of economic, cultural and social capitals.

Keywords: Non-Formal Education, Youth Empowerment, Social Reproduction Theory

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Introduction

As a developing country and the 4th most populous country in the world, Indonesia continues to face challenges in developing its human capital. Indonesia is ranked 74 out of 130 nations in terms of the Human Capital Index in 2016, which is a measurement of developing and deploying human capital potential. The highest rate of unemployment is associated with the 15-24 age group, comprising 21.8 million people or almost 10% of total population. Poverty is thus an entrenched social and economic challenge, which is interconnected with and compounded by unemployment (World Bank Indonesia Overview Report). Though 50% of Indonesian children and youth living in poverty are residing in Java and Bali (SMERU & UNICEF, 2012), the impacts of these national challenges can be observed at regional and local levels, such as in Gianyar, in (location) Bali. A review conducted in 2004-2005, which subsequently informed the establishment of SLC found that the number of people looking for employment over the age of 15 had increased by 28% from 13,135 to 18,475. Moreover, 83% of this cohort had only completed primary school level education, which limited their employment options (Gianyar Regency report in 2004-2005) In response to what appear to be an education related challenge to youth empowerment, the family of I Gusti Agung Rai and I Gusti Ayu Darsini, (local Balinese) established SLC to provide free, after school extra curriculum activities for the children and youth in Keramas Village, in Gianyar, Bali.

With just over a decade of operation, and a number of seemingly positive student outcomes emerging from the Slukat Learning Center, it is now arguably timely to reflect upon the nature of the Slukat curriculum, with the view to informing what has otherwise been a gap in the research literature between the theory and practices in non-formal education (Romi and Schmida, 2009), particularly in relation to the inclusion of disadvantaged and excluded communities (Hoopers, 2006, p.87), and in terms of sustainability in conditions of limited funding (Werquin, 2010).

Aiming to contribute to the research in the field on youth empowerment through non-formal education, this paper draws on the work of Bourdieu's Social Reproduction Theory to explore how the Slukat Learning Centre curriculum has evolved to provide learning experiences that challenge poverty and facilitate employment. In particular this paper draws upon data collected from 18 SLC alumni to unpack their understanding and experience of the curriculum. Reading these data through the lens of Social Reproduction theory, preliminary analysis indicates that SLC comprises which is supportive of youth developing new habitus through access to and acquisition of a range of economic, cultural and social capitals. We hope that the preliminary findings reported in this paper and indeed the findings of the larger research project from which this paper emerges, can be used as a reference not only in Indonesia but also other developing countries that encounter similar issues.

The Slukat Learning Center (SLC)

Slukat Learning Center(SLC) is a free, after school, non-formal education center. Its mission is to empower rural youth in Gianyar Bali, primarily through improving rural students' acceptance rates in quality schools, and provide improved education opportunities. Since opening in 2007 approximately one thousand students have participated in the SLC curriculum.

1. The Curriculum

The curriculum is grounded in four pillars comprising: 1. globalisation, 2. information technology, 3. local wisdom and 4. character and leadership development. These four pillars are integrated and interconnected through the various teaching and learning activities that included for example: the English and Computer Class. Components of the curriculum have often been constructed and taught by international volunteers who provided students with access to aspects of globalization and internationalization, which arguably facilitates in the students the development of self-confidence and motivation. Local wisdom informs the curriculum through student participation in practicing yoga, learning Balinese dance and engagement in activities associated with Balinese culture and religion such as preparing Balinese offerings (Banten) and cuisine (Dapur Bali); activities that are facilitated by SLC's alumni and parents. Development of student character and leadership skills has occurred through establishment of the Slukat Student Organization (SSO) where students can construct and implement an action-learning project. These projects' have variously incorporated activities associated with leadership and motivational workshops, coaching and mentoring, local wisdom, spirituality and values in order to mitigate what are often seen in Bali as the negative impacts of globalization in Bali (L. Tamatea, 2011).

2. Youth Empowerment Program

Most families in the broad area 'serviced by SLC can be categorized as living in conditions framed by disadvantage; observable from low family income, decreased wealth, and low levels of parental education. The significance of this in terms of SLC's mission and curriculum is that the "absence of parental guidance, nourishment, and encouragement is the most damaging condition for child development" (Kautz, Heckman, Diris, Ter Weel, & Borghans, 2014, pp. 5-6). Moreover, (Kautz, Heckman, Diris, Ter Weel, & Borghans, 2014, pp. 5-6) explain that:

Quality parenting—stimulation, attachment, encouragement, and support—comprise valuable indicators of child advantage, which are not always so well captured by the 'traditional' measures of poverty commonly used in policy discussions.

Informal observations over the ten-year period since SLC was established reveal that many students initially engage the SLC curriculum from a position framed by little family encouragement for 'academic' achievement and consequent low levels of self-worth and motivation. In response, the SLC curriculum aims to empower often-vulnerable students from disadvantaged backgrounds by developing their agency (Mohajer & Earnest, 2009). Here, we draw upon Bowman (2010, p. 4), referencing Sen, to understand that agency is

"the capacity to act and bring about change", such "agency is important in evaluating 'what a person is free to do and achieve in pursuit of whatever goals or values he or she regards as important'"

Though we understand that choices are always limited, the SLC youth empowerment program is grounded upon making more choices available to its disadvantaged

students that may have previously been available to them, to foster improved social inclusion and economic and social mobility (Heckman, 2000).

Our approach to youth empowerment through the provision of non-formal education is thus aligned with the work of Morton and Montgomery (2011) who argue that youth empowerment is a process by which a young person's social environment intentionally redefines his or her role as one of value, ability, autonomy, and contribution. Within this empowering environment, attitudes and behaviors change so as to reflect the redefined roles in which youth may find themselves Morton and Montgomery (2011).

3. Non-Formal Education

Souto-Otero, Ulicna, Schaepkens, & Bognar, (2013) argue that the purpose of non-formal education youth organisations is to:

to enhance the skills and competences that empower young people in their personal development - boosting their self-esteem and awareness of their identity- helping them to become responsible and active citizens in their communities and to access and stay in labor market (16).

This view resonates with SLC's founder mission in establishing SLC. According to the SLC website, the founders in taking the opportunity to give back to their community believed that village children could have a better future if only they had the appropriate opportunity. And in this, they viewed education as being central - through provision of a conduit to help disadvantaged students better negotiate the local and the global.

Research Methodology

1. Research purpose

The purpose of the research project from which this discussion paper emerges has been to explore how the SLC non-formal education curriculum supports rural youth empowerment. To support this investigation of the curriculum, the project aims to answer the following research questions:

- What are the capitals manifest at SLC?
- How do these capitals facilitate rural youth empowerment?

2. Research Orientation

In exploring how SLC supports rural youth empowerment the research project is framed by a broadly qualitative research orientation. It aims to generate a rich in-depth description of the programs which comprise the curriculum as a whole at the Slukat Learning Centre in so far as this concerns the empowerment of rural youth (Mertens, 2005). Thus far, this research orientation and accompanying qualitative research methods have supported exploring students' lives, behaviors, and indeed their stories and meanings that are connected with their experience of non-formal education at SLC. The research project is framed by the critical paradigm which

allows for a better understanding of how socio-economic factors may impact the students' relationship to the curriculum and learning experiences (Tamatea & Pramitasari, 2018).

3. Participants

Invitation to participate in the research project were posted in various communication channels including SLC's Facebook page, Instagram and the Alumni's Network Group. 18 SLC alumni who were SLC students between 2007- 2016 agreed to participate in the research. Their age ranged between 19 and 26 with the cohort comprising 9 males and 9 females. All alumni have since graduated from High School and are currently either continuing higher degree education, developing their own businesses or working in an institution/organization.

4. Data Generation

Data were collected from a number of sources. These included semi-structured one on one interviews with the alumni and reviews of their personal stories through available on Facebook, in blogs, in Instagram, and in LinkedIn. Data were also generated through accessing videos created by Alumni and various scholarship application documents. Interviews were conducted online using WhatsApp as the alumni were located in different part of the world including:

- 14 are in different parts of Bali, Indonesia.
- 1 in Java and 1 Kalimantan, Indonesia.
- 1 in the United Kingdom and 1 in New Zealand.

5. Data Interpretation

The research project from which this discussion paper emerges is guided by Bourdieu's Social Reproduction theory (Bourdieu & Passeron, 1990) with its emphasis upon capital (economic, social and cultural) the field, and habitus. Bourdieu's social reproduction theory comprises, according to Webb, Schirato and Danaher (2002, p. 1):

the most significant and successful attempt to make sense of the relationship between objective social structures (institutions, discourses, fields, ideologies) and everyday practices (what people do, and why they do it).

For a project aiming to understand how the curriculum supports rural youth empowerment, Bourdieu's Social Reproduction Theory, with its emphasis upon the relationship between social, cultural and economic informants of behavior would seem to offer a value set of tools for understanding not only the students' initial response to the SLC curriculum, but how the curriculum might facilitate a change in such a response.

Key concepts from Bourdieu's social reproduction theory are explored in brief below.

Field

For Bourdieu a field “is always inhabited by individuals in a relationship with others who are framed by its rules of the game or doxa (Bourdieu and Wacquant, 1992, p. 101)”. Moreover Ignatow and Robinson (2017, p. 95) assert:

Bourdieu defines a field as a network or configuration of relations between social positions in which positions and their interrelations are determined by the distribution of economic, social, and cultural capital. Though the borders between fields are porous, each field is characterized by its own logic (the ‘rules of the game’).

Based on the above understanding of the field, we argue that the field in this research project comprises the context of the Slukat Learning Centre. This is a context within which students are in a relationship with others (such as other students, volunteers and program support staff) where in there are rules of the game or doxa. The research project will explore more precisely what these rules of the game and doxa are.

Habitus

According to Bourdieu, the habitus is “tied to the ‘perception and appreciation of practices, cognitive and evaluative structures which are acquired through the lasting experience of a social position” (1989 p.19). Working with this understanding of the habitus, the research project explored the alumni’s pre-SLC dispositions and those which had emerge presumably as a result of participation in the SLC context and curriculum.

Capital

Anheier, Gerhards, and Romo (1995, p. 862) assert that:

Bourdieu's concept of "capital" is broader than the monetary notion of capital nonmonetary as well as tangible and intangible forms. Bourdieu (1986, p. 243) distinguishes between three general types of capital, which may assume field-specific contents:

- a) Economic capital refers to monetary income as well as other financial resources and assets and finds its institutional expression in property rights.
- b) Cultural capital exists in various forms. It includes long-standing dispositions and habits acquired in the socialization process, the accumulation of valued cultural and formal educational qualifications and training.
- c) Social capital is the sum of the actual and potential resources that can be mobilized through membership in social networks of actors and organizations.

Based on the above understanding, the research investigated the most valuable learning/experience alumni gained in SLC that impacted their life.

Preliminary Research Findings

Working with Bourdieu's Social Reproduction Theory to interpret the participant (Alumni) responses, it appears (at this early stage) that SLC curriculum supports student access to a range of capitals. These capitals are identified in Table. 1. Below:

Table 1

Economic Capital	Cultural Capital	Social Capital
<ul style="list-style-type: none"> • English skills • Basic IT Skills • Leadership and organizational skills 	<ul style="list-style-type: none"> • Acquired politeness and courteousness • Developed self- confidence to interact with other people from different nationalities and culture • Gained effective communication skills to interact with different type of nationalities and (school, workplace, conference, organization) 	Local, national and international social networks supporting: <ul style="list-style-type: none"> • employment opportunities • Education funding opportunities • Socio-economic project funding opportunities

The data show that the alumni valued their participation in the SLC curriculum for a number of reasons. These included the:

- fun and happy learning environments;
- curriculum openness and flexibility;
- guidance and encouragement from the founders' family;
- mentoring from volunteers, staffs and alumni;
- international cultural interaction
- sharing of information and knowledge between SLC members;
- action leaning projects such as event organization and excursion

The Alumni report that as a consequence of their participation in the SLC curriculum they have acquired increased confidence, motivation, creativity, innovation, courage and resilience. Arguably these reported outcomes point to a change in student habitus, from one initially framed by low motivation, expectations and self-belief, to one sufficiently confident to pursue dreams:

The alumni in this participate group have since gone on to achieve outcomes that would have arguably been beyond their expectations upon initially joining SLC. These have included:

- Being awarded an overseas and domestic bachelor and master degree Scholarship (UK, New Zealand, US, India and Indonesia)
- Participation in International Exchange Programs in Japan, Singapore and US.

- Pursuing a ‘dream job’ in hospitality industry, military and medicine
- Becoming an entrepreneur in the creative industry, as a web developer, professional dancer, and video and photography professional.
- Continuing on into a higher education degree.
- Financially supporting themselves and their family.
- Mentoring and inspiring other students.
- Becoming leaders in their school and communities.
- Creating a social movement to save environment and improve public health.

Conclusion

The SLC curriculum is firmly grounded in the specific context of Balinese local wisdom; a location which it leverages to attract international volunteers, inform the utilization information technology and develop the student’s character, and leadership as forms of capital to be used to overcome disadvantage. Grandstaff (1976) argues that in the context of specific development programs (such as at SLC), non-formal learning is often the most appropriate educational strategy and thus a better choice than formal education.

These preliminary research findings indicate “SLC” comprises that makes available access to a range of capitals that seem to have a positive impact upon students’ dispositions or habitus. More importantly the data show the SLC curriculum provides opportunities for the empowerment of rural youth. These, however, are early and preliminary findings generated from a cohort of alumni. The research project will now begin to generate data from a range of other sources including current students, to provide a more complete (if not complex) mapping of how the range of capitals associated with the curriculum interact.

Acknowledgement

Australian Government Research Training Program (RTP) Scholarship of Charles Darwin University who sponsored and supported the research.

Slukat Learning Center Alumni as the participants of the interviews

Slukat Learning Center staff who supported the research:

Ni Made Indira Santi

I Dewa Gede Agus Prabawa

Gusti Agung Dwi Anggreini

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***The Performance of Factor and Multiple Problem-Solving
for the Fifth Grade with Mathematics Underachievers***

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

The research method adopted was a survey study in quantitative research. The purpose was to explore the performance of factor and multiple problem-solving in fifth-grade underachievers, including performance on the tests, patterns of error and causes of error. The participants came from a public elementary school in Tainan City, a total of 53 mathematic underachievers from 14 classes. The data were collected using quantitative and qualitative methods. The “learning achievement test” designed by the researcher was used as quantitative analysis and 12 students were interviewed as qualitative analysis. The findings were as follow: (a) Regarding factor and multiple problem-solving, the students showed poor performance on the tests; (b) Six patterns of error were identified, including “misunderstanding of prior knowledge,” “missing concept of factor and multiple,” “fuzzy concept of factor and multiple,” “careless calculation and a slip of pen,” “problem-solving only by the use of keywords,” and “the lack of semantic understanding abilities;” and (c) Six causes of error were identified, including “the lack of prior knowledge led to the misconceptions,” “the lack of operational abilities suppressed concept construction,” “insufficient life experience hindered conceptual understanding,” “semantic comprehension error interfered with problem-solving activity,” “the lack of operational concept resulted in problem-solving difficulties,” and “insufficient integration capacity affected the effectiveness of problem-solving.”

Keywords: mathematics underachievers, factor, multiple, problem-solving performance

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Introduction

In recent years, improving the mathematics literacy of students has become the primary educational goal of mathematics education groups around the world. Based on “*The Grade 1-12 Curriculum Guidelines for Mathematics*” in 2018, our country focuses on the ability of students to solve problems and to appreciate and cultivate a positive attitude toward mathematics. The ultimate goal is to achieve the vision of “talent development—a fair chance for all.” In 2014, the National Council of Teachers of Mathematics (NCTM) published the Common Core State Standards (CCSS) for Mathematics. It was pointed out in 2010 that the mathematics curriculum standards should include the principle, “Students shall use mathematical reasoning from multiple sources and apply mathematics to solve problems in the real world (CCSS, 6-8).”

According to research data included in the 2015 “*Trends in International Mathematics and Science Study*” (TIMSS) and the “*Program for International Student Assessment*” (PISA), there are great disparities between the performances of high-scoring and low-scoring children in Taiwan. The most worrying of these is the excessive number of mathematics underachievers. Furthermore, today’s inclusive education emphasizes that teachers should provide each student with learning and interaction with his or her peers in a natural and integrated environment. However, it is imperative to establish the underachievers in ordinary classes to eliminate fear of learning and to cultivate confidence in solving problems with mathematics.

In terms of the researcher's teaching practice, the application of factor and multiple problems is one of the most difficult skills for elementary school students. The primary reason for this is that the concept of factoring is an extremely abstract mathematical term and quite removed from the life experience of fifth-grade students. Modern cognitive psychologists regard learning as the process of learners actively constructing knowledge, especially in the arena of education. The psychologists pay more attention to process-oriented and error-patterns analysis. The results of incorrect reaction processes can provide many rich messages for instructors and serve as a reference for remedial teaching (Chyn, 1995).

In examining the domestic discussion of the factor and multiple problem-solving process, the research object is aimed mainly at junior high school students and students with learning disabilities. However, few studies have been conducted on the problem-solving performance and the patterns of error in mathematics of underachievers. Therefore, the researcher hopes to understand the learning difficulties by exploring the factor and multiple problem-solving processes of underachievers and, to this end, analyzes the types and causes of errors that may arise. The main purpose of this research is to provide teachers with references in classroom teaching, curriculum design and teaching evaluation in the future. Teachers can implement differentiated instruction according to the different ability levels of students to help underachievers to develop their learning potential.

Purpose of the Study

The study is mainly aimed at the mathematical problem-solving performance of fifth-grade underachievers in a public primary school and discusses the rate of correct

results, the patterns of error and the causes of error in the concepts of factor and multiple problems.

Research Questions

Based on the goals list above, the research questions are as follows:

1. What is the rate of correct results in the concept of factor and multiple problem-solving for the fifth-grade underachievers?
2. What are the patterns of error in the concept of factor and multiple problem-solving for the fifth-grade underachievers?
3. What are the causes of error in the concept of factor and multiple problem-solving for the fifth-grade underachievers?

Literature Review

The Meaning of Mathematical Problem-Solving

In mathematics culture, specific activities are generated to solve problems. Santos-Trigo (2014) asserts that “Mathematical problem solving is mainly to foster an inquisitive approach to develop and comprehend students’ mathematical knowledge. These activities involve making sense of concepts or problem statements; looking for different ways to represent, explore, and solve the tasks; extending the tasks’ initial domain; and developing a proper language to communicate and discuss results (496).” As can be seen from the above, problem-solving can be used as a method of reconstructing knowledge content and testing learning effectiveness. Developing students’ problem-solving skills is the primary goal of curriculum and teaching.

The Process of Mathematical Problem-Solving

This study combines the problem-solving theory of two scholars, Schoenfeld (1985) and Mayer (1992). The researcher believes that Mayer explored the problem-solving process from the perspective of cognitive psychology, focusing on the psychological process analysis between the problem-solver and the problem. Schoenfeld’s problem-solving process described the problem-solving behavior at each stage, and focused on the behavior analysis and verification process, and evaluated the problem-solver’s confidence. Therefore, this study integrates the problem-solving process proposed by the two scholars and divides it into five stages: reading (R), analysis (A), planning (P), execution (I), and verification (V).

The Meaning and Type of Misconceptions Analysis

The misconception also includes the preconception. Fujii (2014) pointed out that misconceptions or alternative conceptions are concepts that are considered reasonable and viable conceptions based on the problem-solver’s experiences in different contexts or in their daily life activities from a child’s perspective, including students’ mental models, children’s arithmetic, preconceptions, native theories, conceptual primitives, private concepts, alternative frameworks, and critical barriers (453). In 1985, Mayer divided problem-solving mistakes into three patterns: (a) omission error, (b) specification error, and (c) conversion error. The most serious reason for the conversion error is that many students do not recall the relation-representational model and lack linguistic knowledge.

Methods

The purpose of this study was to understand the performance of factor and multiple problem-solving of fifth-grade mathematics underachievers in public elementary school. Therefore, the survey research in the quantitative analysis was used.

Participants

Participant in the Paper-and-Pencil Test

The pretest phase was to select the fifth grade of the southern A school using the H mathematical version. A total of 56 students in the two regular classes were used for the group test. In the formal stage, a convenience sampling method was adopted to select the required research participants. Therefore, underachievers in the fifth-grade general class of the southern B school were selected, and a total of 53 students in 14 classes were used for the test.

Participants in Individual Interviews

In order to gain a deeper understanding of the patterns and causes of errors in the performance of factor and multiple problem-solving, the researcher analyzed the test contents and answers of the students after the test was completed. The 12 students who chose various problem-solving problems were selected as representatives, and the semi-structured interview was conducted according to the syllabus of the interview.

Materials

Factor and Multiple Achievement Test

This study was based on the relevant literature, the Grade 1-9 mathematics curriculum guidelines, and the contents of the three commonly used versions of the current fifth-grade textbook.

The achievement test questions were divided into three cognitive dimensions, namely “conceptual understanding,” “procedure implementation”, and “problem-solving.” Each dimension included five formats: “factor,” “common factor and greatest common factor,” “multiple,” “common multiple and least common multiple” and “multiple of 2, 3, 5, 10.”

In the matter of difficulty and the discrimination index of the test questions, the P value of the “conceptual understanding” dimension was between 0.3 and 0.6 and the D value was between 0.3 and 1.0. The P value of the “procedure implementation” dimension was between 0.2 and 0.7 and the D value was between 0.3 and 0.6. The P value of the “problem-solving” dimension was between 0.2 and 0.4 and the value of D was between 0.2 and 0.4. All three were in line with the P and D values of the ideal questions proposed by the experts.

Procedure

Implementation and Score

In this study, the group test method was first determined, and a total of 56 students in the fifth grade of the southern A school were selected as the pretest participants. The test time was 40 minutes. In succession, a total of 53 underachievers for the fifth grade of the south B school were selected for the group test.

In terms of scoring, this test had a total of 14 questions, and the scoring approach was one point for each question. The highest score that could be achieved was 14, and the lowest score was 0. If the scoring principle was to write the correct answer for each question, 1 point would be awarded. If the question had clerical error, calculation error, solution process error, incorrect answers, or unanswered situation, the question was not given.

On the subject of validity, the researcher, who prepared the test papers, invited mathematics educational experts, senior teachers, and resource teachers to discuss, amend and review all aspects of the test questions. Finally, the researcher also invited three underachievers in the fifth grade to take the test in order to ascertain the speed of the students' answers and the quality of the questions.

In order to determine the feasibility of the test questions and the required test time, the pretest would be conducted by the fifth-grade students of the A school. The Cronbach's α value for this pretest was .75. For the purpose of understanding the patterns and causes of learning errors, the fifth-grade underachievers of the B school were selected for formal testing. The Cronbach's α value for this test was .80, which meant that the reliability of this test was quite good.

Analysis

Paper-and-Pencil Test

This study would summarize the results of the participants' test results and calculate the rate of correct answers for each question in the achievement test, then calculate the correct rate, average correct rate, and total correct rate of each type according to the type of problems, in order to ascertain the problem-solving performance of the fifth-grade students.

Interview Data

The researcher conducted qualitative interviews according to the syllabus of the interview. During the interview, the researcher used the triangulation method of different data sources such as problem-solving performance, on-site recording, and recording, hoping in this way to analyze the problem-solving performance of students objectively and improve the validity of data analysis.

Results and Discussion

Student's Problem-Solving in the Concepts of Factor and Multiple

After the collation and summary of the test papers, the researcher calculated the rate of correct answers for each type of problem, the conceptual average correct rate, and the overall correct rate for factor and multiple problems, as shown in Table 3. It can be seen from Table 3 that the overall correct rate of the "Factor and Multiple Achievement Tests" for students was 47.0%, which showed that the effect of learning factors and multiple urgently needed to be strengthened. It was worth further discussion.

Table 3
Students' Problem-Solving Performance in the Factor and Multiple Achievement Test

Concept	Type of problem	Question number	Correct rate for each type of problem (%)	Conceptual average correct rate (%)	Overall correct rate (%)
Factor	Factor judgment	1	71.7%	56.6%	
	Factor algorithm	6	67.9%		
	Factor application	11	49.1%		
Common factor, Greatest common factor	Judgment of common factor and greatest common factor	2	32.1%	47.2%	
	Algorithm of Common factor and greatest common factor	7	67.9%		
	Application of Common factor and greatest common factor	12	41.5%		
Multiple	Multiple judgment	3	71.7%	49.1%	47.0%
	Multiple algorithm	8	52.8%		
	Multiple application	13	22.6%		
Common multiple, Least common multiple	Judgment of common multiple and least common multiple	4	60.4%	34.6%	
	Algorithm of common multiple and least common multiple	9	22.6%		
	Application of common multiple and least common multiple	14	20.8%		
Multiple of 2, 3, 5, 10	2, 3, 5, 10 multiple judgment	5	66.0%	48.1%	
	2, 3, 5, 10 multiple algorithm	10	30.2%		

- Notes: 1. Correct rate for each question type = (number of correct answers to the question ÷ total number of questions) × 100%
2. Overall correct rate = (total number of correct answers ÷ total number of questions) × 100%

Students in the Patterns of Error in Factor and Multiple Problem-Solving

The researchers compared the problem-solving performance of the 53 underachievers in the test according to the three concepts of “conceptual understanding,” “procedure execution,” and “problem-solving.” The statistics were classified into six possible patterns:

Conceptual Understanding

In the students' performance in conceptual understanding, the total error rate was 39.6%. Moreover, incorrect answers were more serious in the concept of common factor and common multiple problem-solving than in other types of questions. These errors mainly followed two patterns: “misunderstanding of the prior knowledge” and “missing concept of factor and multiple.”

Procedure Implementation

In the students’ performance in procedure implementation, the total error rate was 51.7%. Moreover, incorrect answers were more serious in the concept of common multiple and least common multiple than in other types of questions. These errors mainly followed two patterns: “fuzzy concept of factor and multiple” and “careless calculation and a slip of pen.”

Problem-Solving

In students’ performance in problem-solving, the total error rate was as high as 66.5%. Many of the students were left blank spaces on the test papers, showing that they had given up trying to solve the problems. These errors followed two patterns: “problem-solving only by the use of keywords” and “the lack of semantic understanding abilities.”

Causes of Error of Factor and Multiple Problem-Solving

After classifying the factor and the multiple patterns of error, the researcher further analyzed the causes of the students’ errors through qualitative interviews.

The Lack of Prior Knowledge Led to the Misconceptions

一、 $40 \div 8 = 5$ ，Is 8 the factor of 40? Is 8 a multiple of 40?	三、 $12 \times 6 = 72$ ，Is 72 a factor of 12? Is 72 a multiple of 12?
SB01	SG07
$40 \div 8 = 5$ ，請問 8 是 40 的因數？還是倍數？	$12 \times 6 = 72$ ，請問 72 是 12 的因數？還是倍數？
<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">A: 倍數</div> <div style="text-align: center;">A: 因數</div> </div>	

Problem-Solving Analysis

<p>◎ Analysis T: What is this question asking about? SB01: Eight is the factor of 40, or 8 is a multiple of 40.</p> <p>◎ Planning T: Can you tell me what this question is being asked about? How do you judge? SB01: Eight is a multiple. Because 8 multiplied by 5 is 40, when multiplication is used, the number becomes larger, so it is a multiple.</p>	<p>◎ Analysis T: What is this question asking about? SG07: Seventy-two is a factor of 12, or 72 is a multiple of 12.</p> <p>◎ Planning T: Can you tell me what this question is being asked about? How do you judge? SG07: Seventy-two is a factor, because 12 multiplied by 6 is 72, so 12 is a multiple and 72 is the factor.</p>
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It was found in the interviews that the students mistakenly believed that the multiplication was greater and the division was more and less. Therefore, as long as the title appeared to be multiplied, it was recognized as a multiple, and if it appeared to be divided, it was recognized as a factor. This kind of erroneous prior knowledge led to many misconceptions in learning factor and multiple problem-solving, and indirectly affected learning outcomes. This comports with Graeber and Campbell’s (1993) argument. Most students have the misconception that “multiplication will become larger and division will become smaller” when they solve multiplication or division word problems.

The Lack of Operational Abilities Suppress Concept Construction

二、Among all the factors of the number 甲, the maximum factor plus minimum factor is 65. What is the number of 甲?

SB02	SB03

Problem-Solving Analysis

◎ Planning	◎ Planning
<p>T: What do you think is the number of 甲? What is the maximum factor? What is the minimum factor?</p> <p>SB02: The number of 甲 is 65, the maximum factor is 65 (. . . Hesitate about 20 seconds) the minimum factor. . . . I don't know.</p> <p>T: Why do you write the formula 1×65 at that time?</p> <p>SB02: (. . . Hesitate about 15 seconds) Because 65 is equal to 1×65.</p>	<p>T: What do you think is the number of 甲? What is the maximum factor? What is the minimum factor?</p> <p>SB03: The maximum factor is the largest number in it, the minimum factor is the smallest number in it, so the number of 甲 is 65.</p> <p>T: Could you talk about why this formula is listed?</p> <p>SB03: I list all the factors of 65, with possible answers of 1, 5, 13, and 65.</p>

It was discovered from the interviews that students had difficulty in making meaningful connections between factor and common factor. If the structure of the factor was used, the student needed to have the measurement operations ability to understand the concept of the factor. The so-called “measurement operations” meant that the student could grasp the two parts of the part – the whole relationship. From the interviews, it was found that the students’ understanding of factor and multiple was often lacking in a tightly connected network, so incorrect interpretations of rules were often used to define or interpret the relationship between the two nouns, which led to failure in problem-solving.

Insufficient Life Experience Hindered Conceptual Understanding

七、Please write all the common factors in 15 and 25.

SB04	SB05

Problem-Solving Analysis

◎ Analysis	◎ Analysis
<p>T: What is this question asking about?</p> <p>SB04: Seek common factor.</p> <p>T: What do you think common factor is?</p> <p>SB04: The common factor is the same number when calculating.</p> <p>◎ Planning</p> <p>T: Can you talk about why this formula is listed?</p> <p>SB04: I will write the factors of 15 and 25 first, then circle the same number, which is their common factor.</p>	<p>T: What is this question asking about?</p> <p>SB05: Find common factor.</p> <p>T: What do you think common factor is?</p> <p>SB05: The common factor is the same number with both factors.</p> <p>◎ Planning</p> <p>T: Can you talk about why this formula is listed?</p> <p>SB05: I first find out the factors of 15 and 25, and then find two common factors, . . . Wow! I don't circle this number 1.</p>

The Lack of Operational Concept Resulted in Problem-Solving Difficulties

十一、Hao harvests 56 strawberries and distributes them to the friends. Everyone will get as many strawberries as they can. If the strawberries are just divided equally, how many strawberries can they get? (Please write all possible answers.)

SG09	SG10
$56 \div 1, 2, 4$ $56 \div 56 = 8, 4$ A: 1, 2, 4, 8, 56 顆	$56 \div 2 = 18$ $56 \div 8 = 7$ $56 \div 4 = 14$ $56 \div 9 = 6$ $56 \div 6 = 9$ $56 \div 7 = 8$ P: 2, 4, 6, 7, 8, 9

Problem-Solving Analysis

◎ Planning

T: Can you talk about why this formula is listed?

SG09: Because this question is divided, the equal division is the meaning of division. So it is the factor. I find the factor of 56.

◎ Execution

T: How do you find the answer to this question?

SG09: Mm. . . (After talking to myself for 10 seconds, write the process on paper). I use the division method, because 56 divided by 1, 2, . . . and until it is contained.

◎ Planning

T: Can you talk about why this formula is listed?

SG10: Because the question is said to be divided equally to friends. If you give it to two friends, you can get 18. If you give it to four friends, you can get 14. . . .

T: Do you think that you can send all 56 strawberries to one friend?

SG10: Mm. . . (Hesitate about 9 seconds) I think it shall be ok?

T: Why don't you think of sending all the strawberries to one friend at that time?

SG10: Because the question say to be sent to the friends, I think it must be sent to at least 2 friends.

It could be seen that both “factor” and “multiple” had the characteristics of an operation concept. The learning of operation concepts was subject to complex information processing. Learners had to undergo identification, analysis, reasoning, and other operational activities to internalize and master this concept. Through interviews with students, it was found that many students were often unable to follow this process when searching for factors or that they did not develop in order to enumerate and used the “trial and error” method. Because the way to find the factor and multiple was not correct, it was easy to find more, mistaken, or time-consuming situations, indirectly causing the failure to exhaust all the numbers when looking for a factor or multiple of a certain number, so that the problem-solving activities failed.

Insufficient Integration Capacity Affected the Effectiveness of Problem Solving

十二、There is a rectangular cardboard with a length of 18 cm and a width of 24 cm. The cardboard is cut into several squares of equal size. The length of the square is an integer centimeter. What is the length of the side of this square?

十四、Yun uses a number of rectangular cards that are 6 cm long and 8 cm wide to form a square. What is the minimum length of the side of this square?

SG11

SB12

Handwritten work for SG11: $18 = 18 \cdot 36 \cdot 54 \cdot 72 \cdot 90 \cdot 108 \cdot 126 \cdot (144) \cdot 162$
 $24 = 24 \cdot 48 \cdot 62 \cdot 96 \cdot 120 \cdot (144) \cdot 168$

Handwritten work for SB12:
 $6 : 1, 2, 3$
 $8 : 1, 2, 4$
 $8 : 8, 4, 2$

$A = 144 \text{ cm}$

$A : 1, 2 \text{ cm}$

Problem-Solving Analysis

Planning

T: Can you talk about why this formula is listed?

SG11: Because the item ask the length of square, and the length multiplied by the width equal the area. So use multiples, and then find two identical numbers.

Execution

T: What do you think the answer you calculate is?

SG11: It refer to the length of the square.

Verification

T: Will you check your calculated answer? Why?

SG11: No, because the teacher don't teach it. I use the check answers only when I is calculating.

T: Are you confident in the answer you have calculated?

SG11: (Laugh. . .) It is fine to write. Anyway, at least the success probability will be.

Planning

T: Can you talk about why this formula is listed?

SB12: The question is what the minimum side length of the square is it? So I have to find the factors of 6 and 8, and then figure out that the common factors are 1 and 2.

Execution

T: What do you think the answer you calculate is?

SB12: The side length of the square is 1 cm or 2 cm at least.

Verification

T: Will you check your calculated answer? Why?

SB12: No, because the teacher don't teach it.

T: Are you confident in the answer you have calculated?

SB12: Not necessarily. Sometimes I will have confidence when I see it very simple, but I will have no confidence in the word problem.

From the problem-solving process and interview data of the students, it was found that in the analyzing stage, the students are confused and had a poor understanding of the basic concepts of factor and multiple, and they constructed false or incorrect representations of the knowledge model. In the planning stage, because of the lack of basic mathematical concepts, it was impossible to balance the correctness of the problem-solving strategy in writing, which made it impossible to assess whether the calculated answer was reasonable. During the execution phase, it was more likely that the students would complete the problem-solving task in an inefficient manner because they could not accurately grasp the information presented on the topic, or their understanding was affected by the mental set or the functional fixedness. In the verification phase, the students lacked the ability and method to test answers, so they did not know how to check the calculated answers, which affected the correct rate of problem-solving.

Conclusions

This study mainly focused on the results of the factor and multiple achievement test and interviews and discussed the performance, error patterns, and causes of underachievement in the fifth grade. The total rate of correct student answers in the multiple achievement test was 47%, and the rate of correct answers in the factor, common factor, and greatest common factor test was about 50%. The rate of correct answers in the multiple, common multiple, and least common multiple test was about 50%. The results showed that the students were not well versed in overall problem-solving of the factor and multiple concepts.

Six patterns of error were identified, including “misunderstanding of prior knowledge,” “missing concept of factor and multiple,” “fuzzy concept of factor and multiple,” “careless calculation and a slip of pen,” “problem-solving only by the use of keywords,” and “the lack of semantic understanding abilities.”

Six causes of error were identified, including “the lack of prior knowledge led to the misconceptions,” “the lack of operational abilities suppressed concept construction,” “insufficient life experience hindered conceptual understanding,” “semantic comprehension error interfered with problem-solving activity,” “the lack of operational concept resulted in problem-solving difficulties,” and “insufficient integration capacity affected the effectiveness of problem-solving.”

In response to the conclusions, the researcher put forward five suggestions for teachers’ reference in the teaching of factor and multiple materials, including “providing students with factor and multiple prior knowledge and experience,” “introducing the concept of factor and multiple through life situations,” “promoting students’ reading comprehension abilities regarding factors and multiple,” “paying attention to the development of the concept of factor and multiple operation,” and “improving students’ problem-solving beliefs in mathematic.”

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Effects of 3d Printing Interactive Technology on Special Education for Children with Different Disabilities

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

Using assistive technology as a tool in special education is an important intervention for children with special need in recent studies. This study proposes to develop an interactive tool that functions as a low-cost, learning interface for children with different disabilities. Two children from resource class in elementary school participated in this research. This research applies 3D printing technology to develop a multi-media interactive feedback interface to train children with learning or physical disabilities to insert coins and improve learning motivation. Microsoft Visual C# is used for the human-machine interface. By means of inserting coins, users are able to increase the number of points won or vision and audio interface feedback. After the task is judged, the real-time feedback is processed by a prerecorded key wizard script as the entire control video process. The multi-media content design as teaching materials to increase learning opportunities. By means of this interactive technology and Microsoft Visual C# Windows program, participants were able to use the “coin insertion” tool instead of the left key of a PC mouse. The purpose can be achieved on the basis of the interactive content adjusted for individual needs. This research investigate the effectiveness of a fine motor skills training process for the upper limbs of students with physical disabilities. It involves the parents and teachers in obtaining real feedback. The conclusions of this study are also discussed. This study also applies low-cost technology in home-based interactive learning method for children with different disabilities.

Keywords: 3d Printing, Interactive Technology, Special Education

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Introduction

Use of effective assistive technology can help provide special education of decent quality for children with special needs. As a result of the rapid progress in technology, integration of computers in education has become a worldwide tendency. Through interaction with computers, individualized teaching can be achieved to enhance the motivation of students to learn by practicing repeatedly and to increase their concentration (Lin, 1995). With instant feedback and no limitation of labor and time, computerized interactive technology can provide concrete, practical and interesting learning for students with special needs and train them to develop different skills. For this reason, this type of technology has become popular among teachers of special education. However, great differences exist between students with special needs. The teaching materials and instruments required have to be specifically designed and produced according to such differences. Hence, good tools are rather important for teachers of special education. As far as software is concerned, if such teachers can use the Internet properly, they can find the right resources to reduce the time needed to produce teaching materials. They may also apply word-processing software, briefing software and film-editing software to conduct image processing and create multimedia with light and sound effects to stimulate the learning motivation and interest of students (Mayer, 2009). As for hardware, since many students with special needs have trouble using interactive devices because of their poor physical coordination, appropriate modifications or adjustments are needed to assure students can enjoy the fun of interactive technology during the learning process. Nonetheless, a lot of the push switches, wobble switches and trackball switches available on the market are expensive and many families cannot afford them.

To overcome the problems of high costs and individual differences, this team has adopted 3D printing techniques and developed a coin insertion system. It is equipped with various coin insertion inlets (for regular coins, marbles, ping pong balls, etc.) and connected to a mouse and toys for children with special needs to undergo insertion training to interact with the computer and take courses and physical movement training through game playing. Thus, they will be able to practice continuously without losing interest.

Microsoft Visual C# is applied in this study to complete the software design to allow users to operate coin insertion to score. After the mission is accomplished, prerecorded Quick Macro is applied for script processing. Children with special needs have to use coin insertion tools to control the playing of the entire film and the film contents or courses can be adjusted according to the needs of individual students.

There are three participants in this study. The first one is a child with severe cerebral palsy and the second one with moderate cerebral palsy. Due to muscle tension, their upper limbs do not function well and they have difficulty holding things. Plus, articulation problems also exist and they have trouble communicating with others. Therefore, this study is intended to use the coin insertion system produced with 3D printing techniques to train their fine motor skills and also to increase their learning motivation and effects through their interaction with computers. The last participant is a child with severe autism and unable to talk. His main problems include barriers to social interaction, impaired verbal communication and repetitive stereotyped behavior. It is hoped that this study can increase the opportunity for him to learn to interact with

the outside world by practicing with the coin insertion system and watching the films.

Method

In recent years, 3D printing techniques have been applied extensively in different fields. Continuous improvements and advances in 3D printing techniques have opened a new door in development of assistive technology for special education. Through experiences of touching objected produced with 3D printing, students' imagination can become reality. In this study, 3D printing techniques were applied to design and construct 3D models and print out the products. In order to meet the needs of different students, models had to be constructed, printed and modified repeatedly before the final products are completed. The process of 3D printing is (1) Use drawings or scanning software to create digital files of objects; (2) Transform digital files into digital slices to separate objects into layers of data; (3) Store data on SD cards and transmit them to be read by the 3D printer; (4) The 3D printer injects out materials in layers that stack up to form 3D objects , as shown in Fig. 1.

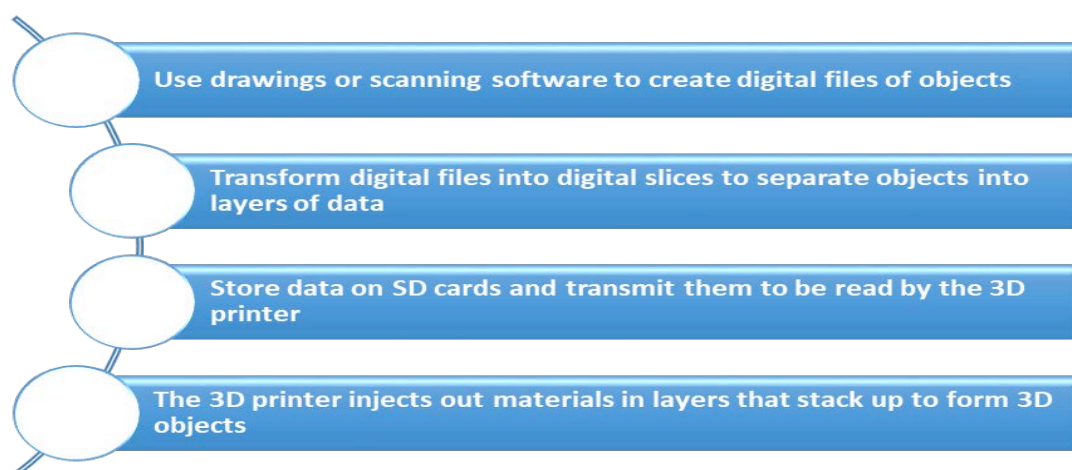


Fig. 1 3D Printing Process

Commonly applied 3D modeling software includes 2D drawing software (Microsoft Paint, Paint Net, PhotoCap, Adobe Photoshop and Inkscape) and 3D drawing software (Blender, 123D Design, Sketch Up, TinkerCAD and Sculptris). In this study, TinkerCAD was adopted to build the models. Common plastic, nylon, paraffin, food ingredients, paper, cement, metal and ceramic powders can all be used as the “inks” of 3D printers. Polylactic acid (PLA) made by combining corn starch and sugar cane derivatives was adopted in this study because it was biodegradable and would not release any toxic substance when printing was carried out at around 190□ (Guo, Zhang, Huang, & Huang, 2017).

The coin insertion system produced with 3D printing had to be tested and adjusted to accommodate a number of types of training for various functions which required insertion holes of different sizes. After repeated adjustment and trial use, several coin insertion systems of different calibers were developed in this study, as shown in Fig. 2.



Fig. 2 Coin Insertion Devices of Different Calibers

Hardware was also needed. The models printed out had to be connected to micro switches, audio lines, and modified mouse devices to form an interactive system with the computer and toys, as shown in Fig. 3 (3dp Bubble machine designer: Chen Wei-Zen).

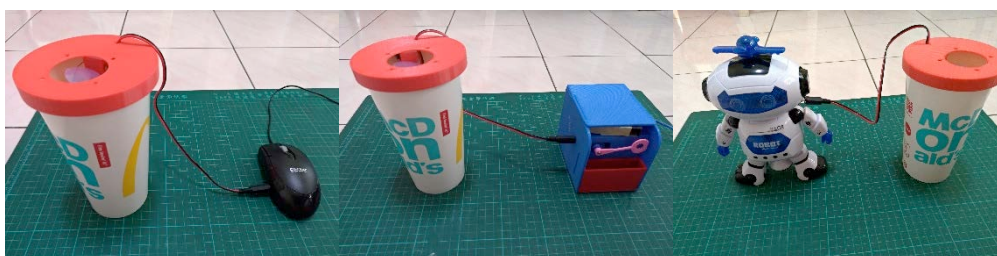


Fig. 3 Models Connected to the Mouse, Bubble Machine and Robot to Form an Interactive System

To achieve interactive effects, contents of Chinese textbooks were adopted to produce simple PPT files which were played to teach students vocabulary and word building and train them to understand meanings of words. In addition, Microsoft Visual C# was applied to develop a film control system to increase the interaction and concentration of autistic children and allow them to wake up Quick Macro for script processing in order to control the process of the films which were selected from Youtube according to the needs of individual students.

Case Study

Assistive technology provides the opportunity for students with special needs to participate in different activities. It can also enhance their learning motivation for them to undergo function training. The posture, muscle training, senses and cognition are all important factors that have influence on the development of fine motor skills. For children with poor physical coordination or concentration, we can design simple games to train their fine motor skills. The coin insertion system developed in this study for training purposes uses relatively cheaper 3D printing tools and micro switches to allow interaction with computers and toys. In other words, the children can simply move the ping pong ball or coin from the palm to the fingers and insert it in the coin insertion system and the interactive system (such as the computer, bubble machine or toys) will increase the strength of the children and stimulate their motivation for and interest in training. This exactly is the game-based learning emphasized. Children can continue to practice without losing interest. We have confidence that practice makes perfect. Repeated practice is bound to produce learning results and assure students will achieve the learning targets.

The case study method was adopted in this study to examine the effects of students with special needs when they used the coin insertion system produced with 3D printing and interactive devices. The three participants in the study included one male fourth-grade student with severe cerebral palsy, one female fifth-grade student with moderate cerebral palsy and one fifth-grade female student with severe autism.

The motor development of cerebral palsy patients can be divided into spastic, athetoid and mixed types. Such patients have problems expressing themselves verbally or in writing and their learning can be affected by their cognitive impairment (Zeng, 2009 ; Scherzer & Tscharnuter, 1990). Rehabilitation is usually difficult but necessary. To prevent muscle degeneration, they need to undergo rehabilitation repeatedly to enhance their muscle strength. For this reason, we hoped to provide them with a simple tool to help them with their training and learning.

Due to poor cross-area processing functions in the brain, autistic children cannot connect related information or experiences together. As a result, their development of speech ability and language comprehension is affected. The most effective way to help the language comprehension of autistic children is to link language and actual scenarios together (Luo, 2013). We hoped to use the coin insertion system to train the fifth grader with severe autism to improve his language comprehension as well as provide him with the opportunity to interact with the environment.

Case 1 child with severe cerebral palsy

In the future, he would be able to use what he learned in everyday life. The child with severe cerebral palsy, case 1, as shown in Fig. 4, suffered serious muscle contracture because of muscle tension, but the results of study showed that use of the coin insertion system and interactive games could improve his static tripod grasp ability and movement of each finger. Dexterity of fingers and appropriate grip strength were required for him to adjust the angle and strength according to the material, smoothness, size and shape of the object to hold and move the object. When applying the coin insertion system to train, he could only use ping pong balls. At first, the more he tried to insert the balls, the stronger his muscle tension became. However, after interactive games were adopted, his insertion movement and tension control improved significantly.



Fig. 4 Case 1

Case 2 child with moderate cerebral palsy

The female fifth grader with moderate cerebral palsy, case 2, as shown in Fig. 5, was right-handed and her right hand was better developed and able to grab larger objects, such as a communication pen, but she needed training to learn to operate the thumb-index web space and finger tips. After assessment, her special education class teacher suggested to enhance her right hand finger movement and train her to practice how to apply the correct strength to grab objects according to their sizes and shapes.

The teacher also believed her left hand also had to be trained to increase the coordination of both hands, so she could use both hands together. Therefore, the coin insertion system and interaction with the slides were applied to improve the functions of her both hands while courses were also integrated to train her linguistic and cognitive abilities.



Fig. 5 Case 2

During training, she kept requesting not to turn on the speakers because she didn't like music. The films from Youtube didn't have much appeal to her. However, she found the vocabulary teaching material specifically designed for her acceptable. She was able to use her right hand to complete a series of training smoothly. When inserting coins, she held the paper cup and put the coin inside easily. With marbles that were smaller in size, she had problems. Her left hand could put in ping pong balls but had trouble with coins. The tension in her left hand was strong and the McDonald's cup was too tall; therefore, it was not easy for her to put in coins. At one point, she tried to stand up to do it. Later, the cup was made shorter to give the proper height for her to put in coins. When interacting with the bubble machine, she got very excited when seeing and touching the bubbles.

Case 3 child with severe autism

Case 3 is the female fourth grader with severe autism, as shown in Fig. 6. When learning, she often could not have eye contact with others and it was difficult to see her facial expressions. Her socializing and communicating capacities lacked integration and she had no speech ability. She could get overly concentrated on something, some interest, conduct or action, or simply lack concentration. The teacher hoped the coin insertion system and the film featuring children's songs could improve her ability to interact with the environment.



Fig. 6 Case 3

The main design for her was the coin insertion system and interaction with the film of children's songs. She had to insert coins to play the film which stopped automatically after about ten seconds and she had to put in more coins to activate the film again. It was hoped the training could increase her concentration and her ability to follow instructions. At the beginning, there was no reaction and her eyes did not focus. The

coin insertion accuracy was low and the teacher had to lend a hand and give instructions repeatedly. After many tries, the teacher no longer needed to give assistance and only provided cues verbally. Accuracy increased, her eyes became more focused and she showed considerable interest in learning.

When the training ended, the teachers and parents of the three children were interviewed. They all expressed the training system was beneficial to the children's concentration and able to improve their learning interest and motivation. The teachers also hoped further use of systematic methods could be adopted to train the children.

Conclusion

Besides increasing the stability of fine motor skills, the coin insertion training can also be applied in daily life, such as using piggy banks, vending machines, coin-operated washers, capsule toy machines, etc. (Meng, & Jane, 2016 ; Waters, 2013). However, coin insertion is more difficult for some children with special needs. Different injuries may cause children with cerebral palsy to have other impediments, including visual impediment, aural impediment, speech impediment, low IQ, behavioral impediment and learning impediment, etc. They need a lot of assistance and rehabilitation to develop further and learn. Unfortunately, they often lack motivation. However, the coin insertion system produced with 3D printing and the interaction design can boost their motivation to undergo rehabilitation. The equipment required is cheap, easy to carry and not difficult to acquire. For itinerant teachers, special education teachers and parents, the burden will be lighter. Moreover, it is easy to make and to use. Plus, different teaching materials and interactive devices can be combined to give students more opportunities to practice without getting bored. Hence, this system can be promoted and applied in special education. Meanwhile, since computers are equipped with simple touch-control and audio-video interfaces and all kinds of application programs can be used to provide learning through visual, aural and touch approaches, they can provide positive assistive functions for autistic children to learn to interact in society, to express themselves verbally, to correct negative behavior and to develop special talents.

The coin insertion system used in this study is produced with 3D printing techniques. Different coin slots are connected to toys or devices to activate the mouse to allow children with different needs to undergo coin insertion training and achieve the purpose of controlling the toys or the computer. At the same time, the coin insertion movement is also a type of rehabilitation. After students with special needs are trained to use the interactive coin insertion system, their hand-eye coordination and language comprehension become better while their short attention span and lack of motivation and patience can also improve. Because of the opportunity to learn independently, students' learning interest and motivation increase. In addition, during the post-training interview, the parents and teachers gave positive responses, indicating the interactive system can trigger the learning motivation and interest of students. Therefore, it is worth promoting.

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*A Study at the Constitution of Students' Family Backgrounds of an Elite University
in the Perspective of Cultural Capital*

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

According to P. Bourdieu, educational outcomes are not mainly determined by mental abilities but habitus that develops within the social space in which parents convert their economic capital into cultural capital. Therefore, middle/upper class students situate a privileged position and working class students are in an unprivileged status and such a difference, in turn, constitutes educational inequity. This relation suggests that the enrollment percentage of middle/upper class students at top universities should be much higher than that of their working class counterpart. In order to examine this possible linkage, a questionnaire, which focused on the interplay between family socioeconomic status, cultural capital and educational achievement, was distributed to 114 students of an elite university, who were randomly sampled. The findings confirmed the theory of cultural capital.

Keywords: cultural reproduction; key college students; family social background

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Introduction

The realization of fairness and justice in society is one of the measures of social civilization progress. Pursuing social fairness and justice is also a relentless wish of people. Education can convey systemic cultural knowledge, basic life skills and shape a healthy personality. One of the main aspects of justice. Education is also considered to be closely related to social stratification and social mobility, mainly because: through the high degree of linkage between the education system and the professional system and the comparability of the education diploma, higher education can enhance the social status and income of the educated, thereby Divided into different levels, so educational institutions are regarded as "screening machines", which is an important mechanism to achieve social stratification^[1]. Many studies have shown that education can effectively promote social mobility and achieve intergenerational transfer of capital (such as occupation and class).^{[2][3]} Generally speaking, the influence of education on social stratification is mainly reflected in the following: first, the influence of family social background and other pre-existing factors on children's educational achievements, and the other is the achievement of children's educational achievements. The impact of social status in the future.^{[4][5]}

In recent years, with the expansion of higher education, more and more children from rural poor families have obtained higher education qualifications. The enrollment expansion policy for higher education is seen as an important measure to achieve social equity and provide upward mobility opportunities and channels for the underlying groups of society. Although many researchers such as Tang Weimin^[6], Wang Yashuang^[7], and Huang Silin^[8] believe that the educational opportunities for children in the upper middle class are in an advantageous position. However, what is more interesting is whether the expansion of higher education is narrowing or expanding the difference in access opportunities due to family background. If such differences are widened, it will inevitably inhibit the speed and extent of the bottom-level group's movement to the upper echelons of society, so that the superiority of the upper-middle class will be reproduced, intergenerational transmission will be realized and the class will be solidified. As a result, the re-production of the elite of the society will replace the flow of elites, resulting in The intensification of class differentiation has threatened the peace and stability of society.

Both the Plowden Report and the Coleman Report in the United Kingdom believe that the influence of family on students' academic performance far exceeds the school factor. The family background is better than the school to better explain the differences in students' academic performance and make people aware of the family. The socio-economic background affects students' academic performance, not the quality of the school. Since then, there have been a lot of research results in the Western countries on family background and children's school performance and academic achievement. P.Bourdieu believes that only the economic action, investment and other economic perspectives of educational actions, without incorporating social

practices such as family tradition, class differences, social structure, etc., will inevitably miss the most hidden and most socially decisive investment in education is family culture capital^[9]. Mc Pherson and Schapiro used American college freshmen admission data to investigate student enrollment changes and found that family backgrounds have a significant impact on children's enrollment. Children from low-income groups are concentrated in community colleges, while children from middle- and high-income groups are concentrated in universities^[10]. James compared Australia's 1991-1997 Higher Education Student Survey data with the 1991 census data and found that although higher education enrollment opportunities have increased, the proportion of disadvantaged groups such as rural students has declined, and these vulnerable groups have mainly entered new low-end categories. Secondary university^[11]. Siebert (1993) used the example of Anglo-American to study the influence of father's occupation on the education level of children: the better the father's occupation, the higher the education level of the children^[12]. Most of these research results prove that the role of education in promoting the realization of social equality is limited, and the family social background has an important impact on the acquisition of children's academic achievements^{[13][14]}.

Li Chunling (2003) believes that the unfairness of higher education opportunities in China is expanding day by day, and the benefits to the upper middle class are far greater than the lower income^[15]. Ding Xiaohao (2000) believes that the accessibility of higher education institutions in China's family society is not deteriorating^[16], and even the gap between higher education and urban areas is narrowing^[17]. The opposite of the data and results of the two studies may be based on differences in time and sampling methods. Family background is also often regarded as ClassOrigin in the study of inequality. Exploring the relationship between family background and children's educational achievement has become an important issue in the study of educational inequality. In recent years, the research on family background in the field of domestic education inequality has gradually emerged. Experts and scholars have gradually shifted their attention from institutional changes and individual factors to family background^[18], which has led to the development of domestic empirical research, such as Zhou Xueguang^{[19][20][21]}, Sun Zhongxin^[22], Wen Dongmao^[23], Jiang Guohe^[24], Guo Congbin^[25], Liu Zhimin^[26], Guo Jun^[27], Yue Changjun^[28], etc., in the education stage, taking the father's occupational status and education level as an important indicator to measure the family background, analyzing the family social background and the achievement of the children's academic achievement, and discovering the higher education enrollment opportunities and entrances of the upper middle class children in the society. The proportion of key schools is higher than that of low social classes. Li Wen used the data of college students' economic survey in 2004 to find that the proportion of students from higher income groups in key schools has a clear advantage^[29]; Li Chunling pointed out that the factors leading to unequal educational opportunities are mainly family background and institutional factors, after 1978. The degree of inequality in the distribution of educational opportunities has gradually increased, and the influence of family background and institutional factors

on education has been increasing^[30]; there are cultural reproduction, resource transformation and policy intervention in the influence of family background on family education. In three modes, after the social differentiation intensified in 1992, the background effect of family society was revealed, and the educational inequality mechanism became a dual mode of resource inequality and cultural reproduction^[31]. Most of these findings indicate that family backgrounds have a significant impact on children's academic achievement.

The research on the background of family society, education fairness and student achievement in China is mainly based on Li Zhonglu's investigation on the growth of capital students^[32], Xiao Rikui^[33] and Wang Yuqin^[34] Investigations, Shen Yan^[35], Yue Changjun^[36], Du Guiying^[37] and other surveys of college students across the country, Li Wei's analysis of the 2003 national comprehensive social survey data^[38], Tan Min vs. Fujian Six Questionnaire survey of freshmen in colleges and universities^[39], Liu Jingming's data analysis of China University Students' Learning and Development Tracking Study (CCSS)^[40], Yang Qian's data analysis of 2007 freshmen in higher education research database^[41] and Hou Longlong used the survey data of 2002 graduates' employment intentions and employment behaviors^[42] and other large-scale survey data. Although big data can reasonably explain the development of the current situation, it is difficult to explain the specific special circumstances. Therefore, this study selects a key university in Henan Province to conduct a sample survey of the family background, trying to explain the "double-class" What kind of family background children have entered the 'double-class university' question.

Second, research methods and research hypotheses

The investigation of the influencing factors of higher education enrollment opportunities can be divided into income status, education status and occupational status^[43]. In the study of localization in combination with China's actual situation, the social structure formed by the social system incorporates the administrative region, the urban-rural dual structure and the nationality into the influencing factors. For example, Li Chunling studies the household registration system and the unit system, and takes the parental occupation status as the indicator social capital and cultural level as the cultural capital and family income as the economic capital and family component as the political capital^[44]. In the study, Liu Jingming examined the influence of gender, political appearance, family affiliation, education level and professional class on the entrance opportunities of higher education^[45]. When Wen Dongmao studied the opportunities affecting higher education, he mainly chose family background, father's education level, gender, ethnicity and family address^[46]. Jiang Tianhui believes that when focusing on the intermediary mechanism of the family field, the family and parents play the main agencies and agents of the children's internal thinking system and habits respectively, the father's values, educational achievement expectations, parenting styles and learning environment

placement and learning process participation. Both will affect the acquisition of children's academic achievements^[47].

This study adopts father education values, educational achievement expectations, parenting styles, placement of children's learning environment and measurement indicators for children's learning process. In the traditional concept, the father as the family pillar, its social status is an important indicator to measure the total amount of family cultural capital, which is greater than the mother's influence. In addition, combined with the domestic mainstream research paradigm, the father's education level and occupational status are taken as important reference materials.

(1) The value of father's education, different job attributes will affect the educational values held by the social class, so parents of different classes have different views on the importance of education. In general, the upper middle class of society shows a long-term perspective on educational values, while the working class focuses on short-term categories. This part begins with the father's different values of education to draw the attention of different family fathers to children's learning.

(2) Expectations of educational achievement, fathers of different social classes have different educational values, and differences in educational values further influence the expectations of fathers for their educational achievements. Generally speaking, the parents of the working class do not have a complete and clear grasp of the future, so they do not have too high expectations for their children's educational achievement expectations, and the upper middle class can clearly realize that the educational achievements have a vision for the future, and this vision is Real-world benefits are not immediately available and thus hold high expectations for educational achievement.

(3) Fathers' parenting styles. Different levels of fathers have different educational values and educational achievement expectations for their children. Therefore, there are differences in the strategies of action adopted in the education of children. The upper-middle-class parents adopt a democratic management model for their children. To create two-way communication and a more equal dialogue, so children have the dominant power to raise and discuss problems, and it is more likely to produce an elaborated code; while the labor class adopts an authoritative management mode, which is more prone to unidirectionality. Parent-child contact and conversation are more likely to produce a restricted code. Therefore, B. Bernstein's code theory suggests that different families' parenting styles affect their children's language. Use and understand skills.

(4) Learning environment resettlement, the father of the working class is not fully aware of how to assist the children to plan long-term learning because of the lack of awareness of the importance of education. On the contrary, the upper middle class recognizes the importance of learning, this kind of cognition Make it easier for them

to create a positive learning atmosphere for their children. (Cohen, 1971: 98) "The middle class people use the middle class's way of life to trap their children's socialization. They are more inclined to carefully design children's physical environment, social situation and practice management. The toys surrounded by children are them. Fathers screened out by their educational values." The upper-middle parents in the society have built a positive environment for their children's learning. For example, the number of books in the family is rich, and children can help to control the abstract words and meanings with the help of books.

(5) Participation in the learning process, families of different classes have different opinions on educational values and parenting styles, and the family social background has a high impact on children's learning achievements. However, some experts and scholars believe that the existence of social mobility does not have an absolute relationship between the two. The important point when people who hold this view discuss the reasons is how children learn and inherit the values of the upper middle class, mainly focusing on the father. In the next generation of growth, attention is paid to children to transfer human capital.

On the basis of summarizing the above research, this paper takes the parental occupation and education level as the investigation object, and establishes five dimensions of values, educational achievement expectation, parenting style, learning environment placement and learning process, trying to explore the parental occupation and education level. Relationship with the above five. The sample data of this paper is from a questionnaire survey of students' family education resources in a key university in Henan. The survey is conducted by full-time students. Random sampling is used to select 144 students from different majors in the first to fourth year.

Research hypothesis:

- (1) The father's occupation and education level will affect the values of the children.
- (2) The father's occupation and education level will affect the children's educational achievement expectations.
- (3) The father's occupation and education level will affect the parenting style of the child.
- (4) The father's occupation and education level will affect the placement of children's learning environment
- (5) The father's occupation and education level will affect the participation of the children in the learning process.

Conclusion

Because the cultural capital operation index is highly correlated, the exploratory factor analysis method is used to obtain the factor analysis result (see Table 1). The

Bartley sphere test results are significant (sig=0.000), and the KMO value is 0.848, which exceeds 0.8, indicating Factor analysis works well.

Measurement index				
	Factor 1	Factor 2	Factor 3	Factor 4 or 5
29. My father is particularly concerned about my growth in learning.	.757			
23. My father is particularly concerned about the impact of the environment on my study.			.755	
15. My father will often talks to me about life and learning	.742			
31. My father will often discusses with me on some issues.	.739			
30. My father has been actively involved in my learning process.	.728			
21. My father will works hard to create a positive learning environment for me.			.709	
4. My father will uses all the resources around him to meet my educational needs.	.704			
14. My father often asks my opinions and suggestions during my daily life.				.665
17. My father will often discusses with me about future development.				.659
3. My Father believes that education can be used to obtain better opportunities.				.653
16. My father often accompanied me during my free time.				.651
12. My father has high expectations for my future educational achievements.	-.419			
7. My father is particularly supportive of my studies.				.649
2. My father has a long-term and clear plan for my future education.				.625
26. My father often urges me to study.				.624
32. My father don't care at all about my studies.				.621
11. My father is particularly focused on my academic performance.	-.483			
5. My father pays attention to my academic achievements.	-.463			
27. My father will helps me to improve my grades with my teacher.	.599			
22. My father will often takes me to party.			.589	
20. My father will often subscribes books or newspapers for me.			.436	
25. My father always helps me solve problems in my homework.	.551			
6. My father believes that education has little effect on personal future development.	.467			
24. When I was a child, my father often bought toys to develop my intelligence.	.588			
28. My father does not pay attention to my feelings in life.		.601		
8. During my study, my father supported me to participate in shadow education.		-.565		

18When I am at fault, my father often encourages me.	.449
34. I feel that the educational achievements and the efforts of working hard are more important than the influence of family's background.	-.040

Table 1. Factor Analysis Component Matrix (N=144)

The data results are roughly as shown in Table 1. After eliminating the invalid data, according to whether the factor value is greater than 0.4 as the demarcation point, the data is roughly divided into five dimensions, and the factor 1 problem 29.15.31.30.4.27.25.6 is more than 0.4, mainly It is related to the interaction between father and child, participating in the study of children, paying attention to the growth of children in learning, meeting the educational needs of children, contacting teachers to help children learn, and tutoring my homework. It can be regarded as the dimension of father's participation in the children's learning process. The factor 2 question is 12.11.5.24. The impact factor is above 0.4. It is mainly related to the father's educational achievements. It has high expectations for children's future educational achievements, pays attention to their children's academic performance, attaches importance to their children's academic achievement, and often purchases toys with increased skills. It can be regarded as the dimension of educational achievement expectation. The factor 3 is 28.8.18.34, the impact factor is above 0.4, mainly with the father in his life to impose his own will on the child, the father takes the initiative to report the child to the counseling class, the father is often encouraged Persuasion rather than corporal punishment of children, the achievement of educational achievements is greater than the predisposition It can be regarded as the dimension of parenting style. The factor 4 is 23.21.22.20 The impact factor is above 0.4. It mainly affects the influence of the father on the children's learning in the surrounding environment, strives to create a positive learning environment for the children, often takes the children to the party, and often gives the children Subscribing to books or newspapers can be regarded as the environmental placement dimension of education. Factor 5 is 14.17.3.16.7.2.26.32 The impact factor is above 0.4. It is mainly related to the father's opinions and suggestions in the daily life study, often on the future. Development and children's discussion, frequent accompanying children in their free time, very supportive children's learning, long-term clear planning for their children's future education, regular supervision of their children's learning, fathers do not care about their children's learning, can be regarded as the dimension of educational values.

Correlate the dimensions of the re-divided dimensions after the above factors are analyzed. The five points are calculated in turn, and the total score is compared with the father's education level and the father's occupation. The final analysis is to compare the father's education level and father's occupation with the five dimensions. In the univariate analysis, the last column shows the relationship between the independent variable and the entire dependent variable dimension, and determines whether there is a significant difference based on the relationship between the sig value and 0.01 and 0.05.

(1) The father's occupation will affect the children's educational values, but the father's educational level will not affect the children's educational values.

The father's occupation will affect the educational values of the children. With the social status of the father's occupation, the children's contact and possession of learning resources will be relatively more, the opportunities for enrollment will also increase, and the father's future learning plan for the children will be clearer, verifying the society. The middle and upper classes have a clear understanding of the development of education, and can have a long-term planning and vision in education. Father's occupation, as a kind of cultural capital, accumulates in the family and can influence the cultural capital of the next generation through the transmission of cultural capital within the family capital. As an initial influence on the next generation, the father's career will affect his father's educational values.

However, the educational level of the father does not affect the interpretation of the children's educational values. It is presumed that the current society attaches more importance to education, so that both the upper-middle parents and the working-class parents in society value the role of education. As an important subsystem of social development, education plays an important role that cannot be ignored. In the social function of meritorious education, we can see the important social functions of education. The function of education change enables people to improve their self-quality and develop their potential through continuous education. Education promotes the development of individual labor and promotes individuals. Politicization and communication culture play an important role; secondly, the flow function of education. The flow function of education refers to the individual adjustment and change of social individuals through various social, social and industrial positions. Talent, to achieve your own life goals. In the father's educational values, the father's concern for the vertical flow of education is greater than the concern for the horizontal flow of education. Because the vertical flow of education mainly refers to the fact that members of society can communicate under different social levels (generally expecting the rise of the class) under the training and screening of education, that is, education makes the class transition into reality.

(2) The father's occupation will affect the children's educational achievement expectations, but the education level does not affect the children's educational achievement expectations.

In the domestic research on education acquisition, although there is a relationship between family background and education acquisition, it has not been elaborated from the perspective of educational expectations, mainly focusing on education diversion, cultural capital, and social capital. In general, the impact on educational achievements, the working class does not fully recognize the long-term characteristics of education itself, pay attention to current interests, and make them ignore the long-

term nature of educational achievements, so they do not hold too much in their educational achievements. High expectations. On the contrary, the upper-middle class parents clearly understand the importance of educational achievements. They understand that educational achievements have a future vision. This vision points to the long-term process of learning outcomes, and it is not possible to obtain benefits immediately. Shows influence. It can also be understood that in the intergenerational flow, the superior social status of the fathers needs to be better maintained through the education that is transformed into children. Therefore, in the process of children's education, parents with higher socioeconomic backgrounds have stronger expectations for their children to go to college. Especially parents who have had higher education experience can provide their children with university life learning information and encourage their children to have school expectation. At the same time, the social status of the father's occupation can also create more support conditions for the children. This result is consistent with Wang Haoqin's results^[48].

In the current survey, many scholars believe that there is a correlation between father's occupation and father's academic qualifications and educational achievement expectations. However, this survey found that father's occupation has significant significance for educational achievement, but father's educational level and educational achievement have not been achieved. Too high correlation. Parents with higher academic qualifications hope to further extend their own class advantages through educational achievements, while those with lower academic qualifications want to achieve higher levels through academic achievement; or because the respondents are in the same school, so the students grow up in the family environment. Similarly, the father's emphasis on education will not change due to his father's education. In the father's occupation, it can be seen that there is a significant significance between the two. The more the father's occupation is in the professional ranking, the more attention is paid to the achievement of the children's educational achievement expectation, and vice versa.

(3) The father's occupation and education level will affect the parenting style of the child.

The father's occupation or academic qualifications have an important influence on the father's parenting style. The survey data shows that the higher the father's education and the more democratic the family atmosphere, the reason why this is because the democratic family is more than the authoritarian family. It is easy for students to develop good study habits and quality, such as hard work, diligence and study, and these good behaviors are more likely to make children's academic success. At the same time, children with a democratic family atmosphere are more courageous and courageous in their style of acting. In a certain sense, the family atmosphere is somewhat unique compared to other survey factors because it is more controllable than other factors. On the other hand, in Bernstein's language coding theory, it is believed that the father's language structure has an important influence on the child's

language expression and logical structure. In Bernstein's language coding theory, the upper classes in society tend to be mental labor, and they are accustomed to using sophisticated language coding. The labor class prefers manual labor in their work and is accustomed to using limited language coding. In school education, the knowledge transmitted by the school is a precise language code, which is more in line with the habits of children in the upper classes of the society. Therefore, it is more advantageous than the children of the working class in school learning, and it is easier to achieve academic achievement. Students have extensive experience before they arrive at school, so this is not the difference in academic achievement caused by congenital deficiency. However, Bernstein pointed out that the code theory is not an analysis of students' differences in language and ability. He mainly explained that the difference in family background and the difference in the environment of children's growth led to different language coding theories. The deeper level is due to the code. The hidden rights and controls behind it create unequal education. Different family culture capital will make a difference in children's future development, and family culture capital plays an important role in the early stage of children's growth. Parents of high-cultural capital families will first pay attention to the acquisition and accumulation of children's cultural capital in the attitude of parenting. Secondly, parents will make full use of their advantages in cultural capital to prepare for the mastery of children's knowledge in advance.

(4) The father's occupation and education level will affect the placement of the child's learning environment

The father's values will influence the action strategy, and whether the father's long-term education value directly affects the role of the father in the children's learning process. More deeply, the father will show different action strategies for the child's learning situation. In the survey, it was found that parents who read in key universities often gave their children a good learning environment. Whether the father will subscribe books or magazines for children, or the number of family collections is one of the important indicators for measuring family cultural capital. Children can get in touch with their own reading materials in a timely manner, which not only enriches knowledge, grows talents, enhances conservation, but more importantly, It can improve children's grasp of language logic and understanding of abstract concepts. Chen Haijun quoted in Western studies in 1999: the number of family books in the upper class is often higher than that in the labor class, and the carrier of books and periodicals can significantly improve children's grasp of abstract graphics and words, so academic achievement is significantly higher than Children of the working class. Moreover, the upper middle class of society is in an open social network system, which will recognize more middle-class people in society and expand their contacts and influences, exchange information, experiences and ideas, obtain more useful information, and further Expand horizons. On the contrary, the working class is in the opposite situation, and the objects they are exposed to are limited to relatives and friends, and these people are largely homogenous, especially in the middle and lower

classes in the professional class, so they cannot bring Information, experience, and ideas for expanding your business. This contrast reality, the open form allows the upper middle class of society to obtain more and more timely information, and this information will help them obtain more valuable information. On the contrary, the closed form represents the labor class. There are ways to create an auxiliary effect. Intergenerational cultural capital transfer has largely led to unfair educational achievements. Li Lulu found in the survey that most of the children who dropped out of school came from the cultural level of the working class, while the children of the family with relatively high education level rarely lost school and achieved good academic achievement^[49]. Moreover, the survey further shows that the dropout of children is not closely related to the family's economic situation, but directly linked to the father's cultural level and education level. In addition, Linnan's research found that children's educational resources are more acquired through family-owned social capital, largely not through their own efforts and talents, but with social development, resource accumulation, social resources gradually It shows a greater role, and after a certain period of time it will be carried forward to the next generation of non-self-factors^[50].

(5) Father's occupation and education level will affect the participation of children in the learning process

The above analysis indicates that educational achievement expectations can influence parents' formal or informal learning situations for the next generation. Different learning situations are derived from the different values that parents hold about education, and values influence their action strategies. Although the family social background has an important impact on children's educational achievements, some experts and scholars believe that there is no absolute relationship between the two. The reason is that no matter what kind of social class, social mobility is carried out, so how the next generation learns The values of the upper and lower classes of society are particularly important. Coleman believes that the transfer of such values is realized in the interaction between people, and the long-term time is enough for this value to be transmitted, so the family background is not the only guarantee for the success of education, but the time for parents to pay attention to the children, that is, to participate in child learning. time.

The relationship between the father's occupation and academic qualifications and the participation of the children's learning process is strong, that is, the higher the father's education, the more time he spends on the child, and the amount of time parents spend on the next generation of learning will also show a significant impact on the child's academic performance. The influence of the child's long-term concern will have a positive effect on the child's learning. On the contrary, if the child does not pay much attention or even pay attention, it will have a negative effect on the child's learning. This different behavioral orientation often stems from different parental values, and the values and social class backgrounds have a certain intertwining effect.

Specifically, the upper-middle-level parents and the working-class parents present long-termism and short-termism in education, so the difference in social class will affect the time investment of the above-mentioned parents in the children's learning process. Intergenerational cultural capital transfer affects the quality of education and educational achievements acquired by future generations. Generally speaking, families with strong cultural capital and fathers with relatively high education level have stricter management and requirements for future generations. The educational achievements of future generations, actively participating in the study of future generations, will cost a lot of money and effort in manpower, material resources and financial resources, and the more educational resources that future generations can use. Family background has a great influence on children's academic achievement and is consistent with the research conclusion. The influence of family background on children's academic achievement is mainly through family's use of their social and economic resources to compete and purchase quality educational resources (key schools within the system). And educational services on the market, which in turn affects children's academic achievement^[51]. Parents influence their children's academic achievement through their educational participation and behavioral support for their children's learning interests and learning habits.

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Teacher Agency in Mother Tongue: From Social Practice to Legislation

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

Drawing on the lived experience of teachers in implementing the Mother Tongue Based – Multilingual Education (MTB-MLE), this research offered a social analysis of the practice of mother tongue employing Practice Theory as a frame of analysis. This framework suggests that shift of language policy in the Philippines from bilingual to multilingual elucidates culturally diverse ways of reconfiguring the language policy, emphasizing the roles of social practice and teacher agency in policy appropriation. The history of mother tongue as a new language policy in basic education from grades 1 to 3 mirrors how a contextual use of language reflects the issues of power and negotiation of identities that enabled mother tongue to emerge as a key element in language policy within mainstream education. Following the direction on language policy in basic education, teacher agency in the implementation of MTB-MLE seeks to respond to the contextual needs of the learners on the one hand, and meet the demands of globalization on the other.

Keywords: teacher agency, mother tongue, education reform, Mother Tongue Based – Multilingual Education (MTB-MLE)

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Introduction

Mother Tongue as an Education Reform

Education is directly and indirectly associated with globalization structures and processes. It involves the use of a language that facilitates in meeting the goals of the state and education. Thus, the issue on what language to legitimize as a medium of instruction reflects not only the role of a language in the transmission of knowledge but also its political and social functions in globalization. The institutionalization of Mother Tongue as a medium of instruction for grades 1 to 3 in the recent education reform in the Philippines or the K-12 curriculum shows a political response to the question: What language enables Filipino learners to learn values, knowledge and skills to adapt of globalization?

From a historical viewpoint, Filipinos history of colonization (i.e. American Occupation in the Philippines) has favored the use of bilingual policy (English and Filipino) in education. English facilitated the introduction of public basic education and the construction of the nation –state. Philippines adopted the American government model. In turn, a national identity was necessitated in the process of state formation. Such political shift has relegated non-Tagalog languages as secondary languages in the whole literacy development (Tupas, 2011). In some instances, language policies contradict the use of language in practice. Philippines as a multicultural state has many languages which represent diverse Filipino identities. In practice, the use of home language is still prevalent in learning in spite of bilingual policy in Philippine education system.

Thus, the legislation of the Mother Tongue as a medium of instruction and as a separate subject from Grades one to three has redefined the context of educational reform through the collective exercise of agency of on-the-ground actors and sustained efforts of mother tongue advocates. This development gave primacy to Mother Tongue as an effective medium of teaching and learning especially in early years of schooling. Within this context, this paper seeks to investigate how diverse ways agency is exercised in teaching the mother tongue as a crucial aspect in policy formation.

Theorizing Teacher Agency in Mother Tongue

Building on Sherry Ortner's Practice theory, the development of MTB-MLE reflects the dialectic relationship between the structure (policy) and agency (human practice). Such dialectic relationship elucidates that MTB – MLE as socio-cultural product is a counter hegemonic response to disabling features of bilingual policy in education in a multicultural state. This implies that the hegemony of foreign language in Philippine education was not totally encompassing. Local actors' socio-cultural context, interest, history and experience have provided space for exercise agency. Viewing the legislation of mother tongue from practice to the implementation of mother tongue has opened a new perspective on educational reform that recognizes power from human practice that is capable to induce change within Philippine education system.

The invincible practice of mother tongue in spite of the three decades of bilingual policy in basic education shows diverse of literacy practices Filipino learners which are embedded multicultural and fluid identities of Filipino learners. McCary L. T. & Warhol L. (2011) maintain,

Like orientations and attitudes, ideologies are not about language per se, but rather about individual and collective identities and power relations (pp. 182).

Indeed, teachers at the forefront of MTB-MLE implementation, exercise their agency in order to create meaningful language learning that will respond to contextual needs and experience of diverse Filipino learners.

Methodology

A case study method was employed to explore the lived experience of mother tongue teachers in relation to the implementation of the K-12 reform. Specifically, the contextual exercise of agency was examined to look into various interpretations and applications of mother tongue in multi settings. Through narrative inquiry, the researcher was able to generate themes which were further analyzed to theoretically frame emergent issues and debates in the application of mother tongue as a medium of instruction.

Teacher	Age	Gender	Social Position	Years of Service	Type of School
1	40	Female	Community teacher	8	Community
2	33	Female	Grade 2 teacher	10	Public
3	48	Male	Grade 3 teacher	18	Private (Non-sectarian)

Figure 1. Profile of the Participants.

This study involved three teachers across Metro Manila who teach mother tongue as a subject and as a medium of instruction. The heterogeneity of school types enabled the researcher to look into the diverse ways and contexts of exercising agency in teaching the mother tongue.

Exercising Teacher Agency

At the macro-level, Ortner (2006) purports that human practice is influenced by structures (i.e, bilingual policy, history of colonization and globalization. On the other hand, human practice negotiates the policy that paved the way for the implementation of MTB-MLE. . For Giddens, structure is constantly created through collective agency and agency takes inspiration and resources for further action (VandenBroek, 2011). At the micro level, agency mediates and is mediated by structure, history, context, forms of capital, agency of other actors, constraints,

personal goal and advocacy, and relationship as extracted in this study. This is shown in table below.

How is teacher agency reflected in the teaching of MT?	Teacher		
	Community	Public School	Private
Understand context	Understand the social, historical and cultural context of the community (i.e., learners are members of Indigenous Peoples, they are migrants who left their province due to issue on conflict and peace and order, some family members have history of , late schooling, and illiteracy, the purpose to learn a language is to be integrated in their new community	Understand the family context and nature of pupils' learning difficulty, learners have diverse reading problems	Understand how the system works and why it operates in a hierarchical manner
Navigate resources	develop support system in the community (interpreter in the community, pupils and parents) pursue graduate studies	tap social networks outside their school, spend personal money, trade learning devices with fellow teachers pursue graduate studies	pursue graduate studies
Redefine values and ideologies	Any individual can be illiterate in other communities, community, redefine the meaning of students' capacity and success and deficit family model (parents try not to reproduce history of school failure)	No specific learning theory exclusively fits a given context, you have to create your own theory according to the needs of learners	MT is not just about what language should be used in instruction. It is also making the content socially situated

Reconfiguring Social Practices	Practice the following: no assignment policy, individualized instruction, extension of hours before classes and after classes, use <u>Marungko</u> Style, home visits, develop culturally sensitive materials	Practice the following: No project Policy, develop individualized reading program and materials	Alter the schedule of MT and Filipino (the same teacher should teach both subjects),
Negotiate power relationships	Secure the trust of community people,	involve parents in remediation program,	sustain cordial social relationships with colleagues and parents, play with the system

Figure 3. Teacher Agency in Mother Tongue

Drawing on Ahearn (2001) on language as social action, mother tongue in relation to the K-12 reform illustrates how human practice reproduces and induces change within Philippine basic education system. Agency and culture are intertwined and represented in language. This resonates with the idea that the use of Mother Tongue (MT) is an assertion of cultural identity. For Davies (1991), asserting cultural identity is an act of authority. It involves an act of perpetuating collective identity and values. Thus, using mother tongue is not only an issue of using a language that facilitates effective instruction, but also an issue of asserting one's cultural identity. To speak of one's mother tongue is to speak and assert one's collective identity. McCarty and Warhol (2011) maintain,

Language reclamation is not solely or even primarily about language per se. It is revitalizing an endangered language is an affirmation of identity, community-building, and healing from past injustices (pp.189).

Moreover, Lee (2009) argued that despite competing ideologies and debates in language, many youth demonstrated a "critical indigenous consciousness," actively transforming the existing language policies in their homes and communities. This argument informs that human practice involves that use of language ingrained in indigenous ways of knowing, feeling and accessing to community capital and experience. There are certain applications of language in the community that allows community actors to transform the language to enable their community experience.

In certain occasions, formal language learned in school becomes irrelevant in the community if it deters an individual to establish community relationships that will define his identity and social position. These reconfigurations of language reflect an act of asserting authority that is inseparable in creating one's identity within a community where an identity is historically and culturally grounded.

This affirms that the practice of mother tongue is an exercise of agency that allows a group or individual to access to social and political power in order for them to make and remake an identity within the challenges and constraints of globalization. Previous language policies failed to incorporate contextual analysis of human practice.

Mother tongue as a human practice mirrors an issue of how power that has been silenced by colonial and neoliberal policies in education. This assumption resonates with Ortner's (2001) notion of agency of power where agency is exercise when there is domination and resistance.

Moreover, one's intention is exercised in mother tongue (i.e., personal or collective) which Ortner (2001) calls agency of intentionality. It is important to note that the individual project is mediated by the actors' personal history. Participant 1 narrates, I also experienced marginalization when I was a child and social inequality continues to disenfranchise the children I am serving today. This implies that her personal history and personal goal are concretized in the exercise of agency at present. To address this project, McLaren (1989) maintains that, teachers must function as more than agents of social critique. They must attempt to fashion a language of hope that points to new reforms of social and material relations attentive to the principles of freedom and justice. In this argument, McLaren enunciates that a teacher is social and moral agent. In this regard, the exercise of agency in MT has a moral purpose to answer, for what purpose and for who is the exercise of agency?

As participant 1 suggests, my goal is for my pupils to express their voice in their family and community. Additionally, participant 2 expresses, *kung matututong magbasa ang bata, hindi siya maiiwan*. (If a child has learned how to read, s/he will not be left behind)

Mother tongue is a social and political project that results to the attainment human empowerment. As a social and political project, Giroux maintains, the link among language, knowledge and power, the teacher must first dignify his or position by recognizing that the foundation for all human agency as well as teaching is steeped in a commitment to the possibilities of human life and freedom.

The practice of mother tongue shows how actors strategize agency to achieve their project. Sewell (1991) suggests agency is the ability to apply creatively schemas in social situations and resources are embodiment of schemas. He maintains understanding schemas and the application of resources is dependent on the context. As narrated by the actors understanding of the environment, redefining social practices and navigating resources are crucial in understanding the power of agency. Resources carry diverse meanings depending on their application in the environment. These allow them to diversify the practice of their agency in order to achieve their agency.

The existing notions of agency lack the discourse on reflexivity. Reflexivity of agency illuminates the actors' redefinition of their values and ideologies in order to build up enabling experience as part of the actor's community integration. In this process the individual, questions his/her own value system as part of negotiating with on the ground experience and redefines it in order to successfully exist within the community.

Participant 1 suggests, I need to redefine my views about schooling and school success. I used to think that ability to write and speak the dominant language defines one's intelligence because I was taught that way but with my experience in the community elucidates otherwise. There are forms of knowledge and skills taught in formal schools that are not relevant in the community. I have also transcended the idea that school failure is attributed to family deficit because as I observe with the parents of my pupils, they resist family history of school failures. On the other hand, participant 2 explains, No specific learning theory exclusively fits in the context. You have to create your own theory according to the needs of the learners.

These narratives also contradict to Bourdieu's notion of habitus that is deeply internalized structured, powerfully controlling and largely inaccessible to consciousness (Ortner 2006). Teachers as constituted by their struggles to legitimize MT have demonstrated that they are not passive agents but authors of enabling human practice. This suggests Giddens and Scott's understanding of human subjects that emphasize they are partially knowing subjects. Actors are able to reflect to some degree on their circumstances and by implications develop a certain level of critique and possible resistance which Giddens's refers to "dialectic control" as an integral part in the process of making of the agent called "structuration" (VandenBroek, 2011).

Indeed, the diverse ways of exercising agency in different social contexts (i.e., community school, public school and private school) reflect that it is situated and mediated by existing forces within the context including the larger structures that constitute the context. This rest on the notion that agency is not autonomous; it is context dependent and always subject to social constitution and redefinition. Following these arguments, this paper also intends to challenge the idea equating agency to humanness that tends to describe it as autonomous. Participant 1 shares that , agency is context dependent.

In contradiction to the chodial triad model of Emirbayer and Mische, the contextual experience of actors in navigating the practice of MT through their agency illustrates a different framework. In their analysis, the past (life history, professional history) the present (cultural, structural, material), and the future (short term and long term goals) influence agency which reduces the analysis to unidirectional relationship between agency and social factors. In this sense, agency mediates these factors and the relationship among these factors. This implies that the relationship of social factors and agency is not linear, chordal and deterministic. It is fluid and dynamic where agency at the center of the framework navigating social factors that constitutes agency. In this analysis, it is also important to implicate in the discourse that teacher agency is mediated by the agency of different actors within the community.

Participants 2 laments, The pupil perseveres when s/he feels that s/he is being valued. In effect, their parents also persevere when they see the progress in the child. This discourse enunciates that the exercise of agency is imbued with notions affect and care.

Conclusion

My exploration of agency in this paper has challenged and redefined my own understanding of agency and has allowed me to reflect on ways I exercise agency in the context where I operate. Reflecting on teachers' experience of navigating the practice of mother tongue through their agency, has informed me of its social and political functions in which the choice of mother tongue as a language speaks of indigenous rights to participate in mainstream education and broader society.

It is situated within the context of power relationships that is subject to social constitution and redefinition (involving the issues of race, gender, mobility, migration and post colonialism). In this sense, mother tongue is a product of the individual and collective agency that operates within the context of power relationships in a field fraught with domination and inequality. Hence, speaking the mother tongue is an assertion of one's authority, accessing the cultural capital of the community and reflecting one's cultural identity and collective history.

Drawing on the on the ground experience of the participants in this study, agency is viewed as a complex and subjective concept. It is contingent on human experience and the context where human experience is grounded. Its polysemous meanings and subjectivity in relation to the practice of mother tongue elucidates culturally diverse ways of navigating power relations and human and non-human resources in order for mother tongue as a political project to be legitimized.

Furthermore, agency is relational, in a sense that it is mediated by agency of actors by whom and for whom agency is exercised. Agency is relating to self, actors within the community and structures. Central to the power shift of language from universal to local is role of teacher agency to negotiate, navigate and reconfigure power relationships. Unlike other reforms, mother tongue stemmed from the bottom that has challenged and redefined the language policy amidst the demands of globalization. The power shift in language policy from universal to local speaks of what human practice and experience have to contribute in shaping and reshaping the structure that would respond to the contextual needs and of local actors vis a vis the political and cultural challenges of globalization. Hence, the trajectory of postcolonial language politics of Mother tongue in the Philippines should answer the following challenges and issues: how can mother tongue be reconfigured and navigated in order to meet the demands of globalization? To what extent can mother be an effective language in the educative process? At the forefront of implementing the mother tongue, how can teacher agency contribute to the empowerment of mother tongue? As a new language policy, how will it illuminate linguistic justice in terms of protecting the marginalized against the disabling effects of globalization?

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***Multigenerational ESL Classrooms in Japan:
An Exploration of the Experiences of Adult Students***

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

Japan is experiencing the benefits and problems that come with having the world's fastest aging population. With this aging process comes an increase in the demand for social and educational services by the elderly. This is fast leading to a change in the composition of classrooms at English conversational schools across the island. Increasingly, these classes are becoming more multi-generational. Kobayashi (2018) points out that many adults are now returning to eikaiwas (English conversational school) in order to prepare for TOEIC exams and other professional related tests as well as to socialize. This is especially pertinent among non-traditional learners who have more discretionary time pre and post retirement. University students, who are regarded as more traditional learners, also flock these schools in order to gain leverage in their university exams and so change the demographic characteristics of these classes. In corroboration, Takahashi (2013) illuminated the fact that adults are returning to eikaiwa institutions because of the socializing component that drives the learning experience. This research is a qualitative study that explored how adult students, ranging from 18 years old to 72 years old, viewed their experiences in a multigenerational English conversational classroom at several English schools across Japan. In these classes, faculty encouraged social interaction which complimented the learning experience. This study assessed these adult learners' perceptions of how the development of relationships among different generational cohorts affected the dynamics of the classroom and impacted the learning experience. It also examined how these relationships were encouraged or inhibited by students and faculty. The experiences of Japanese adult students were central to this study and the researcher used a qualitative, basic interpretive research method with a descriptive case study design. The results were analyzed using a thematic approach. The first theme focused on the first impressions that students had of their multigenerational classroom environment. It highlighted the perceived differences between the generational cohorts. The second theme dealt with recognizing differences and addressed how students came to grips with the differences in their classrooms and how they sought to overcome them. The final theme dealt with adapting and relationship building and looked at how students formed relationships across the generational divide. In the end the research concluded that multigenerational classrooms add to the learning experience of students and in the end age is not as big a barrier as some may claim it to be.

Keywords: Andragogy, ESL, Multigenerational classrooms, Social Constructionism, Ekaiwa, English, Japan

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Introduction

Within the last decade there has been an influx of non-traditional students attending eikaiwas across Japan (Gromik, 2017). The author argues that this may be due to increasing disposable income for older citizens, declining birth rate, increased discretionary spending and the impending Tokyo 2020 Olympics. The author highlights that approximately 32% of clients in eikaiwas across Japan can be characterized as non-traditional learners aged 40 years and older. In tandem, Gordon (2016) pointed to the three fundamental structural changes in Japanese society that continue to have a significant and direct effect on lifelong learning and increasing enrollments at eikaiwas: aging population, economic and technological changes and increasing internationalization. The author postulated that Japan's rapidly aging society, due to life expectancy and a declining birthrate, is creating a growing elderly and retired population with more time available for educational and cultural pursuits. The author predicts that by the Olympics in 2020, the proportion of elderly citizens (aged 65 years and over) will be 27% of the total Japanese population. This represents 33 million persons and so this societal change will inevitably reflect in the composition of English classes at English conversational schools across the island. Because there is an increase in older adult students returning to the classroom, the generational mix in the classroom is also changing.

Even though this research focused on adult students as a single group it is pertinent to point out that this group has often been subdivided into non-traditional and traditional students (Bye, Pushkar, & Conway, 2007; Cochran, Campbell, Baker, & Leeds, 2015; Goncalves & Trunk, 2014; Jameson & Fusco, 2014). Non-traditional adult learners have different experiences and backgrounds when compared to traditional students in a classroom. They may have more complex backgrounds and different educational histories as well as wide-ranging maturity levels (Kasworm 2009). Traditional learners, who are recent graduates of universities or young working professionals, may be more accustomed to learning in a formal classroom atmosphere and may be more computer literate and technologically inclined. Yet, their life experiences may be limited due to their age. Both groups are now being combined in the same classes in the Eikaiwa classroom, in higher education settings but there is limited literature foundation that provides information on to how to teach learners in a multigenerational classroom. This is further exacerbated by the sparse literature that addresses the experiences of these adults in a multigenerational classroom, specifically Asian/Japanese adult students. This is but one of a very few researches that embeds the investigation in an ESL context.

This study addressed how adult students from three or more generational cohorts in Japan perceive their experiences in a multigenerational English conversational classroom where interaction and socialization are fundamental to the learning process. The study explored the learners' perceptions of their classmates who are both within and out of their own generational cohort. It assessed how these learners adjudged the development of inter-relations based on age differences and generational affiliation and how these relationships affected the classroom climate and learning; how the relationships between adult students grew and evolved. How adult students perceived and interpreted their experiences in a multigenerational classroom was also fundamental to this investigation.

Research Questions

This study was guided by the following research questions:

- (1) When inter-relations develop among students across different generations in an ESL classroom, how do these relationships grow and evolve?
- (2) How do these inter-relations impact the students' learning experiences within the ESL classroom?
- (3) What are the students' impressions of the classroom dynamics of a multigenerational ESL classroom?

Review of Literature

Andragogy

One model of education that was useful in this study is Malcolm Knowles' model of andragogy. Andragogy is a Greek word from the root agogus that means to lead. Andra is translated as the word adult which Knowles (1980) used to define Andragogy as "the art and science of helping adults learn, in contrast to pedagogy as the art and science of teaching children" (p.42). Knowles (1980) proposed a "new label and a new technology" of adult learning to distinguish it from pre-adult schooling (p. 351). Merriam and Caffarella (1991) revealed that andragogy is the best known theory of adult learning even though it has caused more controversy, philosophical debate, and critical analysis than any other concept, theory or model. According to Merriam, Caffarella, and Baumgartner (2007), Knowles' perspective on andragogy is based on six main assumptions:

1. Self Concept: Adult learners are self-directed, autonomous, and independent. Knowles suggested that the classroom climate should be one of "adulthood" both physically and psychologically.
2. Readiness to Learn: Adults tend to be ready to learn what they believe they need to know.
3. Role of Experience: Repository of an adult's experience is a rich resource for learning. Adults tend to learn by drawing from their previous experiences
4. Orientation to learning: Adults learn for immediate applications rather than for future uses. Their learning orientation is problem-centered, task oriented and life focused.
5. Internal Motivation: Adults are more internally motivated than externally.
6. Need to Know: Adults need to know the value of learning and why they need to learn.

Pappas (2013) explained that in 1984 Knowles suggested four principles that should be applied to adult learning. These are:

1. Adults need to be involved in the planning and evaluation of their instruction.
2. Experience (including mistakes) provides the basis for learning activities.
3. Adults are most interested in learning subjects that have immediate relevance and impact to their job or personal life.
4. Adult learning is problem-centered rather than content oriented.

Multi-generational Classrooms

Elam, Stratton, and Gibson (2007) believed that a generation can be denoted by a specific time period, shared experiences, a common history, and shared values and behavior. It is not uncommon to see an increased mixture of different generations in institutions of higher learning within the last decade. American Council on Education (2015) expressed that within the last decade, an even greater influx of non-traditional students in higher education has occurred. Kodira and Watanabe (2013) acknowledged the changing generational structure of classrooms in Japan. They pointed out however that this change is not as rapid as in other developed countries. With this recognized change in the age and generational blend in the classroom comes a recognition that the methods used to reach traditional and non-traditional students will have to be fused to ensure a worthwhile learning experience for all learners. The needs of the adult students in the multi-generational classroom along with the barriers and obstacles that adult students face have been recognized in the literature.

Authors like Dauenhauer, Steitz and Cochran, (2016) highlighted the present generational structure in the classroom, others such as (Sanchez and Kaplan, 2014; Reichenbach, Hagen-Jokela, and Sagor, 2013; Young and Seibenhener, 2018) explained teaching strategies that should be used for each generation, and yet others like (Kleinhans, Cakradhar, Muller and Waddill, 2014; Howard and Henry, 2013; Kasworm, 2015) revealed the barriers and difficulties that may be encountered by teachers and learners in these types of classrooms. Levonius (2015) explained that there are currently four generations that may be found in classrooms today with the last three being the most prevalent. These are: the Silent Generation (born mid-1920s to early 1940s), Baby Boomers (born early 1940s to early 1960s), Generation X (born early 1960s to early 1980s), and Millennials (born early 1980s to early 2000s).

One of the leading authors on multigenerational classrooms is Kasworm. This author contended that students from older generational cohort would maximize the utility of the class time to achieve the most from their interactions with faculty and peers and they tend to use the classroom as setting the stage for meaning making (Kasworm, 1990). In a later publication, Kasworm (2015) reasoned that there is not a “monolithic adult student identity” (p. 16), but that these adults bring to the classroom different experiences, beliefs and actions contributing to their student identities. Students in the multigenerational classroom view their identity as interrelated but “not necessarily embedded within their age and maturity” (p.16). Students from older generational cohorts view younger students from three different frames: academic quality, positive relationships and negative relationships (Kasworm, 2009).

Intergenerational Learning

Sanchez and Kaplan (2013) postulated multigenerational classrooms in formal higher education may constitute windows of opportunity to rethink the practice of teaching as far as they epitomize venues for triggering processes of intergenerational learning. The authors asserted that age differences among students and instructors can be framed in ways that contribute to content and interaction rich intergenerational teaching-learning process. Wright and Lee (2014) explained that intergenerational learning has been unambiguously considered a significant part of lifelong learning

and as such intergenerational learning has become an important concept as the demographics of societies continue to change.

Intergenerational learning has its distinctive feature in the consideration that it is learning produced through intergenerational relationships that are understood as social relations mainly characterized by an awareness of generational membership (Sanchez & Kaplan, 2013). The authors also believed that an awareness of existing differences and/or commonalities between generational positions may lead to intergenerational solidarity, conflict or ambivalence or to any other intergenerational arrangement, including maintenance and or transformation of previous intergenerational status quo and that any of these options is equally interesting in terms of actual learning and so none should be discarded when implementing intergenerational learning initiatives. A strong argument has been made for including generational issues when working with adults and multigenerational classrooms (Field, 2013; Pinto, 2011).

In intergenerational learning, interactions are fundamental to shaping a classroom atmosphere that is conducive to learning. This interaction may not always be positive and may not always produce the desired results. Differences in age, outlook, and experience may foster an environment where unhealthy behaviors may flourish. Gerpott, Lehmann-Willenbrock, and Voelpel (2017) contended that while there are learning differences between generations; generational differences in learning styles may be impacted and even changed by interaction in the classroom among participants.

Adult Education in Japan

Ogden (2016) highlighted that Japan's Ministry of Education, Culture, Sports, Science and Technology (MEXT) takes the position that lifelong learning, or *shougai gakushuu*, encompasses not only structured learning through schooling and social education but also learning that takes place through sports, cultural activities, hobbies, recreation and volunteer activities. The author explained that educators and the general public use many different terms to refer to activities in the realm of adult education. Social education and lifelong learning are the terms most frequently used to describe adult educational activities. Rausch (2013) posited that from the late 1940s to the mid 1980s social education (*shakai kyouiku*) referred to organized educational activities for adults and young people. Ogden (2016) argued that according to MEXT, lifelong learning comprises two main aspects in Japan which include the concept to comprehensively review various systems including education in order to create a lifelong learning society and the concept of learning at all stages of life. The MEXT believes that in order to create an enriching and dynamic society in the 21st century it is vital to form a lifelong learning society in which people can freely choose learning opportunities at any time during their lives and in which proper recognition is accorded to those learning achievements. The history of contemporary adult education in Japan can be traced back to 1949 through the introduction of the Act for Adult Education (Fuwa, 2013). This law aimed to contribute to the building of a democratic Japanese society following World War II. It encouraged the establishment of adult education centers (*kouminkan*) in communities throughout Japan. Fuwa (2013) noted that the idea of lifelong education was not introduced in Japan until the 1970s. This meant that adult education was not formalized prior to the 1970s. The author opined the fact that even now in Japan, older adults returning to University or college

classrooms is a rarity, and so the country is ranked the lowest in the developing world for adults aged 40 years and over returning to formal education. The author lamented that the concept of lifelong learning in Japan has more to do with informal learning than formal learning through institutions of higher learning.

Ogden (2013) corroborated this fact by highlighting that the establishment of Lifelong Learning Councils at the national and prefectural levels across the island supported the development and promotion of lifelong learning mainly through informal measures. Ogden (2013) pointed out that the recent MEXT survey noted that the types of participation in lifelong learning were mainly music, fine arts, flower arrangement and dance and that formal learning and foreign language acquisition accounted for only 4.4% of respondents. In agreement, Rausch (2013) concluded that adult learning in formal education is still an area that is not well developed as the concept of lifelong learning in Japan has a more social education appeal. However, the author added that MEXT is working to enable older adults to pursue post secondary opportunities. The author noted that for MEXT, adult learning in Japan and the concept of lifelong learning centers on the need to create a social environment in which appropriate value is placed on learning achievement at all stages of life, regardless of whether the learning is accompanied by formal academic credentials. Yamaguchi (2014) revealed that customary entrance examinations into institutions of higher learning have deterred older adult students and the limited provision of non-degree courses at universities across the island has also served as a major deterrent and continue to inhibit the government's thrust in enhancing formal adult education initiatives on the island. One cannot negate the effects that culture has on the success of lifelong learning efforts in any country. According to Stephens (2013), lifelong learning in Japan has not been successful in so far as building a learning ethic, one that prizes learning, teaches creativity, includes everyone and is seamless primarily because of the highly stratified nature of Japanese education culture. Adult education in Japan, he stated, is clearly a low priority and of low status. The author also highlighted that businesses provide almost no support to employees to continue their education in institutions of higher learning. Ogisu-Kamiya (2013) revealed that despite the promotion of adult learning by the Japanese government, the majority of Japanese society continues to distinguish between two distinct stages in life: the learning stage prior to early adulthood and the working stage after university or high school graduation. Japanese academic career society does not lend itself to successful adult education in addition to the effects of centralized bureaucratic control of lifelong education.

Methodology

The basic interpretive qualitative approach was used as it is suitable for studying problems with an aim to understanding the meanings of individuals or groups as they identify with a social or human problem. The research design used was a descriptive case study. In this study the inductive interpretations of the students' experiences was explored through several collection media such as analyzing interviews, observations as well as artifacts within the classroom including teachers' lesson plans. This was done in order to unearth themes from which conclusions could be made. A thematic presentation of the collated data was done to categorize these meanings, interpretations and artifacts. The researcher determined what point to end the data collection phase using Lincoln and Guba (1985) theoretical guidelines which are:

“exhaustion of sources, saturation of categories, emergence of regularities and over-extension” (p. 125). The interviews were audio taped. After the interview process the data was transcribed. Subsequently, the process of coding and triangulation began. Coded data was sorted, ranked, and used to develop a thematic presentation. Microsoft OneNote and SPSS software was used to help in the coding process. Triangulation occurred by reviewing the multiple sources of data collection including journal entries from observations, the semi-structured interviews and an assessment of lesson plans from the teachers.

Analysis

Theme 1- First Impressions

One of the significant findings in this study was the anxiety that the participants felt when they realized that the classroom has students of many different ages. Students expressed apprehension over the age difference. Members from the Silent Generation were apprehensive as to how they would be treated in a classroom of Baby Boomers and Millennials. Some were concerned that they would be treated like parents or grandparents. Older adult students recognized their limited technological prowess and marvelled at how tech-savvy the younger generational cohorts were. The participants in this study stated they experienced feelings of anxiety when they realized that they were in a classroom where, at times, they were the oldest student present. Many participants expressed shock, wonder and fear when they recognized the age difference. The participants from the Silent and Baby Boomer generations expressed that besides age, technology was another factor that differentiated them from the younger students.

Theme 2- Adapting and Relationship building

Participants shared how they became more tolerant and understanding of members of different generational cohorts. Older generational cohorts credited the influence of their own children in helping them to understand younger generational cohorts. All participants also described how they nurtured members of different generations. Members from the Silent Generation and Baby Boomer Generation cohorts shared how they mentored members from Generation X and Millennials by giving advice on job and social related matters. Generation X and Millennials shared how they would help members of the older generation by showing them how to use technology, make great presentations and studying tips. This act of mutual nurturing became a major dynamic in building relationships among the different generational cohorts.

Theme 3- Impressions of the Multigenerational Classroom

The last theme dealt with the students' impressions of their experiences in a multigenerational classroom. All participants agreed that their learning experience was richer for being in a multi-generational classroom. Generation X and Millennials revealed that they learned a lot of social skills from the Silent Generation and Baby Boomer. One theme that was constant throughout the data was that members of the younger generation learned the importance of perseverance and loyalty from members of the older generation. The older generational cohorts agreed that their technological abilities as well as their presentation skills have improved because of the influence of

Generation Xers and Millennials. All participants agreed that in the end age does not matter.

Theoretical Lens

Social Constructionism was used to guide this research. So, the construction of meaning by the participants was evident from how they integrated new experiences and content with previous knowledge to construct new meanings. Their ability to overcome their initial fear and anxiety also influenced what they learned from the members of their classes, technology and their own self-presentation.

Constructionism also relies on direct interaction with the environment. Social constructionism “refers to constructing knowledge about reality, not constructing reality itself” (Patton, 2002, p. 96). Knowledge is a constant construction and reconstruction of understanding through dialogue and interaction with the social community. People, materials and situations influence learning. Learners gain new understanding through the continual integration of new content and experiences with past knowledge and construct new meaning from the experiences. Older generational cohorts interacting with Generation Xers and Millennials helped to reconstruct their beliefs and understanding and caused them to develop relationships resulting in a good learning experience. All participants adapted to the issues that were present across the generational divide. Participants accepted the differences between generations, empathized with other members, adapted their behaviour, built relationships and engaged to mutual nurturing. This caused them to emphatically agree that they had a positive learning experience in a multi-generational classroom.

This study was also framed using the Andragogy theoretical framework. The first concept of this philosophy regarding adult learners is that as a person matures his or her self-concept moves from that of a dependent personality toward one of a self-directing human being (Knowles, 1980). As time progressed members of the multi-generational classroom overcame their fears and anxiety and began interacting with members from different generational cohorts. Another concept of Andragogy highlights the fact that adult learners have a rich reservoir of experiences. This reservoir of experience was evident in the mutual nurturing activities that took place between generations. Older generational cohorts would share their work and life experiences with younger generational cohorts- teaching them worthwhile life lessons, while the younger generational cohorts would help members of the older generations with technologically related problems, presentation skills and study tips. Kasworm (2003) explained that many adults bring some type of collegiate experiences into the classroom which can add to the reservoir. The concept of Andragogy addressed all adult students from the Silent Generation to the Millennials. All students gained new understanding through the continuous integration of new content and experiences with past knowledge and created new meaning from the experiences and adapted to this new meaning.

Conclusion

The study revealed that in the end age is not a delimiting factor in a multigenerational classroom but adds to a positive learning experience. Students in the multigenerational classroom will initially experience anxiety and fear because of the

age difference but they overcome these by drawing on the rich reservoir of experiences that they bring to the classroom as adult students and their continuous interaction with each other. It is also imperative that facilitators design lesson plans that allow for this constant interaction especially within the classroom. The dynamics of the multigenerational classroom will serve to challenge pre-existing perceptions that members may have of different generational cohorts. However through integration, adaptation and relationship building new experiences are forged and new understandings are developed. Of important note is the fact that nurturing becomes a stabilizing force in the development of relationships across the generations. The reservoir of experiences is harnessed by all members from across the generations to aid in the development of relationships through nurturing. In the end everyone learns from everyone. This sustains the continued development of relationships and helps to synergize the various inter-relations that may be present in a multigenerational classroom.

It is suggested that further research consider multi-ethnic ESL classrooms in Japan and how relationships develop between persons of differing ethnicity and generational affiliation in an ESL classroom.

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***Learner Autonomy and Hand Raising in the EFL Classroom:
Exploring Willingness to Talk***

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

This paper describes an ongoing, reflective-practice, qualitative study of Japanese university students' willingness to raise their hands and actively communicate in English as a Foreign Language classrooms. We educator-researchers want to understand students' motivations and the limitations to students' willingness to share their ideas with the teacher and classmates. Three student focus groups explored the students' experiences with and interpretations of hand-raising and contributing to classroom discussions. Coding of the focus groups' discussions revealed themes that coincided with our expectations as well as ones which contradicted our expectations and others that were unanticipated. We discuss ways this practitioner-research can be used to improve instructional practices at the institutional level.

Keywords: hand raising, class participation, focus groups, axial coding, practitioner research, English as a Foreign Language

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Introduction

Practitioner-research is promoted and encouraged as a faculty development activity by a wide range of teacher organizations, including the National Education Association (DeMott Painter, n.d.), Teachers of English as a Second Language (www.tesol.org) and the International Association of Teachers of English as a Foreign Language (www.iatefl.org and <http://resig.weebly.com/>) among others. In fact, this project was sponsored and funded by our own university through a collaborative research grant as part of faculty development. Practitioner-research is a form of action research which encourages teachers to pose questions about how they teach and how their students learn. It follows the process of selecting a research method appropriate to the questions, analyzing the data, and reflecting on the outcomes to inform future teaching practice (DeMott Painter, n.d.).

Foreign faculty in Japan often encounter a disconnect between their expectations of classroom participation and those of Japanese students. At our university in Western Japan, we observed that our own expectations of students signaling a desire to participate in class discussions by raising their hands were not being met by the students. The EFL program where we teach is based on cooperative learning theory, requiring students to participate and talk in the target language during class (Jacobs 2004; Jacobs, Power & Low 2002; Kagen 1994). This led us to question how the students viewed hand-raising and class participation and to examine how our own views were informed.

Review of Literature

Cutrone (2009) reviews a number of studies which have focused on the issue of Japanese students' hesitancy to speak in foreign language classes. He found that some studies focused on psychological anxiety, (e.g.: Townsend & Danling, 1998) while others suggest a difference in what is culturally acceptable (e.g.: Anderson, 1993). Another explanation has been the culture of classrooms in Japan, where the ideal student is quiet, obedient and passive (Nozaki, 1993), where ritual defines behavior (Lebra, 1976 and Doyon, 2000), or where evaluation and competition is emphasized to the point that mistakes are feared (Nozaki, 1993 and Doyon, 2000). The demeanor of the teacher has also been pointed to as a source for Japanese students' anxiety in language classrooms (Shimizu, 1995, Hadley & Hadley, 1996, Long, 1997, Cutrone, 2001).

More recent studies have examined students' point of view through surveys. These studies have focused on Japanese students' willingness to communicate, their perceptions of silence, and motivations. Based on a study of 63 students, Hayashi and Cherry (2004) conclude that Japanese EFL learners prefer certain tasks associated with communicative learning styles, but many do not favor risk-taking behaviors such as talking to friends in English or talking with a partner. Furthermore, they identify a successful strategy: gradually requiring students to answer questions of more difficulty, specifically moving from questions with one word answers to those with longer answers. Similarly, in their 2014 study on hand raising actions in different classroom situations, Kawabe, Yamamoto, Aoyagi and Watanabe found that Japanese students' lack of confidence to raise hands is due to pressure associated with active participation. Their results also showed that question difficulty and positive or

negative reactions present in the room affect students willingness to freely raise their hands. Likewise, Kim, Ates, Grigsby, Kraker, and Micek (2016) surveyed 45 Japanese university students and found that responses to silence were highly individual across the students. Some students in their study perceived silence to be a form of participation – actively listening and processing information. To take these students' view of silence into consideration, the authors promote group work with revolving roles (e.g.: leader, reporter).

Similar to these studies, our research questions focused on examining hand rising from the students' point of view. We wanted to find out how Japanese university students perceived our expectation about signaling one's desire to participate, either asking a question or volunteering a comment, by raising one's hand. Specifically, we posed the following research questions:

1. How do Japanese university students view hand raising in the classroom?
2. What encourages or inhibits hand raising by Japanese university students?
3. How does their view of hand raising differ by classroom context?
4. How does their view of hand raising differ when interacting with peers or teachers?

Methodology

Unlike previous studies, we chose not to use a survey instrument with listed response options. Focus group data is considerably different from survey data in that it uses group interaction to collect not only the views of individuals, but also data which reflects their shared social reality (Williams & Katz, 2001). Like other qualitative methods, focus groups capture responses that are unanticipated and unlikely to appear in quantitative methods such as surveys.

As teachers in a specific EFL for academic purposes program, we chose to investigate the beliefs of the students in that program. The program includes 12 clock hours of instruction per week. Volunteers in the second year of the program were recruited to participate in focus groups. Prior to volunteering, students were informed that they would need to speak and understand English to participate in the focus groups and that the conversations would be recorded and used as data for a study. If the students objected to the use of any information, they were informed that they could have it expunged from the record.

Three semi-structured, open-ended focus groups were conducted. Group A consisted of two female and three male students, group B consisted of five female students and group C consisted of four female students. The students' paper-based TOEFL scores ranged from 467-543. They were all completing their third university semester, and were enrolled in five different classes in the same EFL program. The focus groups took place the last week of spring semester 2017. The students' placement into groups was based on their schedule availability.

The list of questions for the focus group discussion was generated by delving deeper into the meanings of the research questions. Several revisions were made and as a result, we asked the participants eleven questions. The focus groups were led by one practitioner-researcher to avoid intimidating the students, and the same researcher

facilitated all three focus group sessions for consistency. During the focus groups, the researcher placed a digital recorder on the table in full view of the participants. Students were asked to introduce themselves and then the researcher asked the questions. As students responded the researcher asked follow up questions to draw out more information from the students.

The focus group conversations were then transcribed by two professional transcribers. The transcriptions were double checked by the researcher who conducted the focus groups while listening to the recordings. The researcher also blinded the transcripts by removing student names and any identifying references to their teachers.

After the transcripts were verified as accurate, we used Axial coding to analyze the data. Axial coding refers to making connections or finding similarities in the data to create themes and categories (Dornyei, 2007). First, we used the search feature in MS Word to look for keywords that appeared in the transcripts, for example “ashamed” or “nervous,” to find every instance of that word and its synonyms across all three transcripts. We next assembled the identified words with the context of an entire quote or turn for each word and examined them for meaning. For example, we considered whether the student was saying “I feel ashamed when I make a mistake” or “other people seem ashamed of their mistakes” or “I’m not ashamed of mistakes.” We then categorized the quotes by intended meaning. For example: positive feelings about raising hands versus negative feelings about raising hands. Then we divided the categories into themes. For instance, “missing one’s chance” was one of three themes within the negative feelings about hand-raising. We went through multiple revision as we cross-checked themes and each others’ placement of student remarks and turns. After the matrix was complete, we had a third person read the resulting table of categories, themes, and quotes / turns to check for consistency and how we interpreted the students’ words. The third reader found 5 questionably placed quotes or turns. We reexamined those and adjusted our placement accordingly.

Results and Implications

Examining the data for patterns revealed categories and themes across the three different focus group conversations. We identified 6 categories and 25 different themes within those categories. Not all of the categories or themes were equally represented across the focus groups. Considering only the themes which were represented across all focus groups and reflected turns from multiple participants in each group, we realized that we had three types of findings: those which reflected our beliefs about hand-raising, those which contradicted our beliefs, and those which were completely unexpected.

Based on our classroom experience and research conducted by others (Nozaki 1993 and Doyon 2000), we anticipated that students would report they felt negatively about raising their hands because they were afraid of making mistakes. Indeed, the focus group transcripts showed this. Students said they were worried about saying the wrong answer or making a mistake, so they avoided raising their hands or contributing to class discussions. This was mentioned 11 times total: 3 times in the first focus group, 5 in the second, and 3 in the third. For example, in the first group, a student recounted her first year teacher’s expectations about participating, and then said, “So the students feel stressed about it, and we don’t want to answer the question

because she is so strict, and sometimes no you are not correct. So maybe we influence to... ah her giving pressure influenced on the answering the question.” In the second group, a participant said “I feel negative sometimes because I am afraid of making mistakes, or when I saying was wrong I feel afraid.” In the third group, a student reported hesitating to volunteer answers in class because “I try to answer, but I think my answer not correct.”

However, we also found that focus group participants directly contradicted what we expected them to say. As practitioners of cooperative learning, we often use pair / group work in class as preparation for larger full-class discussions. Yet, in these focus groups, pair / group work was not viewed by the participants as being supportive of volunteering to contribute their ideas to a whole class discussion. Comments to this effect occurred 12 times in total: 3 times in the first group, 4 times in the second and 5 times in the third. For example, in the second focus group, a student reported during group work, not all members practice speaking in the target language to prepare for later, full class discussions: “...usually in my class it is prohibited to speak Japanese, but in small group they tend to speak in Japanese, so I don’t like that, so even if I want to speak in English, my friend respond in Japanese. Some people do that, so I feel uncomfortable with them...” In the third focus group, a participant stated, “For the peer group or the work group, it doesn’t matter, we are working together and we are sure with this answer. And the teacher say ‘stop.’ So and the teacher asks us, ‘do you have any ideas?’ Even we my peer group know the answer, we are confident with it, they won’t say the answer.” This calls into question advice, such as that given by Kim et al. (2016), to have students work in groups first to promote more speaking time in class using the target language. Surprisingly, students may feel that group work is a chance to avoid the target language or that they have already achieved a satisfactory answer and do not need to elaborate further. As teachers, we are considering ways to frame group work so that students appreciate the goal of practicing the target language multiple times and that sharing group answers increases the depth of response for everyone.

The last type of theme we found were factors we had not anticipated being a part of students’ views about raising their hands and contributing to class discussions. One of these was that students categorized teachers’ questions into “common knowledge” and “not common knowledge.” By this they meant questions which do not involve “opinion” were easier to answer. Students repeatedly mentioned that they felt more comfortable raising their hands and volunteering to answer if the question was a simple one: a fact that everyone in the class already knows, something that occurs word for word in the text being studied, or an “easy topic.” They contrasted these types of questions to more difficult questions which involved “having and exposing one’s opinion.” In our data, comments in this vein were mentioned 11 times: 4 times in the first focus group, 3 in the second, and 4 in the third. For example, in the first focus group a participant stated, “...depends on questions. About daily life or not high academic topics another student can answer for such questions. But teacher always tells high academic topics, so I can’t answer or I can’t understand how to think about it.” In the second group a participant remarked, “For instance, in Japan the divorce rate is high or low, related to other countries. It’s common knowledge, so it’s not my personal opinion, so it’s comfortable to answer.” In the third group, a student explained, “...I think many students like to answer the comprehensions (reading questions). We know that you can find the answer in the textbook or exactly the word,

you can find it. But, for the discussion or your own opinion, we won't say it aloud..." After finding this theme in our data, we researched the more recent literature and found that Kawabe et al.'s (2014) investigation revealed "the difficulty level of questions affected confidence" which changes students' willingness to raise hands.

Completing the intricate and time consuming work of transcribing and coding the focus groups gave us insight into our own EFL classes. Dividing the themes from our data into expected, contradicting, and surprising helped us as practitioners develop ways to use these results in our teaching. As practitioners, using this qualitative methodology yielded richer results than a survey would have. We were able to explore students' opinions bringing to light unexpected ideas from their responses. This allowed us to consider the basis of our expectations and make changes to our practices.

Limitations

The conclusions which can be drawn from this study are severely limited in scope. As practitioner research, it serves more to inform local practices than to contribute to overarching language learning theory. With only fourteen participants from one EFL program at one university in Japan, the findings are very locally situated. This particular university has a student population which is 75-78% female depending on the year. The study volunteers reflected this gender bias as 11 of the 14 were female. Kawabe et al. (2014) also commented on the need for a more uniform study in the future; a study in which an equal number of women and men are questioned.

The focus groups were conducted entirely in English, which is the participants' second language. As a result, at certain points in the data, it was difficult to determine what the participants meant. Thus, some of the data was removed from consideration. Ideally, we would ask the participants for clarification in one-to-one interviews; however, we have not been able to do so yet. In one-to-one interviews, comments to the original focus group discussions could be elaborated on with probing questions to uncover more meaningful results. Similarly, the set of questions asked were frequently focused on "hand raising" behavior, such as "In what situation are students comfortable raising their hand or sharing their ideas with the class?" or "Describe a time when you wanted to raise your hand but didn't? What happened and how did you feel?" However, the volunteer student participants frequently talked more generally about their "willingness to talk." The focus group discussions may have been influenced by this gap in researcher and participant terminology. Asking more general questions such as "In what situations are students comfortable asking their teacher a question?" may elicit different results (see Appendix 2 for a complete list of the focus group questions).

Despite the small size and limited scope, this practitioner research project allowed us to examine the experience of raising one's hand in order to participate in a university EFL class from the Japanese students' perspectives. This allows us to reconsider our teaching practices and make adjustments. For example, we have reduced the use of "hand-raising" in the classroom. Instead of asking students to raise their hands to signal readiness to participate, we have started asking for students to call out answers which can be done as one person or by several at a time. During group work, we designate a "reporter" for each group so that the expectation to share answers is clear

and the group member expected to speak has time to prepare. Another classroom management idea is to remove the consequence or risk from wrong answers by not assigning points to students who answer questions.

As a result of this study and the themes that emerged from coding the participants' responses, we have identified a number of additional questions for further research:

1. How widespread or common are these students' views and observations about hand raising and participation?
2. How can teachers seeking to promote discussion as an instructional tool, engage students in contributing to a discussion in an orderly way while acknowledging the reluctance to raise hands?
3. Would training in cultural expectations about hand-raising / discussion encourage students to participate and answer more difficult questions in front of peers and teachers?

Conclusion

In this qualitative study of learner participation and willingness to hand raise in foreign language class, we transcribed nearly 50 pages of student focus group discussions. The data was then methodically analyzed and coded to reveal categories and themes. The process of qualitative axial coding was time consuming and challenging, but the results provided insight into what a small sample of students at this university in western Japan have to say about hand-raising to signal their willingness to contribute to class discussion and share ideas with classmates and professors. The results of the study have also contributed to our development as teachers as we look for ways to encourage participation while taking the students' point of view into consideration.

Acknowledgements

This research was funded with support from the Intercultural Research Institute, Kansai Gaidai University. Additionally, we would like to thank the following people.

Dawn K. Booth, Ph.D., Independent Research Consultant and author of "The Sociocultural Activity of High Stakes Standardised Language Testing, TOEIC Washback in a South Korean Context" (2018), for her contributions to the methodology and help with the categories and themes represented in our table.

Bruce Bottorff, Assistant Professor, Kansai Gaidai University, for validating themes and providing input on the categorization of student turns.

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Appendix 1: Abridged Qualitative Axial Coding Table

This abridged version of the axial coding table focuses on the categories and themes discussed in this paper. For a full table, please contact the authors.

	Focus Group			Total
	A	B	C	
Category 1: General feelings/emotions about hand raising (negative)				
1.1 I am afraid/ashamed/shy/nervous/have no confidence	1	7	9	17
1.2 Have/say wrong answer/make a mistake/not correct	3	5	3	11
1.3 I missed the chance	3	3	0	6
Category 4: Reasons or motivation for NOT hand raising				
4.1 Against Japanese tradition and culture	1	0	0	1
4.2 Working in pairs/groups/group work	3	4	5	12
Category 6: Type of questions or topic of discussion				
6.1 Common knowledge/fact/easy topic questions/answer in text	4	3	4	11

Appendix 2: Focus group questioning route

1. In what situations are students comfortable raising their hand or sharing their idea with the class?
2. In what situations are students comfortable asking the teacher a question?
3. Do you think students like to say their ideas to the class, why or why not?
4. In what classroom situations do students want to raise their hand but don't.
5. In what situations are students not comfortable asking a question in class?
6. In general, how do students feel about hand-raising in English classes to ask and answer questions?
7. Can anyone here describe a time when you raised your hand during English classes. Why did you do it and what happened? How did you feel?
8. Describe a time when you wanted to raise your hand in English class but didn't. What happened and how did you feel?
9. If no student in your class answers the teacher's question how do you feel? What do you do?
10. How do students feel about hand-raising to answer or ask a question during a student presentation?
11. I'd like you to now think about hand-raising outside of English classes. In what ways are your feelings the same or different from what you have already said during this discussion?

*Challenges Associated with the Implementation of Active Learning:
A Small-scale Study of Japanese University EFL Teachers*

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The Asian Conference on Education
Official Conference Proceedings

Abstract

Active learning (AL)—recently described as “independent, dialogical, and deep learning”— has been widely adopted by Japanese universities. Now, despite reservations and anxieties expressed by high school EFL teachers, the upcoming educational reform will also require the implementation of AL in all Japanese high schools. This small-scale study, therefore, aims to investigate specific challenges and/or difficulties encountered by Japanese university EFL teachers in implementing AL and provide practical suggestions for high school EFL teachers to help address their specific concerns with AL. A questionnaire consisting of a four-point Likert scale and open-ended questions was used and a total of 20 Japanese university EFL teachers took part in this study. Results revealed that in implementing AL in English classes, Japanese EFL teachers tend to experience the following difficulties in particular: various language proficiency levels among learners in the same class, learners’ low motivation to study through AL, and lack of clear criteria for evaluation. Based on the results, this study attempts to provide several suggestions for high school EFL teachers, including ways to foster collaborative learning.

Keywords: active learning, EFL, teaching experience, challenges and difficulties

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Introduction

Active learning (AL)—recently described as “independent, dialogical, and deep learning”—has been widely adopted in Japanese universities. Now, with the upcoming educational reform, high schools are also highly expected to implement AL in all subjects. However, there have been reservations and anxieties being expressed by high school EFL (English as a Foreign Language) teachers regarding its implementation (Kabeya, Mineshima, Nakamura, & Mochizuki, 2016; Nakai, 2016) as many of them are still not sure of what AL means and what difficulties they might encounter in employing AL in their English classes. This small-scale study, therefore, aims to investigate specific challenges encountered by Japanese university EFL teachers in implementing AL and provide practical suggestions for high school EFL teachers to help address such challenges in their teaching context.

Literature Review

“Active learning” and “Active-learning-based instruction”

One of the well-known definitions of AL can be found in Bonwell and Eison (1991), “a pioneering work that lays out the principles of active learning and one of the most frequently cited works (Matsushita, 2018).” They defined AL as “anything that involves students in doing things and thinking about the things they are doing” and provided the following five general characteristics:

- Students are involved in more than listening.
- Less emphasis is placed on transmitting information and more on developing students’ skills.
- Students are involved in higher-order thinking (analysis, synthesis, evaluation).
- Students are engaged in activities (e.g., reading, discussing, writing).
- Greater emphasis is placed on students’ exploration of their own attitudes and values.

Adding to these five conditions, Matsushita (2015) included a sixth characteristic, “It requires externalizing cognitive processes in the activities,” in the definition, on the basis of Mizokami (2014). This definition, consisting of six characteristics, has been frequently referred to as a general definition of AL in today’s higher education (Yoshida, Matsuda, & Sato, 2017). As the educational paradigm was shifting from teaching-centered to learning-centered (Barr & Tagg, 1995), AL was proposed as a learning which goes beyond listening to a lecture given by a teacher. Based on this paradigm shift, Mizokami (2014, 2018) operationally regarded “listening to a lecture” as “passive learning” and attempted to define AL as “all kinds of learning beyond the mere one-way transmission of knowledge in lecture-style classes (=passive learning).” Noting that this does not explain what constitutes “active,” he further added that AL “requires engagement in activities (writing, discussion, and presentation) and externalizing cognitive processes in the activities.” He stated that activities such as writing, discussion, and presentation are representative examples of learning which goes beyond just listening to a lecture, implying the paradigm shift at the activity level. And by engaging students in such activities he claimed that it becomes possible to have students use various cognitive functions that they need not use when just listening to someone talk, making it possible for them to externalize

cognitive processes. It is thus considered necessary that learners engage in activities which require them to externalize all sorts of cognitive processes.

It is important to note that fostering students' engagement in such activities does not necessarily require the abandonment of lecture or teachers' instruction. As Mizokami (2014) stated, since AL is one form of learning, it is not only applied to courses which are intensively learner-centered (e.g., Project-based learning, Learning through discussion) but also applied to a type of lesson which combines lecture and activities incorporating writing, discussion or presentation. He thus introduced the term "active-learning-based instruction (hereafter AL-based instruction)" to refer to both types of course and lesson (Mizokami, 2014).

AL in the Japanese educational context

In Japan, the term AL began to gain attention in the context of higher education in 2012 when the Central Council for Education (hereafter CCE), the advisory body of Ministry of Education, Culture, Sports, Science and Technology (MEXT), released a report named *Towards a Qualitative Transformation of University Education for Building a New Future*. The report proposed the idea of AL to foster changes in Japanese higher education where most classes tended to involve teachers' one-way delivery of knowledge. It defined AL as follows: "Different from the one-way lecture-based education given by a teacher, AL is defined as the general term for teaching and learning methods which include learners' active participation in learning" (CCE, 2012). As the effective AL methods and/or formats, "discovery learning, problem-based learning (PBL), experiential learning, investigative learning" as well as "group discussion, debate, group work" were proposed in the report. A comparison with the one-way lecture-based education as well as external factors were particularly underscored (Matsushita, 2018; Jiang & Mizokami, 2015).

Though it is still a relatively new concept, AL has been widely implemented in higher education in Japan (Yamada, 2017). This boom around AL, however, does not only remain in university today. With the upcoming changes to the university entrance examinations which aim to assess students' critical thinking, judgment and expression, AL was also introduced to secondary educational policy in 2014. Regarding high school, the newly revised Course of Study (MEXT, 2018) will require the implementation of AL, now officially described as "independent, dialogical, and deep learning," in all high school subjects, starting in 2022.

AL in Japanese high school English classes

Under the new curriculum, a couple major changes will be put into action for high school English subjects. One is the emphasis of integrative language activity. Pointing out the students' insufficient experience of learning through the integration of different language skills, the new curriculum sets five language areas (listening, reading, spoken interaction, spoken production, writing) and encourages students' active engagement in communication by integrating two or more of these areas. Another is to cultivate students' productive skills (i.e., speak and write). Though such skills have been less prioritized in high school English classes, the new curriculum will place emphasis on enhancing students' productive skills through various activities (e.g., speech, presentation, debate and discussion) in a newly established

class—“Logic and Expression.” In just a few years, all high school EFL teachers will be highly expected to foster students’ communicative, interactive and productive skills through the adoption of AL using a variety of instructional approaches and activities.

However, the majority of high school teachers rather seem to show passive attitudes towards the implementation of AL while they consider students’ active engagements in production and interaction important. The survey conducted on 2, 134 Japanese high school EFL teachers (Benesse Educational Research and Development Institute, 2016) (hereafter Benesse, 2016) showed a huge gap between their beliefs and their actual classroom practices, particularly regarding productive and integrated skills. The survey results showed that while a large number of teachers consider “providing opportunities for students to express their own opinions in English” and “providing activities which require the use of integrated skills” extremely important, only less than 10% of them answered that they conduct them in class sufficiently. In fact, only a small number of them engage their students in activities related to productive skills (i.e., speak and write): Less than 30% of them answered that they employ “speech/presentation” or “textbook summary writing in English.” As for “debate” and “discussion,” only less than 10% of them responded that they implement such activities in their classes. These results suggest that though many teachers feel the necessity to foster students’ involvements in interaction and production, they are faced with difficulty achieving them.

Two main factors seem to contribute to this situation. One is their limited learning and teaching experience of AL both as a student and a teacher. Research on teacher belief (Borg, 2003) showed that teachers’ prior language learning experience influences their decisions of classroom practices. As Japanese education has traditionally been putting emphasis on grammar translation and drill, most teachers today have very limited experience of studying through activities such as debate or discussion in neither English nor Japanese. Without being able to make references to their own learning experience, therefore, incorporating such activities should be challenging. In addition, most teachers have insufficient experience teaching speaking or writing because they have been under significant pressure to prepare their students to succeed in college entrance examinations which mainly aim at assessing students’ receptive skills (Hagerman, 2009). As the survey by Benesse (2016) showed, the teaching methods that high school EFL teachers want to learn the most in teacher workshops today are “speaking skills,” followed by “integrated skills” and “writing skills.”

Another is how this new term, AL, is being perceived among high school teachers. Past studies indicated that because CCE (2012)’s report lacked detailed explanations of “activeness” and how and why the proposed methods and/or formats would work, many teachers in Japan are confused about this term and tend to perceive it as the mere use of instructional methods and/or formats such as cooperative learning and problem/project-based learning (PBL) (Ito, 2017; Nakai, 2016). Followings are some of the reservations expressed by high school teachers: Whether engaging students in cooperative learning can help foster their language skills, whether summaries and reflections conducted by students can lead to the achievement of learning objectives, whether students can acquire knowledge by talking to each other, and whether the lecture-based teaching methods (e.g., presentation-practice-production method) are

not effective at all (Edagawa, Tani, & Sato, 2016; Nakai, 2016). Though AL does not mean to only have students engage in activities or require the complete abandonment of lecture (Mizokami, 2014), teachers seem to be under the impression that the approaches they have been using were somewhat denied under the new educational reform and that the promotion of AL in their classes might lead to what Matsushita (2018) explained as “many activities and little learning.”

Observing such situations surrounding high school teachers today, we can see that to a great extent their concerns and reservations have derived from the limited learning opportunities and insufficient knowledge provided on AL practices. As is often the case with most of us, when we face something that appears completely new, we are likely to be at a loss, not being able to picture what could happen if we put it into action. We tend to find it difficult to imagine what challenges we might encounter on the way and find ourselves feeling afraid of making fatal mistakes. Japanese high school teachers now being expected to adopt a new method and not fully understanding what benefits or challenges would exist in implementing it, it is not too difficult to imagine the fear they face and the reservations they have. Considering such situations, the pedagogical insights gained from actual classroom practices on AL should play a crucial role in supporting their teaching from now on. In particular, exploring and identifying specific challenges associated with the implementation of AL in the Japanese EFL context should help them gain practical knowledge on what need to be taken into consideration when they conduct AL-based instruction in their own teaching context.

Purpose of the study

The purpose of this study, therefore, is to identify specific challenges and/or difficulties encountered by Japanese EFL teachers in higher education, where AL has been more widely practiced than high schools, and provide practical suggestions for high school EFL teachers.

Research Questions

The main research questions of this study are as follows:

- 1) What are Japanese university EFL teachers' attitudes towards the implementation of AL?
- 2) What are the challenges and/or difficulties associated with the implementation of AL in the Japanese EFL context?
- 3) How can we help Japanese high school EFL teachers address such challenges and/or difficulties in their classes?

Methodology

Participants

The present study was carried out in February, 2018. Participants were all university EFL teachers and they were selected based on the following three criteria: (a) the teachers were native speakers of Japanese; (b) the teachers have taught EFL courses at university in Japan; and (c) applying Mizokami (2014)'s definition, the teachers have had relatively rich experiences of conducting AL-based instruction in their English

classes. The questionnaire surveys developed for this study were sent to 25 Japanese university EFL teachers in western and eastern Japan, all of whom fulfilled the above criteria. A total of 20 teachers (10 males and 10 females) completed and returned the survey, producing 80% response rate. Their experience of teaching EFL courses spread widely, ranging from 2 to 20 years. As Table 1 shows, the majority of them have implemented a variety of AL techniques in their classes, including the techniques to facilitate students' participation in discussion as well as the ones that require critical thinking and problem-solving.

Table 1: Teachers' experiences of implementing techniques used in AL-based instruction (N=20)

	have implemented		often implement		Total	
	N	%	N	%	N	%
Think-Pair-Share	10	50	9	45	19	95
Round Robin	11	55	5	25	16	80
Buzz Groups	9	45	9	45	18	90
Talking Chips	1	5	3	15	4	20
3-Step Interview	10	50	2	10	12	60
Critical Debates	11	55	3	15	14	70
Note-Taking Pairs	7	35	1	5	8	40
Learning Cell	4	20	2	10	6	30
Fishbowl	0	0	3	15	3	15
Role Play	10	50	2	10	12	60
Jigsaw	7	35	4	20	11	55
Test-Taking Teams	1	5	2	10	3	15
TAPPS (Think Aloud Pair Problem Solving)	4	20	3	15	7	35
Send a Problem	2	10	2	10	4	20
Case Studies	7	35	3	15	10	50
Structured Problem Solving	1	5	3	15	4	20
Analytic Teams	3	15	2	10	5	25
Group Investigation	11	55	5	25	16	80
Affinity Grouping	9	45	4	20	13	65
Group Grid	1	5	3	15	4	20
Team Matrix	0	0	3	15	3	15
Sequence Chains	4	20	3	15	7	35
Word Webs	11	55	2	10	13	65
Dialogue Journals	2	10	2	10	4	20
Round Table	1	5	2	10	3	15
Dyadic Essays	2	10	2	10	4	20
Peer Editing	10	50	5	25	15	75
Collaborative Writing	10	50	5	25	15	75
Team Anthology	1	5	3	15	4	20
Paper Seminar	4	20	9	45	13	65

Note: This table was made based on Barkley et al. (2005), Mizokami (2014) and Nakai (2016)

Instrument

In order to explore the research questions, a questionnaire survey was developed (See Appendix). The survey comprised the following three sections. The first section consisted of five questions regarding the participants' demographic information and their experiences of implementing techniques used in AL-based instruction. The latter part was made based on the 30-techniques of collaborative learning, one of the AL-based instruction, provided in the previous studies (Barkley, Cross, & Major, 2005; Mizokami, 2014; Nakai, 2016); the participants were asked whether they "have implemented" or "often implement" these techniques in class. The data obtained from this section are summarized above (Table 1). The second section dealt with two questions (four-point Likert scale and open-ended questions) regarding the participants' attitudes towards the implementation of AL in English classes. The third section asked about the participants' experience of employing AL. In particular, it asked about the challenges and/or difficulties that they encountered in implementing AL to teach English. All questions were presented in Japanese; after the data collection, both questions and answers were translated into English.

Data collection

Data for the current study were collected through a questionnaire survey described above. Both online and paper-based surveys were sent in February 2018 to each participant with the explanation of the purpose of the study. The participants used the preferred survey form to fill out their answers. The data collection took place for approximately one month (early February to early March). Prior to the distribution of the survey, the participants were informed that the information they provide would be confidential and used only for the purpose of this study and that by submitting the survey they provided their consent.

Results and Discussion

Based on the results obtained from the questionnaire, the research questions are discussed below. First, the participants' attitudes towards AL are shown in order to understand their overall impression of adopting AL in teaching English. Second, specific challenges and/or difficulties experienced by the participants in teaching English are reported. Last, several practical suggestions for implementing AL in high school English classes are discussed.

1) What are Japanese university EFL teachers' attitudes towards the implementation of AL?

Table 2 below shows the results of Q6-1, which asked the participants whether they agree with the implementation of AL in English classes. It presents the descriptive statistics as well as the number of participants who chose each answer on the four-point Likert scale, ranging from "disagree" on one end to "agree" on the other, as a percentage. The total percentages of the respondents who disagreed (1 and 2) and agreed (3 and 4) are shown in the columns Disagree and Agree. As indicated in this Table, all participants showed positive attitudes towards giving AL-based instruction in English classes.

Table 2: Teachers' opinions about the use of AL in English classes (%) (N=20)

MEAN	SD	1	2	3	4	Disagree	Agree
3.85	0.37	0	0	15	85	0	100

Note: 1= disagree, 2= somewhat disagree, 3= somewhat agree, 4= agree

Based on the results of Q6-2 (Please tell us your reason for Q6-1), we found that the participants experienced three main benefits in conducting AL-based instruction in English classes. First, they perceive AL as effective in English classes because it can provide ample opportunity for students to use English. Nearly half of the participants emphasized the necessity of using the target language in order to improve one's foreign language proficiency and stated that AL is the most suitable for providing such opportunities. One respondent wrote, "It is using English that leads to the improvement of one's language proficiency. From my experience, AL seems the most suitable for creating such opportunities."

Second, they consider AL important because it can also influence students' learning motivation positively. Five referred to the improvement of learner motivation through AL, for example, "Comparing with those who study in classes which do not incorporate AL, students studying through AL tend to keep their learning motivation high," and "As AL requires students to do more than just sit and listen, we can prevent their passive learning attitudes."

Third, they also find AL necessary because they regard AL as crucial for all kinds of learning, not limited to learning English. 7 out of 20 respondents expressed their positive attitudes towards AL by writing specifically about learning in general, for example, "In any subject, class is just one of many places to know about something. If we truly want to learn something, we need to make efforts initiatively. In that sense, I believe AL is the nature of all learning."

However, a few other perspectives were also shared as three referred to the aspects that require further attention in adopting AL. One highlighted the importance of improving students' English language skills: "We cannot deny the fact that students with low level of English proficiency tend to face great difficulty learning English through AL." In addition, two focused on how to adopt AL in teaching English, commenting, "I learned that AL methods are suitable for language education, but I also think that there are benefits in the traditional, lecture-based classes. I'd like to incorporate various methods appropriately."

2) What are the challenges and/or difficulties associated with the implementation of AL in the Japanese EFL context?

As the previous section showed, we can see that the participants felt various benefits of adopting AL in their English classes. However, it was also indicated that some difficulties exist as well. This section further describes specific difficulties associated with AL-based instruction in the Japanese EFL context based on the results of Q7, which asked the participants to share their teaching experience of AL. It specifically asked about the challenges and/or difficulties they have encountered in implementing

AL in teaching English. Based on content analysis of the responses provided for Q7, the following three major challenges were found.

1. Various language proficiency levels among learners

First and foremost, over half of the participants (11 out of 20) highlighted the issues related to various language proficiency levels among learners in the same class. Because students often need to acquire knowledge in English in English classes (e.g., read an English passage, listen to a dialogue in English), the participants were concerned that low proficient students may not benefit from AL-based instruction because those students tend to have difficulty acquiring knowledge (content) in English before joining such activities as discussion or group work. In fact, most participants answered that they often saw different amount of output and unequal participation among students when they had students do group work based on the materials students had read or listened in English. For example, one teacher wrote, “I always find group work difficult in a reading class where students with different levels are enrolled. Their reading comprehensions vary widely, and it tends to affect their output in group work.” As students can acquire knowledge (content) in their mother tongue in other subjects, this concern seems quite unique to English subjects.

2. Low motivation to study through AL

Second, nearly half of the participants (8 out of 20) expressed reservations concerning students’ low motivation to study through AL as it could lead to an impediment to their active participation in learning. Regarding this issue, two trends seem to exist. One is students’ preference of lecture-based instruction to AL-based instruction. As pointed out in past research (Matsushita, 2015), students who do not like AL tend to show their preference of the traditional learning style or become unwilling to study hard in AL-based instruction. The participants of this study also found such students’ learning attitudes challenging. One teacher wrote that in a class where students tended to prefer grammar translation methods, they were unwilling to involve in in-group paragraph reading activities. Another is students’ lack of confidence to write, discuss, or present in English. One teacher expressed serious concerns about students with strong anxiety: “Some students lack confidence and they have strong anxiety. Some students can’t be motivated to speak or write in English because of that.” In addition, three mentioned the difficulty of peer critique in regard to confidence, for example, “Most students are not used to doing peer feedback [...] So they are not confident enough to critique others’ work. But if such situations continue, there’ll be no point in having this activity.”

3. Lack of clear evaluation criteria for speaking tasks

Third, assessing and visualizing how students have developed their oral communication skills were also considered quite difficult by a number of respondents (11 out of 20). As Underhill (1987) claimed that teachers’ subjective judgment is one of the key issues in conducting speaking tasks/tests, the participants of this study also raised their concerns about evaluating students’ oral performance subjectively, explaining, “Evaluation criteria depends largely on each teacher’s judgment and they tend to be ambiguous,” and “Even though I use the criteria provided by the program, I tend to evaluate students’ speaking based on my subjective judgment.”

3) How can we help Japanese high school EFL teachers address such challenges and/or difficulties in their classes?

1. Suggestion: Various language proficiency levels among learners

The difficulty related to proficiency levels should also be found in high school EFL settings where, at least in most public high schools, classes are mostly homeroom-based, not language proficiency-based; there will be many students with various English proficiency levels in the same class. In order to overcome this barrier, teachers should consider making use of a flipped learning approach to ensure that enough time for every student to understand and acquire learning contents is provided before activities (e.g., discussion, group work). As Matsushita (2018) claimed, in order for students to engage in higher-order thinking and externalization of cognitive processes, it is necessary that students “acquire knowledge (content) appropriate for such thinking.” In other words, even though AL requires time for activities and thus tends to require the reduction of time for students to acquire knowledge, the latter should not be neglected. In order to achieve this condition in a class full of students with different levels, implementing a flipped learning approach can be effective as it enables students to study various materials at their own pace outside of class in various ways (e.g., study through recorded lectures online, read an assigned part in a textbook, work on a worksheet) (Lee & Wallace, 2017). Utilizing this approach would provide enough time for all students to grasp learning contents beforehand and help teachers set aside enough time for in-class activities.

In addition, teachers should also try to make mixed-ability groups by taking group dynamics into consideration. Though gaps in language proficiency levels may result in poor learning outcome as expressed by some participants, it is not always the case. For example, in Zamani (2016), both low and high proficient students in the same group achieved greater writing performance through cooperative learning. Referring to a sociocultural perspective, she argued that while low proficient learners need interaction with their “more capable peers,” whose proficiency levels are slightly beyond the learners’ themselves, to improve their abilities, high proficient learners also benefit from teaching others to internalize their knowledge. As research on group interaction showed, the establishment of such elements as trust, respect, acceptance and the sense of belonging in a group influences good, positive group dynamics, helping learners benefit from interaction (Pham, 2017). It is thus crucial that teachers understand the positive influence of mixed-ability groups on students’ learning and consider ways to create an atmosphere which fosters positive group dynamics.

2. Suggestion: Low motivation to study through AL

Because of learner diversity, there will always be a certain group of students who would perceive AL as unpleasant or more challenging, whether they be in university or high school. However, as students’ interaction and participation cannot be avoided in order to cultivate their communicative, productive skills, teachers need to consider ways to improve students’ learning motivation for AL at all times. For those who prefer lecture-style classes, there are mainly two things that teachers can take into consideration. One is to provide a clear explanation of the significance of interaction or communication in activities. It is because students’ low motivation to study

through AL may be due to the lack of understanding of how important they are. Mizohata's study (2016) on collaborative learning clarifies this point. Incorporating collaborative learning requires students to understand the principle of PIES—"positive interdependence," "individual accountability," "equal participation," and "simultaneous interaction" (Kagan, 1994). When employing Jigsaw methods in one of his English classes, therefore, he first explained the importance of PIES well. As his students kept this principle in mind during the activity, he reported that they were able to cooperate with each other and achieve their learning goals.

Another is to find ways to make positive group dynamics because students' low motivation to study through AL may be influenced by their pair or group members. As in the case of Zamani (2016), having students with mixed-abilities work together may result in good learning outcome. In addition, if there are unmotivated male students, pairing up female students with them could be effective as past research on gender trends in PBL courses (Yamamoto & Ikoma, 2017) found that female students tended to be more motivated to study under AL-based instruction.

As for those who lack confidence to produce or interact in English, it is important to provide them with ample opportunity to write, speak, and discuss in class because such students' reservation is often due to their lack of experience (King, 2002). In other words, with enough practice and training they can gain confidence to do such tasks. In Fujita, Yamagata and Takenaka (2009), the students who had almost no experience of making presentations worked on English presentations multiple times throughout a semester. The questionnaire results showed that their negative attitudes towards this course task changed dramatically and that the majority of them referred to "gaining confidence to speak in public" as one of the abilities they improved in the course. Also, in Nagasaka (2005), the students with limited experience of essay writing were first reluctant to provide peer feedback, but towards the end of the course their negative perceptions changed greatly.

3. Suggestion: Lack of clear evaluation criteria for speaking task

As speaking tasks have not been implemented as much as reading or grammar tasks in high schools in Japan (Benesse, 2016), issues involving subjective judgement in evaluating speaking should also be one of the major concerns for high school EFL teachers in the near future. As mentioned earlier, it is difficult to avoid subjective judgement in speaking assessment (Underhill, 1987); however, it is certainly possible to minimize it according to the study conducted by Talandis, Jr. (2017), which proposed rich ideas on evaluating students' speaking in the Japanese educational context. In order to evaluate speaking consistently and effectively, he suggested that teachers create their rating scale rubrics—the ones that clearly reflect what they want their students to achieve through speaking tasks/tests—expressed in language that their students can easily understand. One of his suggestions should be particularly helpful for teachers with insufficient experience of conducting speaking tasks. That is, teachers first consult the existing definition proposed by previous research and, rather than just "straight up using someone else's definitions," try to adapt it by reflecting on how they could change the wording or scale levels to "make it fit better" in their own teaching context (Talandis, Jr., 2017). As he claimed, by preparing and sharing such rubrics beforehand, students will also be able to understand learning objectives more clearly; furthermore, the rubrics will be able to serve as great feedback afterwards.

Conclusion

This study aimed to explore specific challenges encountered by Japanese university EFL teachers in implementing AL and, by discussing how such challenges can be overcome, to provide practical suggestions for high school EFL teachers. The results showed that despite the teachers' overall positive impression of adopting AL in teaching English, several critical challenges were also found in their practice. In particular, they raised concerns about students' proficiency levels and learning motivation as well as evaluation criteria for speaking tasks. In other words, the teachers' concerns focused on how to encourage students to participate in activities and how to assess students' oral communication skills. As students' involvement in activities is the first step to achieving externalization of their cognitive processes and fostering their higher-order thinking, this study proposed several ideas to scaffold their participation: implementing a flipped learning approach, making mixed-ability groups by taking group dynamics into consideration, giving clear explanations of the significance of interaction and communication in activities, and designing lessons incorporating various activities involving student production and interaction. In addition, as teachers' own rating scale rubrics not only help them evaluate students' speaking more consistently but also enable students to understand learning objectives and serve as effective feedback, the study also suggested that teachers follow Talandis, Jr.'s idea (2017) and create their own rubrics that fit well in their teaching context.

Though this study attempted to provide insight into the challenges associated with the implementation of AL in the Japanese EFL context, it is not without limitations. First, as the sample size of this study was small, the future study should examine this topic with larger sample size. Second, since the instrument for this study was limited to questionnaire, alternative instruments such as interviews should also be included for the purpose of investigating the challenges more deeply.

Appendix

Questionnaire (English version)

Q1. What is your area of specialization?

Q2. Which institution do you currently work at?

College/University High school Junior high school Elementary school
National institute of technology Language school Others []

Q3. Please tell us your English teaching experience.

3 years or less 3-5 years 5-10 years
10-15 years 15-20 years 20 years or more

Q4. What kinds of English classes have you taught? (e.g., Writing, Reading, TOEIC etc.)

Q5. Below are some of the existing techniques used in AL-based instruction. Please tell us if you “have implemented” or “often implement” the following techniques in your classes. (If there is an item that you have never implemented, please leave it blank.)

	Explanations	have implemented	often implement
Think-Pair-Share	Think individually for a few minutes, and then discuss and compare their responses with a partner before sharing with the entire class		
Round Robin	Generate ideas and speak in order moving from one student to the next		
Buzz Groups	Discuss course-related questions informally in small groups of peers		
Talking Chips	Participate in a group discussion and surrender a token each time they speak		
3-Step Interview	Interview each other and report what they learn to another pair		
Critical Debates	Assume and argue the side of an issue that is in opposition to their personal views		
Note-Taking Pairs	Pool information from their individual notes to create an improved, partner version		
Learning Cell	Quiz each other using questions they have developed individually about a reading assignment or other learning activity		
Fishbowl	Form concentric circles with the smaller, inside group of students discussing and the larger, outside group listening and observing		
Role Play	Assume a different identity and act out a scenario		
Jigsaw	Develop knowledge about a given topic and then teach it to others		
Test-Taking Teams	Prepare for a test in working groups, take the test individually, and then retake the test in groups		
TAPPS (Think Aloud Pair Problem Solving)	Solve problems aloud to try out their reasoning on a listening peer		

Send a Problem	Try to solve a problem as a group, and then pass the problem and solution to a nearby group who does the same; the final group evaluates the solutions		
Case Studies	Review a written study of a real world scenario and develop a solution to the dilemma presented in the case		
Structured Problem Solving	Follow a structured format to solve problems		
Analytic Teams	Assume roles and specific tasks when critically reading an assignment, listening to a lecture, or watching a video.		
Group Investigation	Plan, conduct, and report on in-depth research project		
Affinity Grouping	Generate ideas, identify common themes, and then sort and organize the ideas accordingly		
Group Grid	Are given pieces of information and asked to place them in the blank cells of a grid according to category rubrics		
Team Matrix	Discriminate between similar concepts by noticing and marking on a chart the presence or absence of important, defining features		
Sequence Chains	Analyze and depict graphically a series of events, actions, roles, or decisions		
Word Webs	Generate a list of related ideas and then organize them in a graphic. Identifying relationships by drawing lines or arrows to represent the connections		
Dialogue Journals	Record their thoughts in a journal that they exchange with peers for comments and questions		
Round Table	Take turns responding to a prompt by writing one or two words, phrases, or sentences before passing the paper along to others who do the same		
Dyadic Essays	Write essay questions and model answers for each other, exchange questions, and after responding, compare their answers to the model answer		
Peer Editing	Critically review and provide editorial feedback on a peer's essay, report, argument, research paper, or other writing		
Collaborative Writing	Write a formal paper together		
Team Anthology	Develop a compilation of course-related reading with student reaction to the material		
Paper Seminar	Write and then present an original paper, receive formal feedback from selected peers, and engage in a general discussion of the issues in the paper with the entire group		

Q6-1. Do you agree with the implementation of Active Learning (AL) in English classes? Please select the answer that best represents your opinion.

Agree Somewhat agree Somewhat disagree Disagree

Q6-2. Please tell us your reason for Q6-1.

Q7. Please tell us your experience regarding the implementation of Active Learning (AL) in English classes. In conducting AL-based instruction, have you encountered any difficulties or challenges that are unique to English subjects? If you have any, please share your experience here. What kinds of difficulties or challenges have you experienced in implementing AL in teaching English?

Acknowledgements

This work was supported by JSPS KAKENHI Grant Number JP17H07248.

The author also wishes to express her deep gratitude to the teachers who kindly participated in the survey.

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*The Efficacy and Implementation of the ESP Approach:
Assessment of ESP Textbook for Physical Therapy*

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

In response to university reform movement in 1991, in which deregulation of the University Establishment Standards is executed, a popular practice in many Japanese universities has been to design and implement English for Specific Purposes (ESP) programs. One of the difficulties encountered in doing this is finding appropriate ESP textbooks. The purposes of this study include introducing our university original ESP textbook for Physical Therapy (PT) and revealing students' perceptions of the relationship between English learning and the textbook. Data include descriptions of the textbooks and the results of a questionnaire survey in which 108 PT majors participated. Survey data were stored in SPSS software and analyzed through descriptive and inferential approaches. The data seem to justify the efficacy of the ESP textbook for current English language instruction. However, although the textbook writers carefully chose topics that they believed would be interesting for students and match the needs of the field as well as the course goals, the study found that the writers' beliefs do not always match with students' interests. For example, some students labeled certain topics as very boring. The study suggests that topics need to be carefully examined and selected for the next textbook revision. The contents in the textbook are modified and revised every year so that it becomes practical and updated. In order to motivate students, their needs and interests should be taken into account. Moreover, collaboration between faculty in the related field and language teachers is a key for improving the ESP textbook.

Keywords: ESP approach, ESP textbooks, physical therapy, students' perceptions

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Introduction

English for Specific Purpose (ESP) is an approach used for teaching English oriented for specific purposes in specific fields. ESP is designed to help learners master relevant vocabularies, expressions, and other communication requirements needed in specific fields so that they can gain relevant communication skills and function well in those fields. It has gained interest due to globalization. In Japan, the Ministry of Education, Culture, Sports, Science & Technology of Japan (MEXT), has been working on enhancing English education throughout its educational system to improve Japan's competitiveness in the global business market as well as prepare for the upcoming 2020 Tokyo Olympics. At the tertiary level, MEXT has been focused on liberalization, deregulation, and increased institutional autonomy since the reform in 1991, in which MEXT executed deregulation of the University Establishment Standards. The shrinking number of applicants has led to many universities lowering entry standards. These universities have to deal with a variety of students in terms of their English proficiency, motivation, and future goals and occupational fields. In such situations, new methods and materials for teaching English have been sought, and ESP is believed to be beneficial and useful for students and their futures. It is also considered as a good strategy to prove institutional productivity and efficacy. Currently, a growing number of universities are implementing ESP in their curriculum to prepare students to function well in their future occupational fields as well as in the global society.

Problem Statement

Having appropriate materials is crucial to leading a successful ESP program. One of difficulties in designing and implementing an ESP program is to find appropriate ESP textbooks. ESP textbooks should be matched with students' language proficiency levels and their knowledge in the specialized field along with authentic and updated materials. In many cases, the ESP instructors responsible for the decision making on the materials actually have limited content knowledge or experience in the specific fields. In such cases, commercially available textbooks are helpful; in a few cases, universities create their own original ESP textbooks on which language experts and experts in the fields collaborate.

Significance of the study

Although the ESP approach is beneficial and useful, few appropriate ESP textbooks are available in rehabilitation fields. In such a situation, our university created English textbooks with a collaboration of English teachers, subject teachers, office workers, and students in 2008. There are four types of textbooks: English I textbooks target the first year students majoring in physical therapy, occupational therapy, and welfare, and psychology. The English II textbooks target the second year students, and they are major-specific textbooks with three versions for Physical Therapy (PT), Occupational Therapy (OT), and Welfare and Psychology (WP) majors.

The current study evaluates the ESP approach by studying its implementation in a PT course through the introduction of our original ESP textbook. It also intends to reveal students' perceptions on the textbook and instructions. The textbook is revised every year, responding to the needs of students and for updating materials. However, the

systematic review of the textbook has been performed only once, the year after the first textbook was published. According to the results of the placement tests, the English proficiency level of students has been steadily decreasing, mainly due to the decrease in applicants. In order to respond to such a situation, a need-analysis regarding the textbook and instruction is necessary. Analysis of students' learning and perceptions could provide useful guidelines for examining whether the textbook and instruction match with students' needs as well as measuring attainment the textbook's aims. Since a few university produced original ESP textbook for physical therapy major are available for review, this research will hopefully provide a stepping-stone for those planning to create or review ESP textbooks in similar fields.

The purposes of this study

The target university has provided content-based instruction using original ESP textbooks for the past ten years. During this time, the university has observed the issues related to students' decreasing levels of English proficiency. Thus, it is urgent to review the current English curriculum, including instruction and the textbook. This study examines whether the aims and the contents of the textbook and instruction would meet the aims of an English curriculum as well as students' needs and interests in this context. Ultimately, this study would provide a reassuring guide to improving not only our program but also other programs in similar fields.

To achieve the above stated purpose, the following two objectives were formulated. The study set out to

1. Obtain information on students' perception and attitudes toward English learning and ESP; and
2. Obtain information on students' perceptions of the textbook and current English instruction

Research design

To achieve two objectives, the questionnaire consisted of four multiple-choice questions and 11 Likert-scale questions. Open-ended questions were included at the end of the questionnaire to obtain individual opinions and suggestions for the textbook and English classes (A copy of the questionnaire is available on request). The questionnaire was completed in class. The purpose of the study, students' confidentiality, and the right to accept or refuse participation were explained. Participants were also advised that responses would be anonymous and would not influence their grades. The data were stored in SPSS software for descriptive approaches, including rank/order, numerical interpretation, distribution, and frequency. At the same time, correlational analysis was employed to assess the relationship among variables.

Participants

The participants were 108 second-year students majoring in PT, including 79 males and 29 females.

English curriculum

English instruction at our university has followed the principles of Content Based Instruction (CBI) and English for Specific Purpose (ESP), using the original ESP textbook in an effort to improve students' practical English skills as well as their motivation. Almost all contents are written in English although the index page at the end contains Japanese translations.

English II-1 and II-2 are required courses for second-year students in the Health Science Department. There are 5 classes for English II, including two PT major classes, two OT major classes, and one WP major class. Classes consist of mixed proficiency level students. Each PT class has approximately 55 students. These classes use ERP specific major textbooks for PT, OT, and WP.

The aims of English II textbooks are to help students build basic communication skills; to improve other language skills needed in the field; and to broaden their knowledge of the terms, phrases, and expressions in the specific fields. Materials have been developed through the coordinated efforts of professionals in the areas of OT, PT, social welfare, psychology, and basic medicine. In this process, English instructors discuss with the instructors or professionals in the field to refine the content. Some materials are chosen from news and scientific journals, government organizations including World Health Organization (WHO), United Nations (UN), and broadcasters such as CNN, BBC. Dialogues are suggested by professors from the major fields.

Three ERP Part 2 textbooks include the same first three units as a common section for all majors, covering current topics in basic medicine and rehabilitation. The common units deal with major specific topics.

Contents of the textbook:

- Units for Current Topics in Rehabilitation
 - Unit 1 Regenerative medicine & Rehabilitation
 - Unit 2 Brain & Its function
 - Unit 3 International Classification of Functioning (ICF), Disability & Health
- Units for Physical Therapy
 - Unit 1 Stroke
 - Unit 2 Osteoarthritis
 - Unit 3 Parkinson's disease
 - Unit 4 Spinal Cord Injury
 - Unit 5 Diabetes
 - Unit 6 Lower Back Pain
- Appendix
 1. Medical terminology (Muscles)
 2. Glossary
 3. Physical therapy

The CD used for the listening portion of each lesson was recorded by native speakers.

Format of each lesson: Every textbook lesson is described in the unified format (1 and 2) and similar format (3 to 7) as follows.

1. Study Goals: Each lesson indicates study goals in terms of content, grammar,

terms/expressions, and skills and activities.

2. Key terms: Vocabulary lists which are the form of the quiz in which students required to match English and Japanese.

3. Pre-reading activity, Reading, and reading comprehension

4. Listening and listening comprehension

5. Grammar

6. Terminology (prefix, root, suffix for medical terms)

7. Expressions related to physical therapy

e.g., Body position, action, and instructions

Giving advice

Joint movement words

Range of motions

Anatomical terms and directions

Praise and encouragement words

Use of assistive devices

Adverbs of frequency

Muscles, bones, organs

Pains

Dialogues with patients

Additional contents: The followed contents are added and handouts are prepared.

Case studies (Sports injury and Physical Therapy)

Paragraph writing (Instruction for body movement)

Quizzes and final examinations

After each unit, students take a quiz. A study guide is prepared for the final examinations, which are administered at the end of each semester.

Grading system

Students are graded by the scores of the final examination (40%), quizzes (50%) and writing assignment (10%).

Conclusions

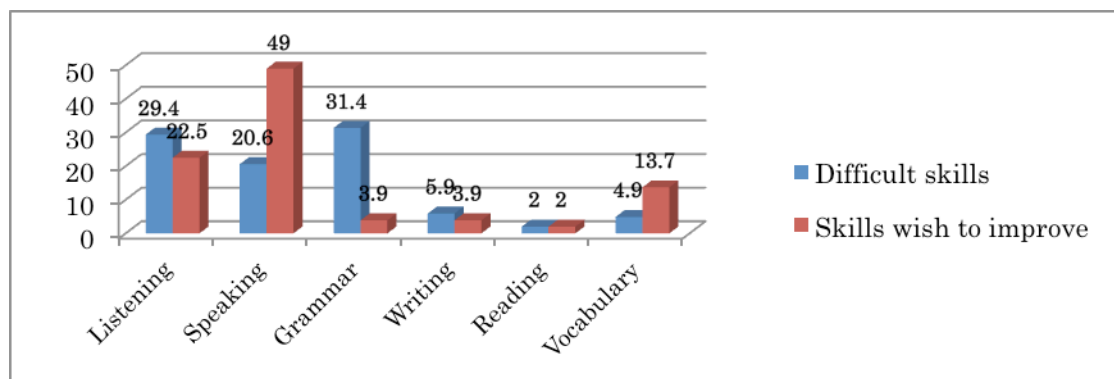
Findings

The results of the study address the two objectives of determining (1) students' perspectives of English skills and (2) students' perceptions of the textbook.

1. Students' perceptions of and attitudes toward English learning and ESP

Perception of English skills

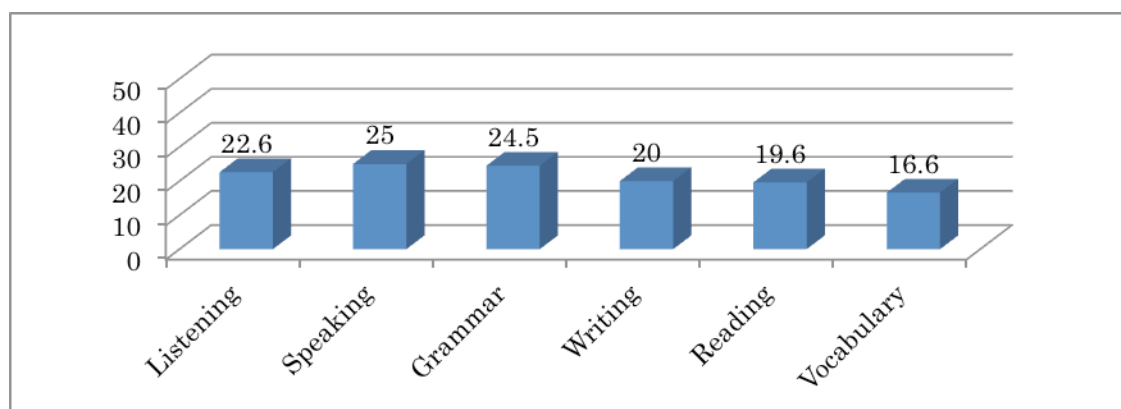
The following graph shows students' perception on the most difficult skills and skills students most want to improve. The number on the top of each bar shows percentages of the whole.



Graph 1 Difficult Skills and Skills to Improve

As indicated in the above graph (Graph 1), about one-third (31.4%) of students feel grammar is the most difficult skill, followed by listening (29.4%). Only 2% students claim reading skills as the most difficult one. Regarding skills that students want to improve, 49% of students want to improve their speaking skills the most, followed by listening (22.5%). The lowest responses were for reading skills (2%).

The following graph shows students’ perceptions of improved skills, in response to a question asking which English skills improved through the year. Multiple answers were allowed for this question.



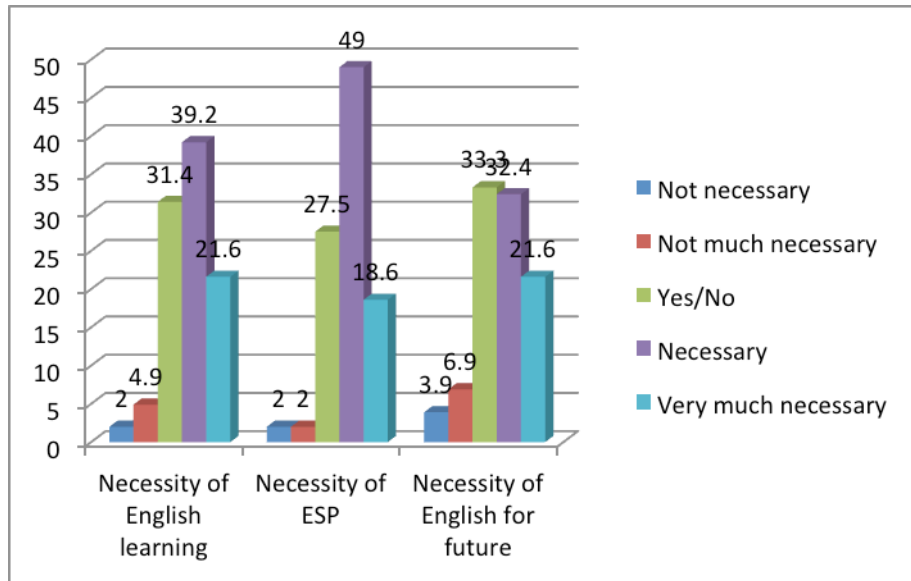
Graph 2 Improved Skills

All students responded that their English skills had improved after completing English

As indicated in Graph 2, about a quarter of the students believed their speaking skills and grammar knowledge had improved over the year, followed by listening skills (22.6%). On the other hand, fewer students (16.6%) reported that their vocabulary had improved.

Attitudes and perception toward English and English learning

Graph 3 reveals students’ thoughts regarding the necessity of English learning, ESP, and English for future.



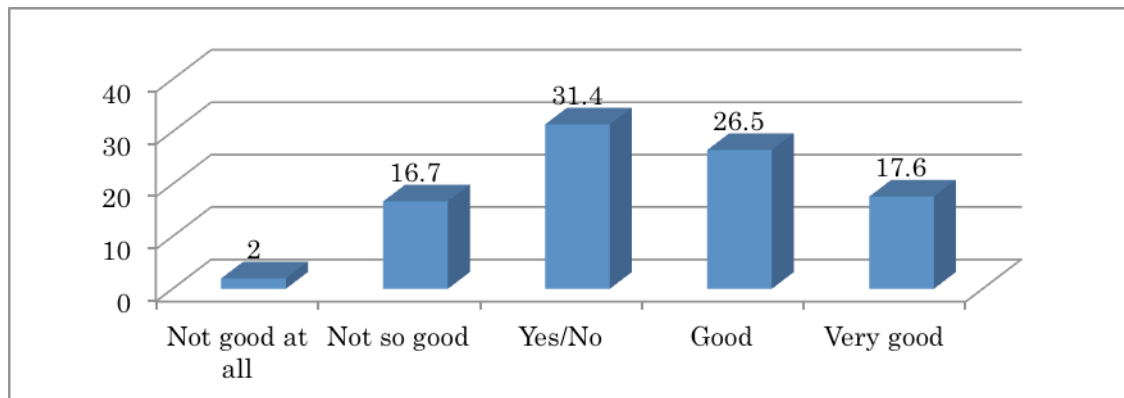
Graph 3 Students’ Perceptions of English Learning

As indicated in Graph 3, more than half of the students believe that studying English is necessary (39.2% necessary; 21.6% very much necessary), that ESP is necessary (49% necessary; 18.6% very much necessary), and that English is necessary for their futures (32.4% necessary; 21.6% very much necessary).

2. Students’ perceptions of the textbook and instruction

Textbook

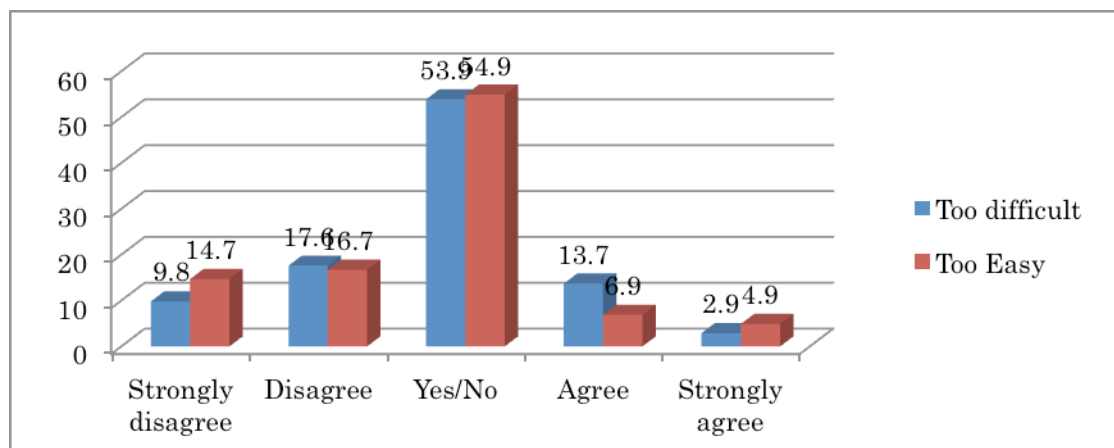
The ERP Part II is primarily written in English. Students were asked to judge the primarily English-language textbook. The graph below shows the result.



Graph 4 Students’ Opinions of English-Language Textbook

As indicated in Graph 4, 18.7% students are not in favor of the textbook written in English.

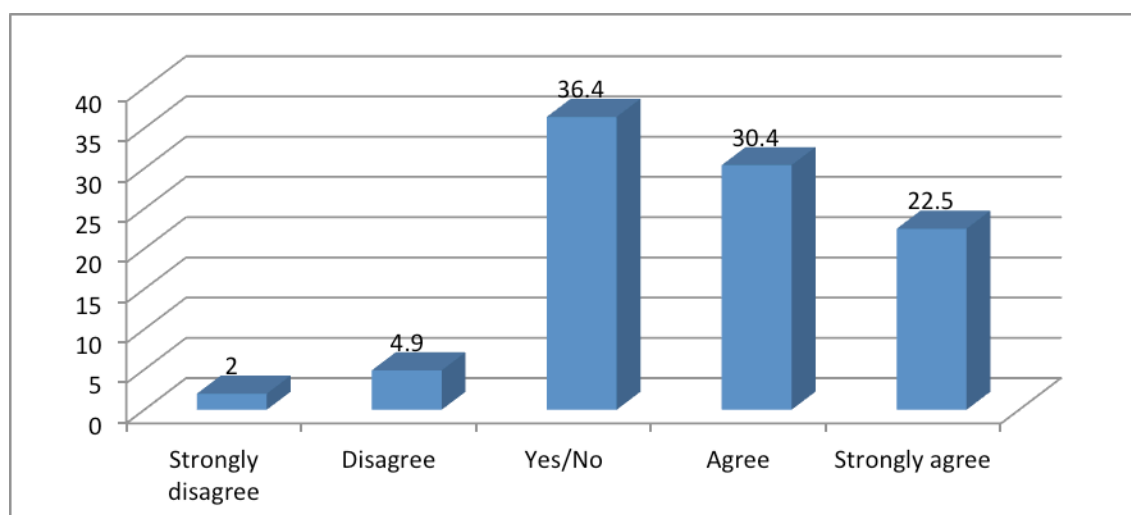
The graph below shows students’ perceptions of the content of the textbook in terms of difficulty.



Graph 5 Students’ Perceptions of Textbook difficulty Levels

As the above graph indicates (Graph 5), 16.6% (13.7% agree; 2.9% strongly agree), students feel the textbook is too difficult, and 11.8% (6.9% agree; 4.9% strongly agree) believe it is too easy.

The following graph shows how students’ feel regarding the usefulness of the textbook.

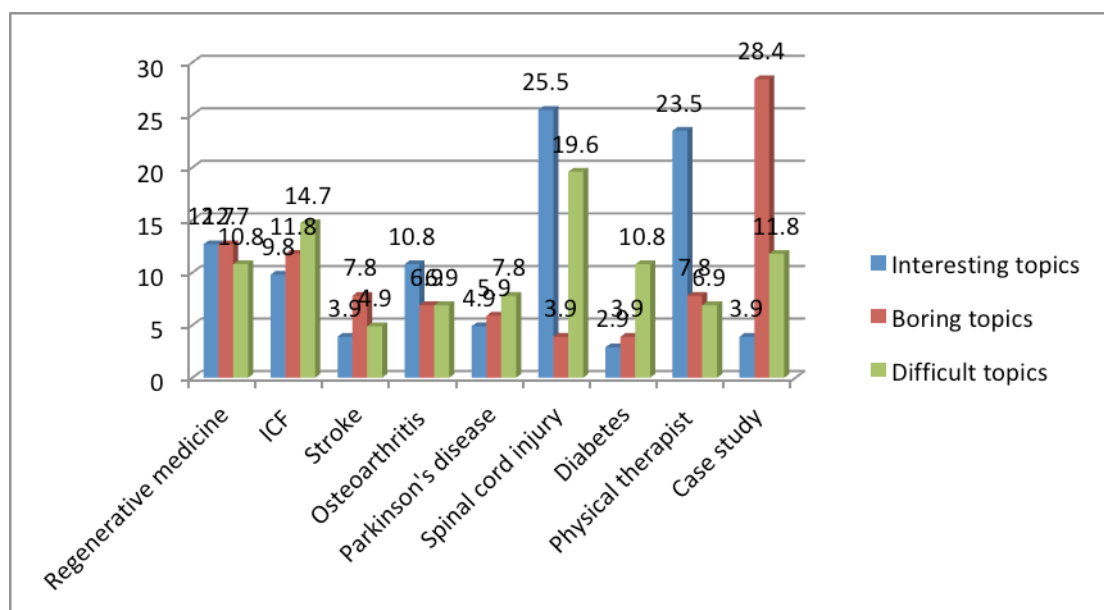


Graph 6 Student’s Perceptions of Textbook Usefulness

As indicated in Graph 6, 52.9% (30.4% agree; 22.5% strongly agree) of the students reported that the textbook content is useful for their future.

The topics covered include Regenerative Medicine; International Classification of Functioning, Health, and Disability (ICF); Stroke; Osteoarthritis; Parkinson's disease; Spinal cord injury; Diabetes; Physical therapist; and Case studies.

The following graph shows students’ responses on interesting, boring, and difficult topics.



Graph 7 Students' Perspectives on Textbook Topics

As Graph 7 shows, 25.5.1% of the students are interested in the topic of spinal cord injury, followed by physical therapist (23.5%). The topics judged as “boring” include Case study (28.4%) and Regenerative Medicine (10.8%). The students reported that the most difficult topic was Spinal cord injury (19.6%), followed by ICF (14.7%).

The following table shows the correlational analysis among variables (interesting, boring, and difficult topics).

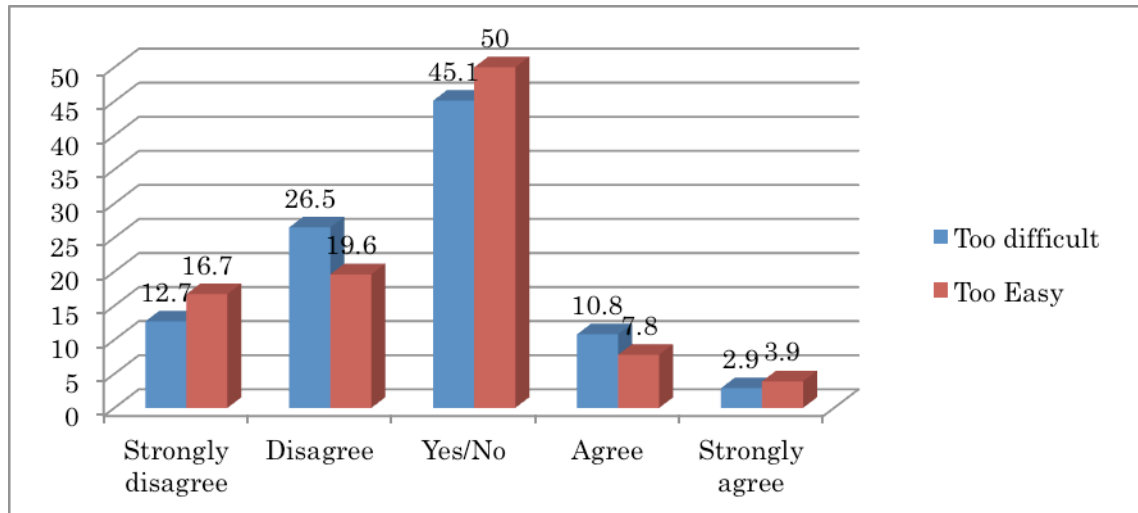
Table 1 Correlational Analysis of Topics

		Interesting	Boring	Difficult
Interesting	Pearson's correlation	1	-.135	.047
	Sig. (2-tailed)		.203	.647
Boring	Pearson's correlation	-.135	1	.096
	Sig. (2-tailed)	.203		.365

Pearson's correlation analysis confirmed there are no significant correlations among the three variables as indicated in Table 3.

Instruction

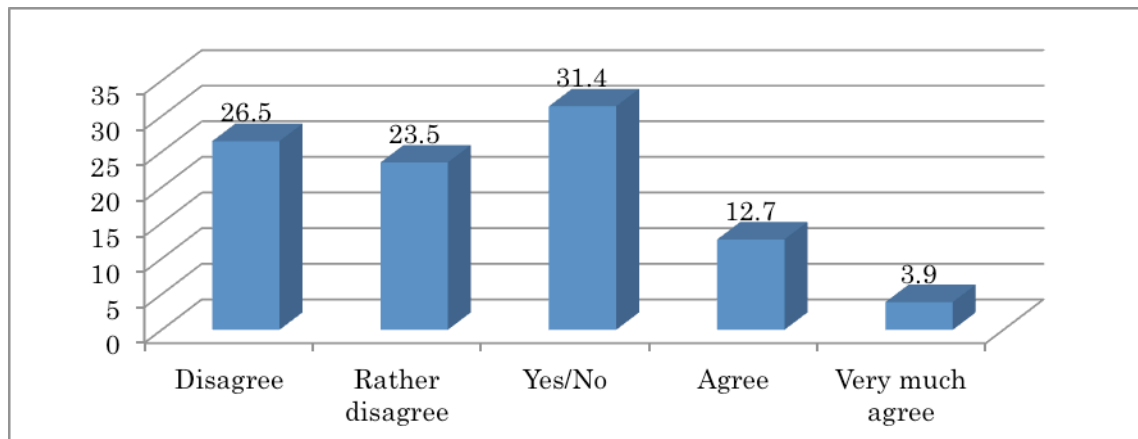
The following graph shows how students feel about the level difficulty of instruction.



Graph 8 Students’ Opinions on Instruction Difficulty

As is shown in Graph 8, 11.7% of students (7.8% agree; 3.9% strongly agree) believe instruction is too easy, and 13.7% (10.8% agree; 2.9% strongly agree) perceive that the instruction is too difficult.

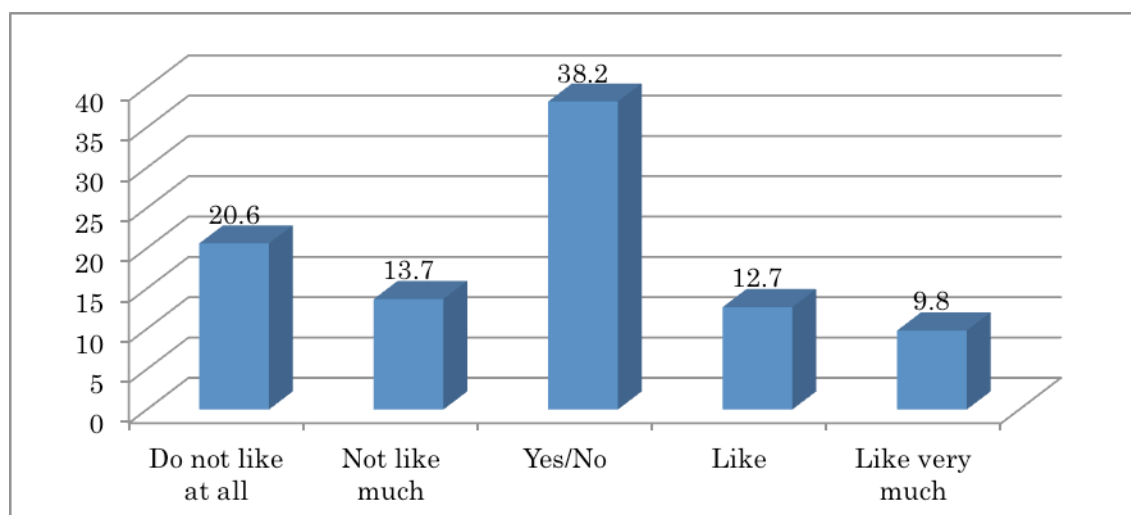
The next graph indicates how students view English as a Medium of Instruction (EMI).



Graph 9 Students’ Perceptions of EMI

In terms of EMI, about half of the students (26.5% strongly disagree, 23.5% disagree) disagree with using this method.

English class involves a variety of activities for students to work in pairs or groups. Students were asked how they feel about such group or pair work.



Graph 10 Students' Perceptions of Group/ Pair Work

The results in Graph 10 indicate that approximately one third of students do not like group work.

Discussion and Implications

The study reveals that very few students believe the textbook or instruction is too difficult or too easy, which appears to confirm that the difficulty level is appropriate for the participants. When students were asked what skills they find difficult, the most frequent answer was grammar. However, only a few students want to improve this grammar skill. Instead, they want to improve listening and speaking skills, which are considered to be comprehension and self-expression abilities in communication. The research found that all students who responded reported that their English skills have improved since taking English II. During class, active learning strategies, which include grouped or paired student activities, are implemented. Students work together for comprehending reading materials, for listening tasks, or when engaging in practice conversation. Such engagement in various activities may lead to improved skills. However, compared to other skills, fewer responses pointed to vocabulary knowledge as an improved skill. Vocabulary knowledge is essential for the ESP approach. It is believed that with knowledge of vocabulary, comprehension, and expression abilities can be possible. Therefore, consideration of activities for vocabulary and grammar improvement in the textbook and instructional activities seems necessary.

As discussed above, almost all contents of the textbook are written in English, and the study found the majority of students favor this. Occasionally instructors use only English, and students do not like such approaches. As with ESP, EMI also is popular in higher education in Japan. However, if the students' level of English proficiency or knowledge of the specified field is insufficient, the effectiveness of EMI remains a question. The results of our study show students have reluctant attitudes toward EMI despite their positive attitudes toward the textbook written in English. This reluctance together with their relatively lower English proficiency may influence their motivation for learning. Therefore, at least at this time, it seems that the safer choice is not to introduce EMI in our university.

Regarding activities for students working in pairs or small groups, some students

report reluctance to cooperate and depend on other students. According to our data for the placement tests and final examinations, there is a huge gap between the highest and the lowest scores, and students with lower scores tend to show low motivation in such group activities. In such mixed-ability classes, there are students with different proficiency levels, learning styles, and motivational levels. In order to respond such differences, active learning practices, in which students participate in various types of activities, have been facilitated. However, it is not easy to have all students actively participate in all of the activities. Designing other activities, such as engaging in research, discussion, or peer feedback, can improve the outcomes for greater numbers of students. Even low-stake activities may be added so that students have more opportunities to find suitable ways to participate in activities. Moreover, introducing a learning log, in which students record their learning and reflections, might help students to become responsible for their learning and hopefully becoming independent, active learners.

In terms of the topics of the university's original textbook, spinal cord injury is perceived as the most difficult topic, but students are interested in this topic the most. Students are also interested in the topic of physical therapists that teaches about PT jobs, procedures of support, and uses of orthosis. Meanwhile, the students claimed that the most boring topic was the case study, which describes the cases of athletes and their injuries in relation to PT. Such results seem to provide a warning for textbook writers. Our language instructors and specialists in the field carefully chose topics that are interesting and that match with needs of the fields as well as with the course goals. However, the study found mismatches of writers' intentions and students' interests despite the fact that many students wish to learn ESP. Selecting topics only from the view of practitioners may be biased or may not meet the needs and interests of the students. For the next revision of the textbook, taking into consideration the topics that match with students' needs and interests is necessary. Feedback from the students and discussion with the specialists may help solving this issue. At the same time, keeping an eye on current news and conducting genre analysis related to the discipline can help with finding up-to-date materials that take into consideration students' levels of language proficiency, knowledge in the field, and interests.

Limitation and implication of further study

The sample size of this study was 108 PT students, which may be considered as small. At the same time, the deviation value of the university is the lower rank and, thus, students' English proficiency levels are relatively low. Such conditions make generalization of the study results difficult. However, it has been reported that cases related to ESP for physical therapy are rarely reported. Therefore, it is hoped that the data stemming from this study will be able to add data for research on the ESP approach and textbooks for physical therapy.

Another limitation of this study is an evaluation method. The study evaluated the textbook and instruction through the students' perception. The methodological triangulation, employing surveys on instructors, conducting interviews, and using evaluation models or criteria can be suggested for the further study. Such an approach is believed to view curriculum from different angles and therefore to enhance the validity of the study.

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Developing and Creating Multimedia for Learning Values of Thai Literature¹

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

This qualitative research aimed to creating efficient multimedia for learning values of Thai literature and producing it as an innovative media. Processes of developing the required media resulted from discussions of five scholars analyzing and sorting out effective ways of making the multimedia. Findings of the research were concluded as these: 1) contents of the media should focus on stories and values of the literature; and 2) storyboards showed clear details of the contents and emphasized on three main values of Thai literature, including aesthetic and social aspects and the moral. Six classical Thai literature selected for creating multimedia were: Niras Phukaotong; Pra Apaimanee; Lilit Talengpai; Mathana Phatha; Khunchang Khunpan; and Sam Kokh. Processes of developing the multimedia were: 1) writing scripts and drawing storyboards; 2) storyboards were checked by scholars; 3) reviewing storyboards; 4) discussions between content writers and media producers; 5) gathering of resources for media production, including drawing characters; video filming; games designing; animation cartoon making; graphic designing; collecting of related motion pictures, state performances, and television dramas for parts supporting; and sound making, including narrations, conversations, and prose and poetry chanting; 6) multimedia production of the six classical Thai literature; 7) reviewing of the multimedia by scholars; and 8) revising of the multimedia and the completion media as teaching materials for schools and universities.

Key words: developing; multimedia creating; learning values of Thai literature

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¹ This research was funded by The Thailand Research Fund (TRF), year 2013.

Introduction

The general challenge of teaching literature is the dried teaching method which creates boring learning. The teacher focuses on “story reading” by only memorizing the content according to the course. The learner thinks that the reading story is absurd and outdated and the learner has the bad attitude toward literature study. In addition, the teacher becomes guide leading to limitation or blockage of learner’s judgement. (Praphasri Seehaumphai.2007:35) The teachers trend to create learners’ stress and difficulty of literature reading. The teachers teach the learner to learn by heart about life and realize about nation’s culture and society. So after learning the literature, the learner should be able to adapt the knowledge and idea to their daily life. This teaching method is against the objectives and intention of the program which specify within Thai learning group because instead of loving the literature, the learner hates it. This is the crisis of teaching Thai literature which is struggling in the today society. (Phannarong Rattanachai. 2012:96-98)

As mentioned problem of teaching literature, if teacher ignore problem solving and let the literature more difficult and apart from new generation, the literature becomes the well-kept antiques only representing the flourish of language culture in the past without studying gratefully and seriously. So sorting out the efficient teaching strategy is the importation and urgent mission challenging all level of literature teachers.

National Education Act of B.E. 2542 (1999), section 4, code 22-23 and section 9 code 63-64 set the guideline of education management and technology that emphasizes the importance of developing teaching media and learning resources in order to improve the quality of learners and teachers (Department of Curriculum and Instruction Development, Ministry of Education. 2001: 99) To organize teaching with a variety of learning methods supports the learners to use the resources and medias as self-study and be able to link their knowledge systematically. Using the learning media that is appropriated to the learner’s capability and interest enhance the learner’s competency and success in learning. Therefore, it is necessary to use the media in Thai learning group.

In the modern information technology society where the advanced knowledge, and communication technology are unlimited. The technology is the key component that helps the learner learn and improve by using the learning media and various resources. The Master plan for information technology and communication for Ministry of Education 2011 – 2013 defines the second strategy to support the teaching with information and communication technologies to enhance the efficiency of education in Thailand. There are 4 measures that apply ICT in teaching in order to achieve the mentioned strategy which are 1) Improve the teaching format/methods in every level to apply ICT as the important component in teaching 2) Increase the quantity and quality of the learners to have higher ICT skills 3) promote the education in all levels applying ICT as teaching tools 4) develop the teaching media and contend in term of quantity and quality. (Information and Communication Technology Center, Office of the Permanent Secretary, Ministry of Education. 2010: online)

To organize the Thai teaching activities in accordance to its master plan, it is necessary to use Information and Communication Technology (ICT) and educational

technology to support Thai education management. Information Technology and Communication (ICT) is comprised of key technologies such as computer technology and communication technology. It can be applied in a variety of teaching and learning styles, such as Computer Assisted Instruction (CAI), Web Based Instruction (WBI), learning through electronic and Internet (e-learning), called as e-Learning (Electronic Learning) and Mobile Learning (m-Learning), etc.

The use of information technology in teaching and learning is applied in various forms according to the suitability of each subject. The popular technology in teaching and learning is multimedia which use computers and the software programs to convey the message through variety of multimedia such as colorful text, graphics, animation, audio and video. When the user is able to control the media to present as desired, this system is called multimedia interaction. With the multimedia interaction, the user is able to manage through keyboard, mouse, pointer, etc.

(Palin Piriyasurawong. 1999: 12) So the lesson in multimedia combines the multiple Medias to present various information including text, still images, animations, narratives, and music with interaction which make the lesson presented through the multimedia more livelily.

The lessons through multimedia is considered as one of important media because the learners are able to interact and respond immediately. The multimedia presented with motion, voice and illustration motivates the learning and more interest in lesson content. Therefore, the learners achieve the targeted learning objective. Another advantage of the lesson presented through multimedia is that it can be applied to anyone. Some lessons are created to interact with different level of the learners because the lesson through multimedia focuses on self-study and the learners have to use their on ability to understand the lessons. Therefore, designing the lesson in multimedia is so important that the producer has to design according to content and learning objectives. Thai literature learning has various content and aims to stimulate the reader to appreciate the value of Thai literature on human life as aesthetic, social aspect and the morals. So if the subject of Thai literature learning is developed as a lesson through multimedia, these lessons will deeply affect Thai literature learning. In addition, they can motivate the learner to become more aware of the value of Thai literature on human life in three aspects efficiently.

Based on mentioned importance of this, the researcher develops the learning values of Thai literature through multimedia in order to sort out how to manage Thai learning literature to provoke more interest in learning values of Thai literature according to its objective. This study is to find out how to develop the learning values of Thai literature through multimedia according to its learner's requirement in order to support their learning value of Thai literature profoundly.

In addition, the research will find out how the development of the learning values of Thai literature through multimedia effect to Thai literature's learners.

Objectives

To sort out how to create the learning values of Thai literature through multimedia
To develop and produce the multimedia for the learning values of Thai literature

Population and Sample

1. Population and sample for objective 1

1.1 Population is the scholars in teaching Thai literature in university education holding the academic position of assistance professor or higher level and Ph.D.

1.2 Sample consists of five scholars in teaching Thai literature in different universities holding the academic position of assistant professor or higher level and Ph.D.

2. Population and sample for objective 2

2.1 Population is the scholars in educational technology in university education holding the academic position of assistance professor or higher level and Ph.D.

2.2 Sample consists of three scholars in teaching Thai literature in different universities holding the academic position of assistant professor or higher level and Ph.D.

Research Tools

Questions used in the discussion of the scholar to brainstorm the opinion on the development of learning values of Thai literature through multimedia in 8 topics.

Assessment of the multimedia's storyboard for learning values of Thai literature

Assessment of the multimedia for learning values of Thai literature

Research Processes

1) Step 1 (to reflect objective 1)

The research organizes the group discussion among the scholars regarding to the development of learning values of Thai literature through multimedia to provoke the learner's interest to be capable to learn the literature's philosophies and values profoundly. There are three group discussions among scholars and taking six hours per time in following topics:

First Discussion: the scholars discuss on the challenges in teaching Thai literature according to the survey in step 1 to conclude the solution in Thai literature teaching

Second Discussion: the scholars select 6 Thai literatures and discuss on their values which must be taught to learners in order to create truly the learning values of Thai literature.

Third Discussion: the scholars discuss on 6 literatures to sort out the development of learning values of Thai literature through multimedia. The scholars present key content and multimedia presentation strategy.

2) Step 2 (to reflect objective 2)

2.1 The researcher creates the storyboard multimedia for learning values of Thai literature according to the guideline of the development of learning values of Thai literature through multimedia.

2.2 The researcher presents the storyboard of learning values of Thai literature to the scholars' consideration, recommendation and quality assessment.

2.3 The researcher corrects the storyboard of learning values of Thai literature according to the scholars' recommendation until completion.

2.4 The Researcher produces the multimedia for learning values of Thai literature according to the storyboard.

2.5 The researcher presents the multimedia for learning values of Thai literature to the scholars for their consideration, recommendation and quality assessment.

2.6 The researcher corrects the multimedia for learning values of Thai literature according to the scholars' recommendation until completion and readiness to apply to Thai literature teaching classes.

Research Results

1. Guideline for managing the learning values of Thai literature through multimedia

The researcher invites five scholars in teaching Thai literature to the group discussion: Assoc. Prof. Maneepin Phromsuthirak, Ph.D, retired, Faculty of Arts, Silpakorn University

Assoc. Prof. Thida Mosikrat, Faculty of Liberal Arts, Huachiem Chalermprakiet University

Assoc. Prof. Somporn Ruamsuk, Faculty of Education, Silapakorn University

Assist. Prof. Somkiat Khuthaweekul, Faculty of Humanities, Srinakharinwirot University

Assist. Prof. Mookda Liplap, Faculty of Humanities, Phranakorn Rajabhat University

The researcher organizes the three group discussions among scholars to brainstorm on the development the learning values of Thai literature through multimedia by setting 8 discussion topics according to approved tools.

The results of the discussion were as follows. The scholars recommended that literature study's important values were aesthetic value. The aesthetics in literature is the presentation and use of the language. In tern of language usage, the researcher has to make the learner understand the meaning and be able to select the right word for example; ant represents the diligence, etc. For Social and cultures, the researcher has to find how to focus on the content, life experience in literature which the learners are able to apply to their daily life. Lastly, the scholars questioned about the morals if there is any life experience in literature which is applicable.

To select the content for multimedia, it has to cut some or add some for the benefit of the most learner. In the storyboard, the content should consist of narrative, analysis, synthesis of the exercise. The content should have sample and stimulation by language usage for example, questioning, using references to present the values. In Vessantara Jataka, the student told that Vessantara was the bad father because the learner did not understand the key message of this story. The teacher could change by referring the poem to explain or raising the questions by correct guideline of the correct answer but not to block their idea. To create the content, the researcher has to

think of the values of each story and how it can be introduced. The teacher is able to analyze, guide and use the word to present how important story and character are.

Producing the multimedia must support the learner to see the values and the teacher must tell the students by giving example. It can combine the existing dramas and then make as the comic. The multimedia about the literature should promote self-study. The multimedia should attract the learner to follow maybe by using game in different challenge to introducing the story. As children like comics, the comic characters should present the values in the multimedia. The researcher must think which values and how to introduce the values according to literature.

To produce the multimedia, there are teaching tools, narration, game to analyze, different format in the stories to introduce the morals. In addition, it should include analysis and synthesis in different aspects. The multimedia can also be in mind mapping format to teach the learner in memorizing and thinking systematically. The content is the summarized story with colorful picture that allow the learner to think systematically with mind mapping. The children has the liberty to think in filling word. They will answer broadly what the value of the literature are. There are stimulator and leader. Two Medias used in teaching are 1) illustration presenting the interesting narration, 2) introducing the content by characters or comic, conversation should be short.

The Cognitive Domain should be measured by examination, exercise, project and the Affective Domain should be measure by observation such as reading manner, listening and watching manner. It should measure the content from the media by asking the learners how they like the selected stories and if the stories are useful and if the learner get any values from the stories.

In conclusion, producing the multimedia for Thai literature should begin from selecting the stories suitable for learners and course, then creating the storyboard. The content of literature remains in communicate the aesthetic, social and moral aspects as per each literature's content.

According to the scholars' recommendation, it have to focus on thinking skill of the learner. The success factor in multimedia for Thai literature is that the multimedia making the Thai literature lively on computer due to its modern technology and being right to the learner's interest.

The scholars has selected 6 literatures to be produced in multimedia as follows:

- 1) 2 stories for Middle School level: Niras Phukaotong and Pra Apaimanee
- 2) 2 stories for High School level: Lilit Talengpai and Mathana Phatha
- 3) 2 stories for University level: Khunchang Khunpan and Sangthong

The Scholar committee recommended that creating the multimedia should be done in accordance of time. During teaching, there is the teaching plan with rough topics and content. For convenience of making the storyboard, the content, activities and literary should be divided as chapters. Medias and activities should be related to the content and set objectives. To create the multimedia for six Thai literatures should present content, characters (if any), aesthetic, social and moral aspects and these three values should be measurable.

2. Developing and creating the multimedia for learning values of Thai literatures

2.1 Developing and creating the storyboard of multimedia for learning values of Thai literatures

2.1.1 The researcher uses the development guideline of the learning values of Thai literature through multimedia to create the storyboard of 6 literatures by meeting with 3 storyboard writers (2 stories each). The storyboard writers are the expert with experiences in teaching Thai and educational technology.

2.1.2 The researcher presents the storyboard of multimedia for learning values of six Thai literatures to three scholars for recommendation and quality assessment. The result of the quality assessment of the storyboard of multimedia for learning values of Thai literatures finds that:

Assessment Description	St or y 1	St or y 2	St or y 3	St or y 4	St or y 5	St or y 6	Aver age
1. Content							
1. Analysis of the content from Thai literatures	4.6 7	4.6 7	4.6 7	5.0 0	4.3 3	4.6 7	4.67
1.2 Presentation of the concept and content of Thai literatures	4.6 7	4.3 3	4.6 7	4.6 7	4.3 3	4.3 3	4.50
1.3 Presentation of the storyline interrelated throughout the story	4.6 7	4.3 3	4.3 3	5.0 0	4.3 3	4.6 7	4.56
1.4 Presentation of three values in Thai literatures.	4.3 3	4.3 3	4.3 3	4.6 7	4.3 3	4.6 7	4.44
2. Use of Language							
2.1 Use language following Thai language principle	4.0 0	4.3 3	4.6 7	4.3 3	4.6 7	4.6 7	4.45
2.2 Use the polite language according to language level used in mass media	4.0 0	4.6 7	4.6 7	4.6 7	4.6 7	4.6 7	4.56
2.3 Use the modern and interesting writing strategy in description and conversation.	4.6 7	4.3 3	4.3 3	4.6 7	4.6 7	4.3 3	4.50
3. Presentation Technique							
3.1 Design of angle, shooting technique and film locations	4.6 7	4.3 3	4.6 7	4.3 3	4.0 0	4.3 3	4.39
3.2 Design of narrative sound, interview and background music	4.6 7	4.6 7	5.0 0	4.6 7	4.3 3	5.0 0	4.72
3.3 Creativity, fresh idea, beautiful and adaptation in filming	4.6 7	4.6 7	5.0 0	4.6 7	4.0 0	5.0 0	4.67
Average in all areas	4.5 0	4.4 7	4.6 3	4.6 7	4.3 7	4.6 3	4.55

2.1.3 The researcher corrects the multimedia for learning values of Thai literatures according to the scholars' guideline until completion

2.1.4 The researcher produces the multimedia for learning values of Thai literature by meeting on its content with Development and production of multimedia in order to collect the resource to create resource for the multimedia for learning values of six Thai literature. The details of the implementation of multimedia for each story as follows:

1) The format and production techniques of multimedia for 6 Thai literatures

1.1) Niras Phukaotong

Niras Phukaotong is presented in text, graphic, animation, photos, motion pictures, video, recorded rhythm narration, recorded narration, recorded background sound by visual and audio computer program such as Photoshop, video editor program, mixed sound program and animation creator program, etc. Then, it processes the multimedia with flash animation and the interaction creator program to present the story and the content of the itinerary according to Niras Phukaotong such as create the map on multimedia from Bangkok to Ayutthaya by Chao Phraya river and create matching games for exercises, etc.

1.2) Pra Apaimanee

Pra Apaimanee is presented in text, graphic, animation, photos, motion pictures, video, recorded rhythm narration, recorded narration, recorded background sound by visual and audio computer program such as Photoshop, video editor program, mixed sound program and animation creator program, etc. Then, it processes the multimedia with flash animation and create the interaction with the lesson. Video presentation of Phra Apaimanee is presented by the MC (Sinsamutr) at Wax museum at Nakorn prathom province to present the story of Pra Apaimanee. Matching game also added as exercise.

1.3) Lilit Talengpai

Lilit Talengpai is presented in text, graphic, animation, photos, motion pictures, video, recorded rhythm narration, recorded narration, recorded background sound by visual and audio computer program such as Photoshop, video editor program, mixed sound program and animation creator program, etc. Then, it processes the multimedia with flash animation and create the interaction with the lesson. It includes the comic video about Naresuan the Great (with permission of the producer) to tell the story and content of Lilit Talengpai. Multiple-choice exercise and a subjective exercise are also created for Lilit Talengpai.

1.4) Mathana Phatha

Mathana Phatha is presented in text, graphic, animation, photos, motion pictures, video, recorded rhythm narration, recorded narration, recorded background sound by visual and audio computer program such as Photoshop, video editor program, mixed sound program and animation creator program, etc. Then, it processes the multimedia with flash animation and create the interaction with the lesson. It include the video of stage play “Mathana Phatha” (with permission of the producer) to present the story and content of Mathana Phatha. Moreover; multiple-choice exercise and a subjective exercise are also created for Lilit Talengpai.

1.5) Khunchang Khunpan

Khunchang Khunpan is presented in text, graphic, animation, photos, motion pictures, video, recorded rhythm narration, recorded narration, recorded background sound by visual and audio computer program such as Photoshop, video editor program, mixed sound program and animation creator program, etc. Then, it processes the multimedia with flash animation and create the interaction with the lesson. It includes the movie “Khun pan: Wantong was executed” (with permission from the producer). In addition, there is the video of Khunchang khun pan’s insight by MC in Thai - central traditional dress at Thai traditional house in Suphanburi province to present the story and content of Khunchang Khunpan. Besides, multiple-choice exercise and a subjective exercise are also added.

1.6) Sangtong

Sangtong is presented in text, graphic, animation, photos, motion pictures, video, recorded rhythm narration, recorded narration, recorded background sound by visual and audio computer program such as Photoshop, video editor program, mixed sound program and animation creator program, etc. Then, it processes the multimedia with flash animation and create the interaction with the lesson. It also edits the comic video “Sangtong” (with permission of producer) to present the story and content of Sangtong. In addition, multiple-choice exercise and a subjective exercise are also included.

2) The barriers of producing the multimedia for Thai literature

2.1) To pursue the computer technicians who are able to apply the approved storyboard and content of Thai literature in multimedia in limited time and budget. It requires the technician who has the basic knowledge in Thai literature and education management with assistance of the researcher and assistant researcher.

2.2) Time consumes in collecting raw material. To avoid the Intellectual Property Violation, video, motion picture, comic and characters need to be newly made for example; drawing characters, drawing the event in the literature, traveling to the scene for filming. For comic videos, movie videos and background music, it requires the official letter to request permission of usage. Moreover; to record the narration and rhythm, the reader need to be well-trained before appointment. Raw material in each literature is very detailed and takes a lot of time to prepare and procure. Therefore it caused the delay than the plan.

2.1.5 The researcher present the multimedia for learning value of Thai literature to three scholars for consideration, recommendation and quality assessment.

The quality assessment of multimedia for the learning values of Thai literature are follows:

Assessment Description	St or y 1	St or y 2	St or y 3	Stor y 4	Sto ry 5	St or y 6	Ave rage
1. Content							
1.1 Multimedia content follows the academic principles	4.6 7	4.3 3	4.3 3	4.6 7	5	4.6 7	4.61
1.2 Multimedia content follows its objective	4	4.3 3	4.6 7	4.6 7	4.3 3	4.3 3	4.39
1.3 Multimedia content's difficulty suitable to media receiver	4.6 7	4.6 7	5	4.3 3	4.6 7	4.3 3	4.61
2. Language							
2.1 Use language following Thai language principle	4	4.6 7	4.3 3	4.3 3	4.6 7	4.3 3	4.39
2.2 Use polite language suitable to media receiver	4.6 7	4.3 3	4	4.6 7	4.3 3	4.3 3	4.39
3. Presentation techniques							
3.1 Design is easy to understand and communicate to the point	4.3 3	4.3 3	4	4.3 3	4.3 3	4.6 7	4.33
3.2 There are graphic technique, size, color and font that make the media easy to read	4.6 7	5	5	4.3 3	4.3 3	4.3 3	4.61
3.3 Quality of narrative sound, music: clear and interesting to pursue	4.6 7	5	4.3 3	4.3 3	4.6 7	4.6 7	4.61
4. Creativity							
4.1 There are creativity to make different, beautiful and creative.	4.6 7	4.6 7	4.3 3	4.6 7	4.3 3	4.3 3	4.50
4.2 There are presentation techniques and useful	4.6 7	5	4.3 3	4.3 3	4.6 7	4.6 7	4.61
Average in all aspects	4.5 0	4.6 3	4.4 3	4.4 7	4.5 3	4.4 7	4.51

2.1.6 The researcher corrects the multimedia for the learning value of Thai literature according to the scholars' recommendation until completion and readiness to be implemented in teaching Thai literature to students. There are the condition to the success of producing multimedia for Thai literature as follows:

1) The factor that contributed to the successful development of Thai literature were: Multimedia is a tool making Thai literature lessons live on computer media due to its modernization and meeting learner's interest.

2) The factor that contributed to the successful development of Thai literature were: these tree experts have given the importance in storyboard and content of six Thai literatures. They have reviewed and given the suggestion in details to create the multimedia that can develop the learners in aesthetics, social and morals profoundly according to the concept of six Thai literatures.

Result Explanation

Research result concludes that the knowledge from scholars' brainstorming discussion is that to present Thai literature with multimedia, it should well create with modern technology according to learner's interest in order to communicate the knowledge in Thai literature and make the learners understand and realize the values of Thai literature in 3 aspects truly. Thai literature is Thai's intellectual treasures which worth to Thai youth to learn in deep the values of Thai literature by adapting the teaching according to learner's date. The result form the scholars' discussion is to create the multimedia for 6 Thai literatures, it is to present the content, characters (if any) aesthetics, social and morals aspects and the values in three aspects in six Thai literatures should be measured. Producing the multimedia for six Thai literatures by focusing on Thai literature's learning values in aesthetic, social and morals, Thai teachers in high school and university receive teaching tools following to Thai literature course: the students know and realize Thai literature's values in aesthetic, social and morals which are the key of learning Thai literature, Thai's worthy legacy; and being the media arousing student's interest more in Thai literature. In tern of multimedia production and presentation technique, 6 multimedia Thai literatures are presented in drawing image, drawing character, video, game, animation, motion picture, graphic, inserting movie, play and TV drama in multimedia, using recorded narration, conversation and rhythm reading. The research result is in line with the concept of Sujit Peanchop and Saijai Intarumphun (1992: 230 – 238) saying that Thai literature is Thailand's cultural heritage. The teaching of Thai literature should emphasize the students appreciated in the value of literature and try to maintain this legacy to stay forever and should use the suitable teaching materials with worth result. In addition, it is also related to the research in applying technology in teaching Thai literature by various scholars such as Songrit Chimmode (2010) who studied on comparison of learning achievement by six thinking hat method and general teaching with computer's lesson in Samkok: Guan Yu works with Cao Cao in Matthayom 6, Pimnicha Prommjnot (2010) studying on Lesson development in assistance of computer: Thai learning group Traiphumpruang: Manussaphum in Mattayom 6, Piyorot Mahathunpoka (2007) researching on the development of computer multimedia lessons. "Ramayana" Thai learning group for the third level students. All the research results showed that the students had better learning achievement and the attitude towards Thai literature improved after learning Thai literature in the form of technology media. It is because technology media has encouraged students more interested in lessons. But it is due to content of Thai literature being an inherently valuable asset to humanity. Therefore, the introduction of Thai literature combined with multimedia using various technological techniques can well convey the message, stories and values to the new generation.

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The Case Study of The Thailand Pomelo-Based Learning Model to Improve Students' Learning Experience

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

This research aimed to study the effect of the project-based learning (PBL) approach to students' learning experience by developing the Thailand pomelo-based learning model. The methodology used in this project is participatory communication. Participants in the research process selected by using the purposive sampling technique consisted of three main sample groups: the academic team and the student team from the Communication Arts program, the faculty of Management Sciences at Phranakhon Rajabhat University, and the community team in the Rai Khing municipality and its community philosopher. This research project can identify the pomelo-based learning model with the real pomelo fruit. The whole pomelo shows the research utilization of the TRF research database. The base of the pomelo in each layer that surrounds the fruit means engaging and supporting the allies. The pulp is divided into circularly arranged lobes; therefore, it means that each student should be put into small groups to produce the media based on the assigned project and to adjust the students' roles. Finally, the stems and leaves are attached to the fruit, meaning learning from real life in the local community context. The results showed that the Thailand pomelo-based learning model helped to improve students' community media production skills. All students in small groups can produce the media based on the assigned project in their real-life situations. Students' learning experiences and outcomes were also enhanced through this PBL approach.

Keywords: Thailand, pomelo-based learning model, PBL

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Introduction

The Thailand Research Fund (TRF) is a national organization in Thailand that has a mission to support research that fosters knowledge, policies, and innovation and develops researchers, research systems, and research organizations. TRF's primary role is to assist in the development of researchers and research-based knowledge through making research grants and assisting with research management. TRF does not itself conduct and research. The results of this research include the creation of new academic knowledge. To make sure that knowledge is beneficial to genuine and sustainable development, the TRF has extended its focus to the management of research utilization.

Communication is an essential mechanism in disseminating research results in utilizing the research of the TRF. The communication of knowledge was brought forth from research with the Institute of Communication Arts, which was founded by the TRF itself through a project named "Communication for the Utilization of Research in Communities and Areas." (Eiamrerai, 2015)

This communication process is consistent with teaching in the 21st century, especially regarding PBL or problem-based learning. Problem-based learning (PBL) can transform a regular classroom into a thinking classroom. It affects the development of students' abilities and skills as well as the stimulation of knowledge. The researcher found the contribution of this teaching through the research entitled "A potential developing process of communication arts students after changing normal classroom for thinking room" (Roonkaseam, 2014).

The study of "the case study of the Thailand pomelo-based learning model to improve student's learning experience" may show that all the TRF's research will be used in the target areas and in the development of learning processes and outcomes in the field of communication.

The phrase "pomelo-based learning" is derived from "zombie-based learning" from the work of Standards-based Geography Curriculum... with Zombies, initially designed by David Hunter of Minnesota High School. To be able to escape these zombies, it is necessary to use the skills of reading city plans or state maps or to have knowledge of geography. (Zombie-Based Learning, 2018)

After reviewing the research supported by TRF, the researchers found that research on the pomelo shows that communication will play an important role. By integrating it with problem-based learning (PBL) in the classroom, the TRF's research results will be disseminated in the target areas to the users for the utilization and development of learning in the field of communication arts in the academic area. In this research, "The Case Study of the Thailand Pomelo-Based Learning Model to Improve Students' Learning Experience," the researcher focuses on the pomelo-based learning model to teach the process of community communication.

Objective

This research aimed to study the effect of the project-based learning (PBL) approach to students' learning experience by developing the Thailand pomelo-based learning model.

Research methodology

The methodology used in this project is participatory communication. Participants in the research process were selected by using the purposive sampling technique and consisted of three main sample groups: an academic team and a student team from the communication arts program, faculty of management sciences, Phranakhon Rajabhat University, and the community team in Rai Khing municipality and the community philosopher.

For the role of the academic team, the community team and student team are as follows:

1. Become a research team to communicate research results.
2. Jointly develop, design, and improve research processes.
3. Create research tools and collect research data.
4. Select stakeholder groups and advocacy groups to work together.
5. Contribute to the data and review the information obtained in the research.
6. Benefit from the communication of research results.

Conclusion

The main conclusions of the research "The Case Study of the Thailand Pomelo-Based Learning Model to Improve Students' Learning Experience" are the following:

(1) Pomelo-problem based learning

Concerning the learning process in communication arts, we can use participatory teaching methods in the target area through the "pomelo-based learning model." It is integrated with other subjects of the communication arts faculty at Phranakhon Rajabhat University with the lecturers' meeting on task assignments and inserting knowledge into the goals of each subject.

The PBL starts with the introduction of integrated learning methods with the TRF's research. Then, subjects are divided into subgroups of students for the "pomelo model" media project.

The students must explore the problem of communities together with a media type and the target audience of each media type. Before the production process ensues, it must be carried out by empowering the students to be community communicators. Then, it will go through the publishing process via the exhibition and evaluation of the media and the teaching process.

(2) The Thailand pomelo-based learning model

Comparing the pomelo-based learning model to the real pomelo fruit is done as follows:

- The comparison of the pomelo fruit with the use of research on the problem of this fruit is the basis of this research because it aims to integrate learning about the real situation with the classroom. The results from the implementation of the project can communicate knowledge from research. In addition to being useful in communicating research to benefit the local community, it also affects the students in the field of communication studies.
- The peel in each layer means to mobilize, engage, and support allies. The model is relevant and linked to a wide range of partners or stakeholders, especially teachers from each related subject since the student requires all the relevant knowledge and experience to produce media. In addition to mobilizing the participation of lecturers in each of the related subjects, it must mobilize the participation of other sectors involved, such as the community of the beneficiaries of TRF research.
- The pomelo fruit is divided into circular petals. This means that each learner is a small group in the production of media based on the assigned project and the role of the learner in learning from the real space.

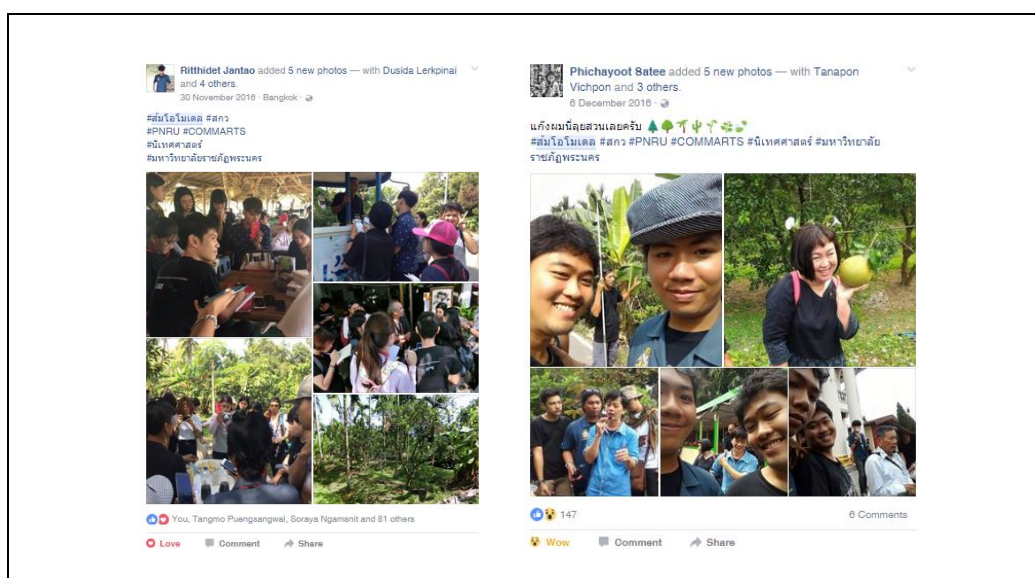


Figure 1: Learning from the real space: Community lab.

Then, the process of producing the media must also be based on participatory work and the analysis of the information, problems, and needs of the target audience. The students have used the community diary and the community philosophy and production calendar to collect all the information. There are various types of media, including infographics, books, pop-up cards, poster, radio, and video clips. Once media has been produced, it must be disseminated and evaluated by the target audience and must be publicly available through online communication channels.



Figure 2: The student’s media production: the series of poster comment for Line application.



Figure 3: The student’s media production: the story of Mr.Ubol and his pomelo.

- The stems and leaves of the pomelo that are attached to the fruit are meant to teach about the real conditions in the local community. In this project, students need to explore and analyze the needs of target groups and the context of community media in real situations.

Not only does learning from real contexts benefit the communication of the knowledge of TRF's research to benefit the community, but at the same time, learning and sharing of experiences in the area also leads to the self-improvement of students and of the classroom management skills of the lecturer.

(3) The effect of project-based learning (PBL) approach on students' learning experience

The above results suggest that the Thailand pomelo-based learning model has a significant effect on the student. The feedback collected from students was positive, with more knowledgeable, enjoyed learning, acquired problem-solving skills,

communication management skills, understanding of community media production concepts.

Suggestions

1. Future research should use experimental research to compare results between quantitative and qualitative research.
2. It should be noted that the researcher should be very aware of what community is involved in the learning process.

Acknowledgements

The researcher would like to thank the Thailand Research Fund (TRF) for supporting the research budget. Also, thanks to the Faculty of Communication Arts' lecturers and the students who have participated in this research.

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Mentorship, Global Readiness, and Student Success at South Carolina State University (SCSU): A Descriptive Study of the Emergence of the New Student Mentor

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The Asian Conference on Education 2018
Official Conference Proceedings

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Introduction

Mentorship has been viewed as a role played to advance useful advice for success to the freshman student enrollee. It can be seen as a title that identifies a person who has shown a high credibility of accomplishments in a highly respected place of leadership. When used as a label or title, the nonverbal reference of *mentor* given to this person is often times intended to show that the person is knowledgeable about forces that can impact perceived success of students in the classroom or workplace. This reference of *mentor* is a word often used to convey encouragement, regardless of its use, whether in the home, in school, in the community, or in the global arena. Usually, the person who carries such as title is a person who has gained a recognizable image of success, especially after having been labeled as "best." (Brown)

Hypothesis

The Tenured Faculty Member and the New Student Mentor can have a positive impact on student retention at the undergraduate level of study. The author believes that tenured associate professors and professors can help create a new kind of student leader or reengineer the making of what can be defined as the **New Student Mentor (NSM)** on the college campus. The writer believes that tenured associate professors and professors will be able to help the NSM create a plan of success-accomplishment for the new college enrollee. Effective interpersonal communication strategies and focused-groups will be used by both the tenured faculty member and NSM. These two types of talking-skills and writing skills will be important tools in student success. These soft skills and usage of technical skills are supported by professionals and academic winners, especially in world of business, academia, and in all levels of American Armed Forces.

Methodology

Feedback on research questions were collected via survey monkey (Survey Monkey, 1999-2018). Throughout data collection on an experimental portion of this study, the researcher and student experimenter for this descriptive study asked questions that elicited "pen and paper" responses as well as survey ratings. Subjects were students either at home or housed in internship programs away from the campus or abroad. While not the best experimental tool for assessing data for variability, the student researcher believed that significant percentages on research questions could be found using the experimental approach with data collection. Subjects were incoming freshman and upperclassmen.

There were two separate surveys created to receive feedback; the freshmen (SCSU only) and upperclassmen had their own survey with different questions. To make the experiment more accurate, comparisons were made across other Historically Black College and Universities (HBCU's).

Results

100 percent of participation student enrollees participated in data collection. The survey confirmed the following findings on the role of the New Student Mentor (NSM) in social, interpersonal, and group assistance to peer students on the college campus. Here are the findings.

1. Incoming freshmen showed signs of nervousness and a concern about navigation on campus.
2. Students seemed to trust a special program-setup for better campus navigation and consultation for peer students. For example, programs similar to the Honors College (HC) and newly established Student Admissions Ambassador Program (SAAP) were helpful in reducing stress and cognitive dissonance for new student freshmen enrollees at South Carolina State University.
3. The freshman believed that success would follow help and assistance given during enrollment.
4. Data showed that 93% percent of the freshmen enrollees believed comfortability and success were enhanced by the SAPP.
5. Freshmen enrollees trust more the help of student mentors who treated them like a peer and not like a parent.
6. Upperclassmen stated that one of their reasons for attending the college was based on the appeal of academic program and connection with student mentors.
7. Most students believed that qualities of trustworthiness, dependability, assertiveness, communication skills, respectful, positive self-image, confidence, knowledgeable of the campus, leadership skills, initiative, non-judgmental attitudes, patience, listener skills, and integrity of faculty were influential reasons for continuing toward the completion of academic program.

Implications for the New Student Mentor

While statistical findings were non-significant in the experimental portion of data interpretation, researchers found that results were meaningful and could be used to implement the strategic use of the New Student Mentor (NSM) as a meaningful human catalyst in the study of retention and enrollment at the college campus. Here are the meaningful administrative projections and research findings.

- A. NSM and tenured faculty member will be a dyad and could play formal part of overall plan of the Quality Enhancement Plan (QEP).
- B. NSM will be work across departments and programs, on and off campus, to achieve set objectives launched to increase the attainment of success for the undergraduate student at SCSU.
- C. NSM will work in areas of academic programs that center around common major and student programs mostly.
- D. NSM will create (with advice from tenured faculty member) ways to measure progress and process of the attainment of success. Pools of students and cohorts may be used in data collection.
- E. NSM will learn how to use the “electronic portfolio” and how to share that knowledge with students.

- F. NSM (with recommendations and help from tenured faculty member) will use the General Education Core (GEC) to tap a pool of students who may not have chosen a major area of study in academic programs offered at SCSU.
- G. NSM will use the “survey instrument” to record the benefits of findings on success. Item-questions will be included in the survey that can be spoken in conversation as well as recorded for meaning and measurement on paper.
- H. NSM will be aware of research on success that is relevant in social, global, and spiritual communities.
- I. NSM will advocate to other student-enrollees the importance of beginning and building an effective business and/o academic resume.
- J. NSM will learn more about CIVTAS INSPIRE—an instrument used in predictive data analysis. NSM will be assisted by the tenured faculty member to use this measuring tool effectively. This type of data collection might be one way to allow the faculty and NSM to track “factors of student success.
- K. NSM and the tenured faculty member will inform students about the benefits of writing and publishing manuscripts and/or stories of success-accomplishments while enrolled as an undergraduate student at SCSU.
- L. NSM will be paid a stipend or moneys for services and data collected that show tangible accomplishments of success in the measurement of student retention and enrollment.

Conclusion

The New Student Mentor can truly help to enhance retention and success on the college campus. By providing an expertise, stipend, and administrative understanding of the role that could be played by the learning and employment of student mentorship to support freshmen enrollees, the New Student Mentor could be a key player in the growth of retention and enrollment.

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Solitude Back in Fashion: Introducing the Uses of Being Alone

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

The state of solitude has always been associated with unusual human circumstances such as confinement in prison, a voluntary religious experience, or explorers charting new challenges in remotes lands. The contemporary global capitalist world, however, with advanced information technology and the many gadgets made available to those who can afford them, is seen by many to have increasingly become a world where individuals are living in solitude among the electronic sound and fury. Our world is a world of rising number of single-person household in major cities, increasing ownership of mobile gadget for communication and entertainment, and ironically escalating number of people suffering from psychological and emotional conditions. If the state of solitude has become a norm in our world, how can we reconcile with this condition and adapt ourselves to this new world? And is it possible to teach our future generations how to handle this state? The presentation is a work-in-progress report about learnings from interdisciplinary literature about solitude, and how this state of being can have positive “functions” in our daily life settings for leading a better life. it is hoped that some of the insights can be developed into exercises that can be taught in a classroom setting.

Keywords: Uses of solitude, mindfulness, self-understanding, interpersonal relationship, education

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Introduction

This paper is a work-in-progress report of a study which I am doing to understand more about solitude, in particular whether solitude can help us live a better life. I can see that some of the activities related to being alone are coming “back in fashion”, which might suggest that more and more people are beginning to appreciate the value of being alone. I am hoping that the findings of the study can be shared with my students, to help them learn more about themselves.

I will start this report with some information about how I was led to this topic. Last year I was awarded a fellowship to sharpen my leadership skills in higher education.¹ The fellowship included a semester-long stay at an Asian university to observe and learn at first hand, which meant that for the first time in more than 15 years I did not have to undertake any teaching for a whole semester. With more time on my hands, and completely alone in a place which was not home, I constructed for myself a very different daily routine. Besides my daily visits to the different administrative and academic units at my host university, the rest of the time I was on my own. I thus divided the time between surfing the internet for interesting things to learn, and reading books that I normally did not read when I was home preparing for classes or writing papers.

One day I clicked into the latest clip on YouTube and it happened to be a recorded talk given by a Hong Kong monk. In that hour-long session he was introducing his latest project which was a collection of photos published as a book, to raise money for charity. This monk, Venerable Chang Lin, is well recognized in Hong Kong because he used to be a well-known professional photographer, one of the best of his generation. His sudden renouncement of the world in 2009, giving up his very successful business, his wife who was a popular TV artist, and his family, made quite a few headlines then. Becoming a monk in his case does not mean hiding away and being detached from this world. Instead he has been very active in engaging with the local community through spreading the teachings of Buddha, and different kinds of charity work using his professional skills as a photographer and artist. In the session I listened to, he also recounted his journey of faith, how he was led to the road of the Dharma, to the point of deciding to give up all his worldly possessions including his family.

I had never been a fan of the Venerable when he was a professional photographer, nor had I ever tried to find out why he made the decision to practice the Dharma as a monk. But when I was alone in a foreign city, away from my family, friends and colleagues, living in a flat where nothing belonged to me, I was in a receptive state of mind toward this monk’s story. Therefore I watched the hour-long YouTube recording and when finished I sought further recordings of Venerable Chang Lin’s talks. And when I could no longer find anything from him, I started searching for similar kinds of talks given by other Hong Kong monastics. I ended up listening to dharma talks online and reading about Buddhism every single free moment I had in those months. I planned ahead and enrolled myself in Buddhist courses offered by a Dharma hall back in Hong Kong. When the next semester began, I not only resumed

¹ I was awarded a United Board Fellowship, which allowed me to be affiliated to an Asian university for a few months to learn about management in higher education through observation and hands-on experience.

my teaching, but also started my new life as a part-time student of a Masters degree in Buddhist Studies.² I became a Buddhist and continued to learn not only the doctrines but also the practices by participating in activities organized by a local Dharma hall.

The reason for this long personal story is to show the effect of the solitary state I was placed in during those months. Looking back I was very surprised by the changes that semester's stay in another city had brought to me. People do change of course, but usually we associate big changes in life with trauma. Actually many of my closest friends were worried when I told them of the new practices in my life because they thought my being alone during those months had adversely influenced my judgement, or something tragic had happened to me during those months. For me, it was simply because I was alone and detached from the usual communications and engagements I had with my family and friends. It was not tragedy that brought those changes, it was solitude.

The purpose of this report is not to convert anyone to a particular religious faith, but rather to try to understand the original context that allows or facilitates important decisions such as one's faith and subsequent lifestyle. It is an interesting topic because from my personal experience, I know that the solitary situation is an essential factor to my change; and I am aware of some trends advocating "mindfulness" in different forms in our society as an "improvement" to our currently very busy, hurried, and thus very stressful lifestyle. Here I am referring to a lot of secularized activities being presented as beneficial to us because our participation in them involves the cultivation of a certain mental state. Some of these activities include calligraphy, drawing such as Zentangle, flower arrangement, tea ceremony, even cooking and more mobile activities such as dancing and of course meditation (in a secularized context). Most of these activities have a long tradition already and are today presented as "back in fashion", not simply for commercial reasons, but I believe it is because in our normal daily life the opportunity to experience an extended period of calmness or tranquility that comes with solitude is not to be found if we do not deliberately seek for it.

Anthony Storr wrote in his book *Solitude: A Return to the Self* (1988) that:

The capacity to be alone is a valuable resource when changes of mental attitude are required. After major alterations in circumstances, fundamental reappraisal of the significance and meaning of existence may be needed. In a culture in which interpersonal relationships are generally considered to provide the answer to every form of distress, it is sometimes difficult to persuade well-meaning helpers that solitude can be as therapeutic as emotional support. (Storr, 1988, p. 29)

Indeed common sense and our experience tells us that we all need different types of support from one another, we treasure relationships and we believe that meaningful interpersonal relationship is much more important than possession of material objects in contributing to a good life and happiness. There are also frequent surveys about happiness and their results confirm for us that those who enjoy good relationships (marital, friendship, even good working relationship) generally live longer and have a

² I enrolled as a part-time student at the Centre for Buddhist Studies, the University of Hong Kong, in September 2017.

stronger sense of well-being. Interpersonal relationship is a significant factor contributing to our well-being, there is no doubt; but solitude also has an unmistakable part to play in a meaningful and happy life.

What is solitude?

A very simple definition of solitude is a state of being alone, isolated from company, and probably disengaged from any type of communication. This description brings to mind a number of associations, some of which are not very positive. It is true that one may think of an idyllic picture of a person enjoying a free, peaceful and fulfilling time alone in perfect beautiful nature as solitude, but it can also be a prisoner being confined in isolation, banished from human contact and communication. To understand the role solitude can play in a good life, it is worth trying to be a bit more detailed in its description and to distinguish it from similar states of mind or sentiments.

Philip Koch in his book *Solitude: A Philosophical Encounter* (1994) tried to come up with a definition of solitude, by first interrogating a description of such a state. He chose a passage from the chapter entitled “Solitude” in Henry David Thoreau (1817-1862)’s book *Walden; or, Life in the Woods* (1854). The text is a reflection upon simple living in natural surroundings. The work is described as “part personal declaration of independence, social experiment, voyage of spiritual discovery, satire, and—to some degree—a manual for self-reliance”. The opening lines of this section, “Solitude”, reads:

This is a delicious evening, when the whole body is one sense, and imbibes delight through every pore. I go and come with a strange liberty in nature, a part of herself. As I walk along the stony shore of the pond in my shirt sleeves, though it is cool as well as cloudy and windy, and I see nothing special to attract me, all the elements are unusually congenial to me. The bullfrogs trump to usher in the night, and the note of the whippoorwill is borne on the rippling wind from over the water. Sympathy with the fluttering alder and poplar leaves almost takes away my breath; yet like the lake, my serenity is rippled but not ruffled. These small waves raised by the evening wind are as remote from storm as the smooth reflecting surface. Though it is now dark, the wind still blows and roars in the wood, the waves still dash, and some creatures lull the rest with their notes. The repose is never complete. The wildest animals do not repose, but seek their prey now; the fox, and skunk, and rabbit, now roam the fields and woods without fear. They are Nature’s watchmen – links which connect the days of animated life. (Koch, 1994, p.13)

From this passage, he identified three features which he associated with solitude: physical isolation, social disengagement, and reflectiveness. But at the same time he could also think of other varieties of solitude in which one or other of these features were absent. After some evaluation of different kinds of solitary experiences, he came to a conclusion that of the three factors, social disengagement seems to be the essential factor for solitude to be present. “Solitude is, most ultimately, simply an experiential world in which other people are absent: that is enough for solitude, that is constant through all solitudes.” (Koch, 1994, p.15)

As the twentieth century draws to a close, we are still not sure what place solitude ought to have in our lives. We are becoming more communal, more political, more communicative, but we are also flying apart, fascinated with the varieties of the “return to nature” possible in activities such as gardening, wilderness camping, sunlight meditation. The divorce rate is rising but marriages are keeping pace. The true and balanced place of solitude in a human life is a philosophical question which has, for us, now, urgency. (Koch, 1994, p.9)

Koch wrote in 1994, which was the end of the 20th century. Reading his conclusion more than 20 years later, I still feel the relevance of what he wrote. Although information technology has brought dramatic changes to ways people communicate with one another and ways of living, to me, it has not taken away our need of solitude, as defined by Koch (and I am sure many other writers). In the daily life of an average working adult in Hong Kong (or a university student), being online means having access to an overwhelming amount of information (in Chinese we have a term “oceanic amount”) from all kinds of sources, it also means that theoretically you are in connection with all your acquaintances who are online no matter where they are in the world. Being constantly online, however, is a strange state of being as one is bombarded by information, by requests for communication, but at the same time isolated by physical distance, and a lack of “real engagement” because these processes are conducted electronically. Many people will say that our life is very busy, overwhelming, but also very lonely and private. Many of us are trying to find ways to live a better life than this, and suggestions given to us include those “back in fashion” traditional practices which take place in, or even create, a state of solitude.

The Uses of Solitude

Koch observed in his book:

How indeed can solitude function as a restorative if it does not provide its own intrinsic values? What exactly are they? As I have read over twenty-five centuries of celebrations of solitude, through Lao Tzu, Hesiod, Plato, Jesus, Seneca, Marcus Aurelius, Petrarch, St. Teresa of Avila, Montaigne, Rousseau, Goethe, Wordsworth, Byron, Shelley, Hazlitt, Hugo, Emerson, Thoreau, Dickinson, Whitman, Muir, Proust, Rilke, Byrd, Stevens, Eiseley, Carr, Tillich, Sartre, Camus, Storr, Kohák, and Koller, certain praises are repeated again and again.” (Koch, 1994, p.6)

These praises he collected and organized them into five major ideas: freedom, attunement to self, attunement to nature, reflective perspective, and creativity. In his book he devoted chapters to each of these ideas and evaluate these praises noted by individual writers.

Anthony Storr actually devoted an entire chapter in his book to “The Uses of Solitude”, from the perspective of a psychiatrist. He began the chapter with a discussion of bereavement and how different cultures have their own protocols of behaviour so that the bereaved person is given time to make changes in his/her life after the loss. As he wrote, “[m]ourning is one example of a long drawn out mental process leading to an eventual change of attitude. Instead of regarding life as necessarily bound up with, or even constituted by, the existence of an intimate relationship with the deceased person, the mourner comes to see matters differently. The mourner may or may not form new, intimate ties; but whether he or she does so

or not, the mourner usually comes to realize that the significance of life is not entirely constituted by personal relationships; that the life of a person without intimate relationships also has meaning.” (Storr, 1988, p.32)

So, a “successfully” mourning period ends with a change of attitude, and to enable this success, many cultures have prescribed behaviours that allow the mourner to have “solitude” during mourning. He continued to cite examples of lesser changes of attitude in life: having a holiday/rest cure, having a retreat in both religious and secular contexts, or even simply changing a habit by breaking a daily routine. All these practices are simply providing a chance to the person involved to have the time and circumstances to reflect on his/her own needs and come to a new understanding of life. In terms of the virtues of solitude, Storr also cited examples of great religious leaders who emerged out of solitude enlightened and ready to share what had been revealed to them during that extended period of time: the Buddha, Jesus (according to St. Matthew and St. Luke), Mahomet, St. Catherine of Siena. (Storr, 1988, p.34)

Besides the long list of writers who, over the centuries have documented their praises of solitude, I have come across an example which gives me great inspiration. Edith Bone’s (1889-1975) *Seven Years Solitary* (1957) is a personal record of her experience of solitary confinement in a prison in Hungary for seven years. Dr. Edith Bone was accused of spying for the British government when leaving Hungary in 1949, and arrested by the State Protection Authority (AVH). I could only imagine the situation she was in then: Dr. Bone was already over 60 years old, the prison condition was terrible, she was isolated and kept from company, she had no access to the outside world, and there was no certainty about what was to happen to her, she was not even put on trial. This was definitely not the kind of situation that one would associate with “solitude” especially when we are talking about solitude as a state that can give rise to positive results to the person experiencing it.

Dr. Bone’s narrative, however, is an exemplary demonstration of what the mind can do to maintain a state of well-being even in a completely disadvantageous situation. She drew on her mental resources to recreate the “world” that she lived in, for example, by reconstructing the plots of the books she had read, by mentally taking walks that she had enjoyed before through streets of the many cities that she knew well, by translating poetry that she loved from one language to another (she knew six languages), making a mental inventory of her vocabulary in the 6 languages that she knew, and also by composing poetry of her own. These projects, and many others, were her design to keep her mind focused on goals she set for herself, and these actions successful kept her mind active, lively, and they kept her sanity during the seven long years in prison. Anthony Storr described her experience like this: “She is not only a shining example of courage which few could match, but also illustrates the point that a well-stocked, disciplined mind can prevent its own disruption.” (Storr, 1988, p.48)

How in education we can make use of solitude as a concept and learning experience

Much encouraged by these examples of people who had benefited from experiences of solitude, I am eager to share these with my students, not only as fictional/historical personalities who had had inspiring experiences in their time, but also something that

we can “use” in our world where we are too busy, too occupied (physically and mentally), or even too ashamed to be alone. And when alone, many of us try our best to get out of that condition because it is seen in a negative light or eyed with suspicion. I would want to present solitude in a more positive light, and return it to its rightful position.

A short story written by Kate Chopin in 1894 entitled “The Story of an Hour” is one of my favorite stories to use in the classroom. It is a story about a young American wife Louise Mallard who suffered from a weak heart, and who was told at the beginning of the story that her husband’s name was on the list of casualties of a train accident. She immediately broke down and then retired to the privacy of her own bedroom, while her own sister and a good friend of the family stayed with her in the house. The main part of the story is a description of the mental and emotional journey she went through while she was protected by the intimacy and solitariness of her bedroom. Looking out from the window, she saw a vibrant scene outside, peddlers selling their wares, new life coming out of tree tops, birds singing etc. This setting mirrors the quiet reflection and the coming to life of the lady’s feelings, and in this solitude, she realized something that had always been there but had been repressed because of social expectations and probably the need to constantly interact with the people around her. Now in the solitary environment and the privacy of her own bedroom, she dared to allow herself to acknowledge that she yearned for freedom, and a life on her own in the future. At this point of realization, she cried out “free, body and soul free” (Chopin, 1894) to herself.

After emotionally accepting this new “self”, she walked out of the bedroom, a changed person, (also because her own sister was worried about her being alone inside) and ready for her new life. Inside her own bedroom, in that solitary condition, she had time to focus on herself, and communicate with the depth of her being, to realize a wish that had been repressed by what was expected of her in that society. The story had depicted very well what solitude had done for Louise Mallard.

Ironically the story ends with the unexpected return of the supposedly dead husband, and the shock simply killed the wife. The story ended with a mocking tone when the third person narrator concluded: “When the doctors came they said she had died of heart disease—of joy that kills.” The doctors’ views, which might pretty much represent what everyone who didn’t witness what happened in her bedroom thought, is of course wrong. We readers who were with Louise in her bedroom knew that she died of a broken heart – of disappointment.

I had used the story before to discuss different things: the basic structure of a short story, gender relations and changes, filmic adaptation of writing, and even using it as a stimulus for students to do their own creative stories. The psychological journey Louise Mallard had undertaken in solitude is one that students can understand, probably not from their own life experience, but from numerous other similar fictional and non-fictional narratives. This is certainly a dimension that can enrich the discussion and learning experience in class.

Conclusion

The encounter with solitude has been a very exciting journey for me so far, although I am still at a very preliminary stage in terms of finding out what it has done for many other people. From my own personal experience, it has given me the space to see a need for reflection and change, and indirectly encouraged me to seek more opportunities to engage with my own self. Much still needs to be discovered, if I want to share this with young people I work with. Let me just end this discussion with the words of Philip Koch:

What, then, is solitude? It is a time in which experience is disengaged from other people. All of the other features of solitude that come intuitively to mind, the physical isolation, the reflective cast of mind, the freedom, the silence, the distinctive feel of space and time – all of these flow from that core feature, the absence of other in one's experiential world. Of course much remains to be said about this engaged experience, this curious region spreading out behind time's back in which you gaze from the absolute center of the world and your thinking is the only human voice. Perhaps, though, the possibilities – and limitations! – of doing solitude into English have emerged? (Koch, 1994, p.27)

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Using Tech At Uni: Students Report On Their Technology Use At University

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

Many universities are embracing Learning Management Systems (LMS) for the delivery of programs to students. The LMS provides paperless modes of document and rich content delivery such as Microsoft Word documents and video lectures. Such delivery modes for on-campus students are becoming the norm as more blended learning environments are implemented in universities. This research examines how students make use of technologies and applications, what they think about their skill levels, and whether the online materials encourage and motivate their study. The research also reports on how and where some students and lecturers at Nakhonphanom University, Thailand use the technology and devices in their classrooms. Findings of the research will guide university educators in the improvement and change required in their physical and virtual classrooms as they move into a blended learning environment.

Keywords: E-Learning, ICT Technology, Online Learning, Learning Management System, Blended Learning

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Introduction

This paper will examine and compare results obtained from a survey of all students and education students studying at Nakhonphanom University (NPU) in 2016-2017. The research examines technology facilities and applications provided by the university, as well as the use of social media in teaching and program delivery. It also explores students' self-perceived technology capabilities and preferences at this particular Thai university. The investigation was undertaken using an online survey of students at NPU. The survey sought information from students at higher education level in order to address questions about student ownership of technology, technology use and preferences towards electronically delivered learning resources between all faculties and the Education faculty. It was anticipated that the answers to these questions would be useful to administrators, course coordinators and lecturers in tailoring resources to student preferences and thus deliver greater student engagement and satisfaction. The results will also provide a snapshot of technology trends and use by students over time to see if there are any changes.

Background

Students regard themselves as multitaskers when using technology, so how they respond to traditional textbooks and lectures is important. Lecturers need to know if traditional ways of teaching in universities are reaching and motivating students who use technology as part of their daily lives. This research study will provide educators with an insight into how this current generation of students learn in an increasingly online environment. The adoption and impact of technology use on teaching practice and learning achievement have driven and continue to drive policy makers, educators, and researchers worldwide. Tertiary education around the globe is currently trying to realise and leverage the benefits of technology in the classroom. For example, in Australia, some universities offer wholly online courses, using the delivery of course content through LMS, while many Asian countries tend to develop blended learning environments that include face-to-face as well as online (Gulatee, Clayden, & Combes, 2011; Gulatee & Combes, 2008; Gulatee & Nilsook 2014; Schwartz, 2010).

Some universities are using the Web to enhance and deliver existing teaching-learning materials, while others chose to package learning materials in an Learning Management Systems (LMS) and develop a range of online learning approaches and teaching-learning strategies which leverage the pedagogical opportunities offered by technology. However, studies conducted during the last ten years indicate that learners do not necessarily recognise online learning to be beneficial, due to the lack of peer-to-peer interactivity between learners and instructors (Combes & Carroll, 2013; Gulatee, 2010; McSporrán & King, 2006; Combes & Anderson, 2006; Muilenburg & Berge, 2005; Salmon, 2002). Although most online units provide students with access to real-time chat and discussion forum facilities to encourage ongoing interaction, finding time to participate and the lack of immediacy are barriers to student participation. Discussion forums can be an effective tool to promote student interaction, by providing opportunities to share information or to explore problem-based scenarios (Gulatee & Nilsook. 2015), especially since they provide a permanent record of the discussion that students can review at a later date. However, if students and instructors do not use and actively participate in the discussion forums regularly, the benefits of this type of communication channel will remain under-utilised. In

addition, even when lecturers utilise a range of communications technologies such as discussion forums or bulletin boards, email, chat, blogs and wikis to encourage student discussion and information sharing, peer-to-peer communication and active interactive engagement remains an issue in the online learning environment (Gulatee & Pongthano, 2015). Perhaps it is time to review how teachers embed this peer-to-peer engagement in subjects by using alternative delivery modes such as mobile devices.

Research about the use of technology by young people has revealed that one in four go online using their mobile phones. They also study while listening to mp3 players, engage in texting and chatting online with friends, and reading and posting Facebook messages (Rosen, Carrier, & Cheever, 2010). This American research also reports that 78% of teens now have a mobile phone, and almost half (47%) of them own smartphones. In this study young people tended to use handheld (mobile) devices for both study and non-study activities. Research into the experiences of students and practitioners have indicated that engagement in the participation and the provision of online education respectively, improves the capacity of both groups to cope with change (Pagram & Cooper, 2012).

The uptake of technology by Thai higher education organisations has meant that the LMS has become an essential tool for students' learning both inside and outside the classroom (Pagram & Cooper, 2012). A variety of technologies have been used for instruction in education, including digital cameras, laptops and interactive whiteboards (Cassidy et al. 2011). In 2017, the LMS may contain links to Youtube videos by experts, Facebook Live, a range of presentation tools (for example Slideshare, Voicethread and Prezi), online chats and webinars with experts in the field of study, simulations and virtual worlds. The use of a range of web-based tools and utilities has also led to the production of better quality, locally produced resources which has resulted in positive outcomes for students (Schwartz, 2010; Gulatee & Pongthano, 2015). Taking the above into account, these studies highlight the importance of investigating how students utilise and respond to online materials that are delivered to them throughout their courses. Also of interest are the technologies owned by students and the modes and places of internet access. There is also a belief that education students are unique in that they have the added incentive when learning technology in their course, to apply their skills & knowledge of these technologies when they begin their teaching profession. This assumption has been contested in earlier research (Lei, 2009) which suggests that:

“... growing up with technology, digital natives as preservice teachers are savvy with basic technologies and social-communication technologies. However, their technology proficiency is limited by both the narrow scope and the lack of depth of their technology activities” (Lei, 2009, p.94).

Taking the above into account, the premise for this research study was underpinned by a belief in the importance of investigating how NPU Education students and students from other faculties utilised and responded to the online materials that were delivered to them throughout their courses.

Research Method

Population and Participants

Participants in this study included students enrolled across all courses from NPU. The total number of students surveyed online in 2017 was 380 (76% female and 24% male) using convenience sampling technique. 'Convenience sampling (also known as availability sampling) is a specific type of non-probability sampling method that relies on data collection from population members who are conveniently available to participate in study' (Dudovskiy, 2016), in this case the students at NPU. Of the 380 students in the sample from across the university, 165 (43%) were from the Department of Education. Despite the disadvantages attached to using convenience sampling, a reasonably large spread of students from across the NPU courses participated in the survey. The large number of Education students meant that this reasonably large subset could be compared with other students at NPU. Approximately 80% of participating samples were between ages of 19 and 22 years old.

Research Instruments

Students were surveyed using an online survey. There were 15 questions in the survey that were grouped according to the following categories: demographics, digital lifestyle: perceived skills, ownership and access, file formats, Learning Management System (Moodle). Due to the technology focus of the study, the administration of the student survey online via the internet was considered appropriate. Moreover, the size of the potential target population also required an efficient means of data collection. The university students were informed of the survey via a link placed on NPU websites, which all the students could see after logging in to the university student portal. Students were encouraged to do the survey via information on the portal page about the importance of the research, as well as the possibility of being awarded a gift card to top up their phone cards (selection using a random snowball technique). The investigation of the survey results was developed using Qualtrics software.

Data Collection

The survey was conducted using constructed questionnaires comprising of close-ended questions. Both Thai and English language versions were used, and respondent data was fed into a common database for analysis. Students were informed of the survey via a link placed on NPU websites. The survey and data entry included drop down menus and radio buttons to ensure an uncluttered layout and accurate data entry. Finally, a progress bar indicated how far participants were through the survey to encourage them to complete the survey to the end.

Findings

The focus of the data collection was on examining trends of technology between Education students and students across the university. What follows below is a breakdown of the results from the various sections of the survey.

Ownership and Access

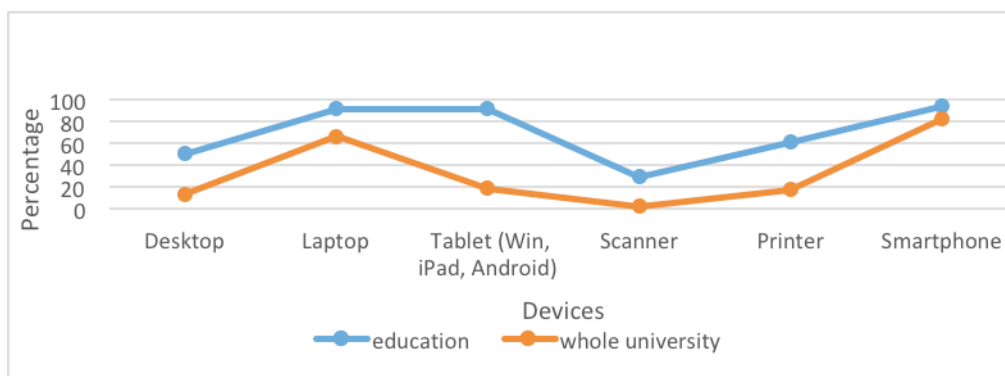


Figure 1: Students’ ownership of technologies devices

The dataset above indicates that Education students’ ownership of devices was in general higher than other students in the university. Almost 100 % of Education students owned a laptop or a tablet and a mobile phone. Only Education students owned a scanner and less than 20% of students in other areas of the university owned a desktop, a tablet and a printer. Results indicate higher ownership of technologies for Education students than others across the university. These results could be due to the fact that Education in Thailand is now considered to be a desirable profession with students studying for five years and the guarantee of a job at the end of their studies.

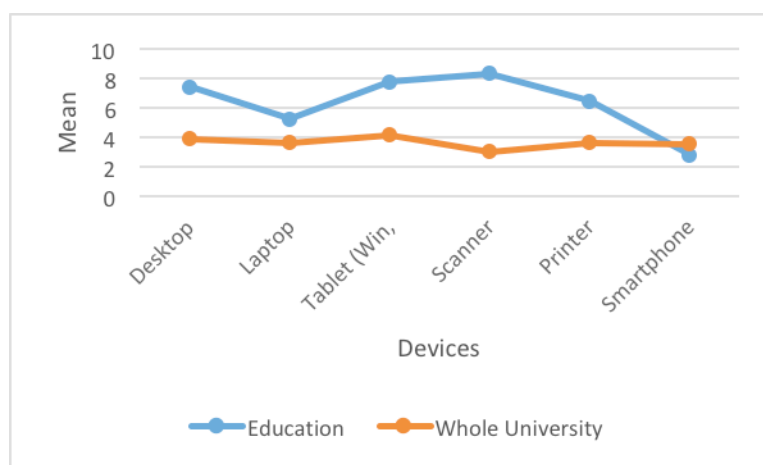


Figure 2: Mean of the years student have owned the devices

The dataset above is interesting as it indicates that except for the smartphone, Education students keep their devices longer than other students. Although the average length of time for renewing their smartphones is four years for all students, updating their Laptops and handheld mobile devices has become more affordable and provides students with access to resources, people, and their community (Pornwasin, 2013). Hence, many students now possess or have access to a handheld device that can be used as a learning tool. Most users were using older devices which are more stable, predictable and reliable, a condition known as "comfortable to use". The results also show that students were not printing as much, possibly due to the fact that printed lecture notes are usually provided to students across the university.

Participants were also asked to indicate their frequency of use for study purposes during the previous 12 months for both their tablet and their smartphone. Although results were not conclusive, using a Chi-square to analyse the results suggested that Education students who owned both a laptop and a smartphone were also using them for study purposes. Current trends for ownership of a smart phone and laptop device indicate that demand for these devices will increase in the near future because students use them for both academic and for personal use.

In Figure 3 show that it is the Education students who are using mobile technologies such as a tablet and a smartphone for study purposes, while other students use a greater variety of technologies for their study. Use of the printer is also notable with 40% of Education students and more than 50% of other students reporting high levels of printer use when studying. Other studies have indicated high levels of printer use by students when studying (Pagram, et al., 2015).

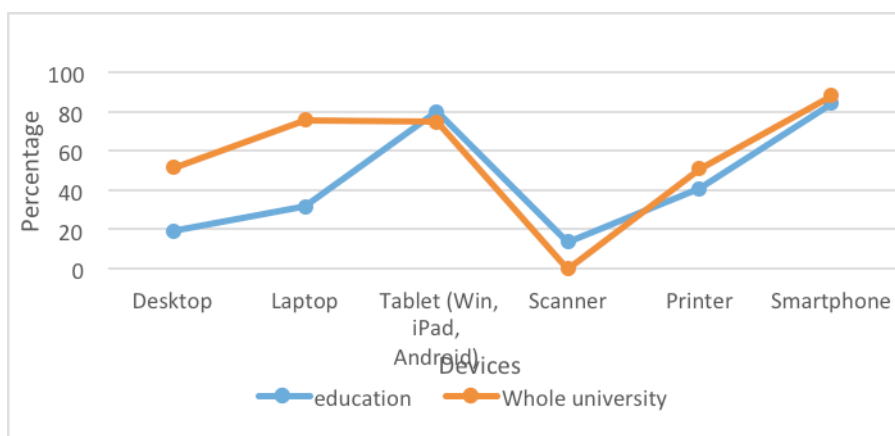


Figure 3: Percentage of students that own a device and use it for study purposes

Figure 4 reports students’ perceptions of how their lecturers use technology in the classroom.

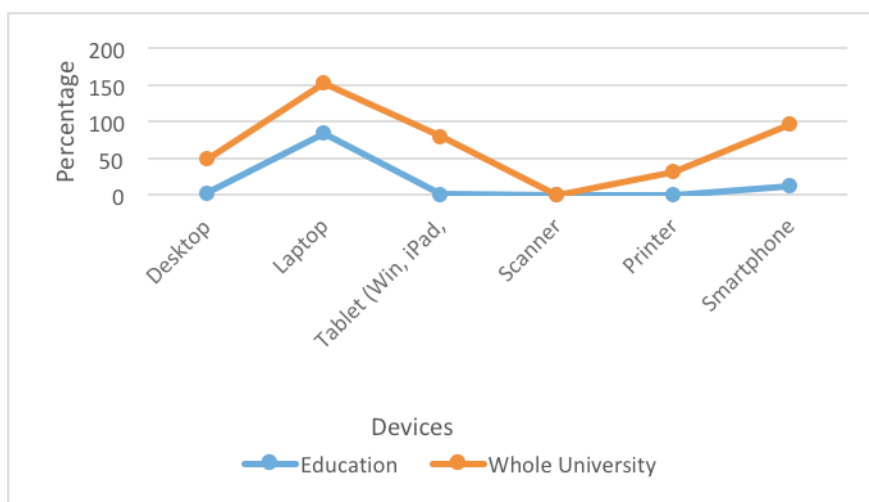


Figure 4: Staff use of devices in the classroom

Students reported that staff do not use technology in the classroom for teaching and learning purposes and Education staff use technology less than staff in other faculties.

In both cases staff are more likely to use either a laptop or tablet in the classroom, probably to present their lectures via a digital projector. Students also indicated that staff from other faculties used their smartphones much more than those in Education. These results may also indicate that other faculties are more likely to provide computer facilities in the classroom than the Education Faculty's teachers. Students also reported limited use and application of other technologies in teaching practice such as smartboards and tablets (Windows and iPads). The consistent application and the integration of other devices such as scanners, printers, digital cameras, DVD players and smartboards was also reported by students to be almost non-existent. The following of results are for all students across the university and examine technology use in class as reported by the students.

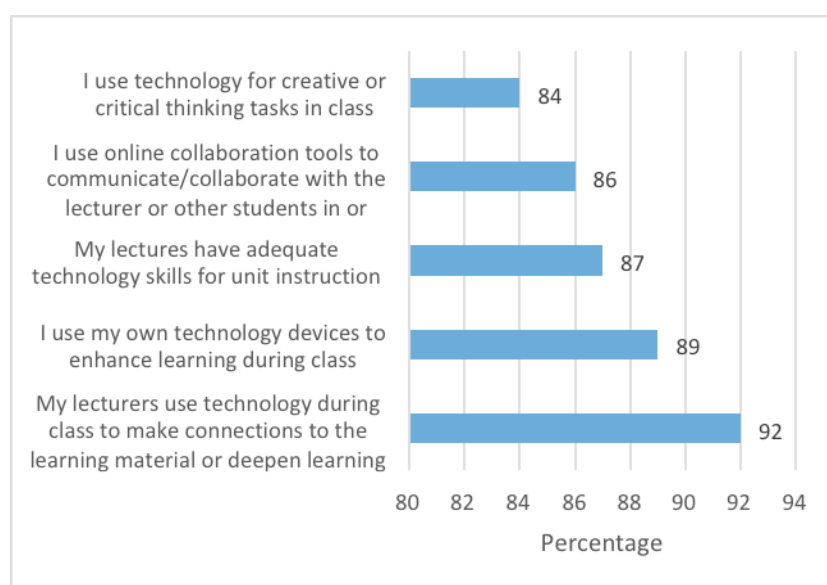


Figure 5: Education Faculty students' use of technologies during class

Figure 5 shows that students do use their devices during class to enhance their own learning. However, the last response in this dataset is problematic and requires further investigation as it implies that lecturers are using technology at a greater depth than indicated in Figure 4. The response by students reported in Figure 5 refers to lecturers using powerpoint slides, audio or video examples or demonstrations of learning concepts (71.09%). While this is using technology for instruction it is still passive and not far removed from the traditional lecture format (present and deliver), rather than interactive. Students also reported that their lecturers often used technology during class to break up lectures (57.03%). Students said they used online collaboration tools to communicate/collaborate with the lecturer and other students in or outside the class (59.06%) and used their own technology devices by themselves to enhance learning during class (59.84%). It would appear that technology use by lecturers in class is limited to the presentation of content and as a motivational tool, while students self-direct and use technology for creative or critical thinking tasks, and collaboration or to enhance their own learning. As a result, students seemed very satisfied with the technology used by their lecturers, even though they did not take advantage of the full affordances of the technology as educational tools. It appears that the Education faculty staff were not experienced in the use of Internet technologies as a teaching tools, as confirmed in research by Aduwa-Ogiegbaen and Wwameiye (2006) who

found that the faculties of Education and Agriculture were the least experienced in the use of the Internet.

Students indicated that they would like their lecturers to use a range of digital utilities and tools that are more interactive and to enhance learning (Figure 6). Students wanted staff to use more electronic resources such as tutorials and quizzes, search tools to find references or other online information for class work, academic validation software (i.e. Turnitin), greater use of the LMS, simulations and educational games and software to make videos or multimedia resources. The results indicate that lecturers appear to have been using the LMS as a repository for student materials, rather than an interactive teaching and learning tool. These results also indicate that students would like to have more technology in the classroom.

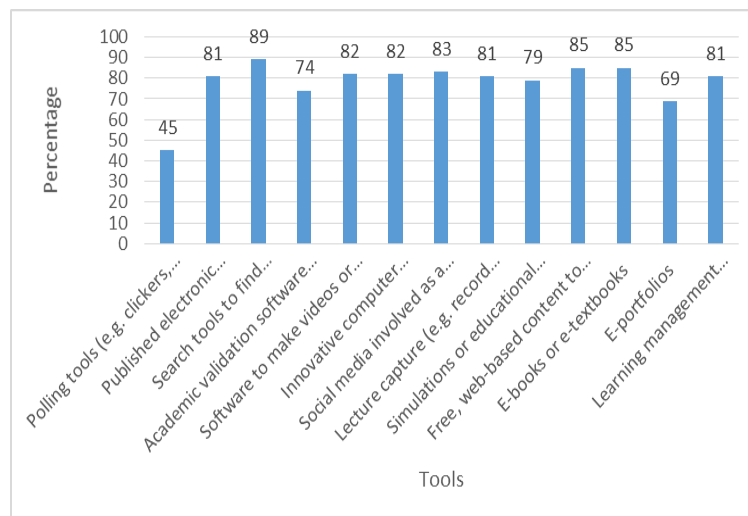


Figure 6: Student preference for technology use in class.

Skills

Figures 6 and 7 examine student perceptions of their own skill levels when using technology.

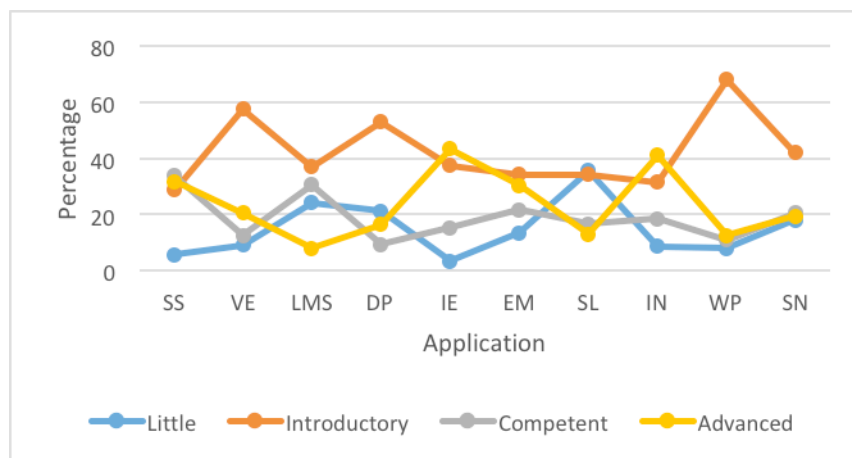


Figure 7: Software skills of students across the University

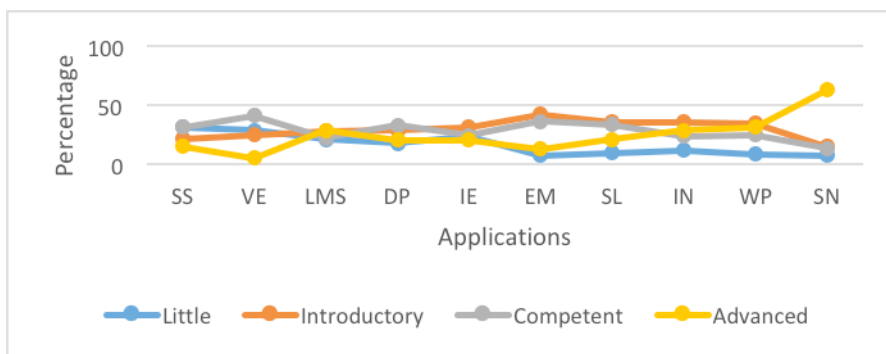


Figure 8: Software skills of Education students

Legend: SL - Slideshows, VE - Video editing, SS - Spreadsheets, FM - File Management, EM - Email, LMS - Course Management Software, IE - Image Editing, SN - Social Networking, IN - Internet Browsing, WP - Word Processing, DP - Digital Photography.

For the software skill question, students were asked to rate themselves on what they considered to be their skill levels using particular devices. Education students considered they were advanced users of social networking tools. Although this generation of students belong to the so-called digital natives, their perceived levels of competence when using digital tools is actually quite low across the university for all students. Other research has also produced similar findings (Combes, 2012). These results indicate that even students recognize that their expertise when using technology for study and learning purposes is limited.

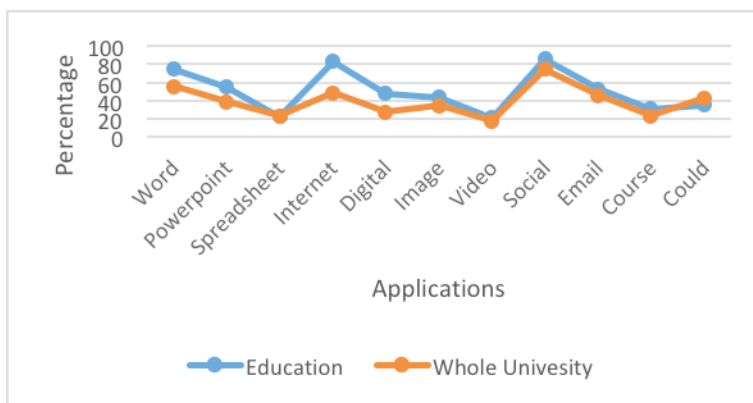


Figure 9: Percentage of students that use applications at least 2-3 times a week

The results in figure 9 indicate that Education students were using a range of technologies slightly more than other students across the university. Use of spreadsheets, video editing, social media, email and the LMS are very similar between the two groups. While Internet browsing, word processing and using digital photography is slightly higher for Education.

Table 1: Location of students when using the Internet

Location	Education students	Whole University students
Home	42	61
3G mobile wifi	64	76
University lab	32	40
University wifi	39	61
Internet cafe	36	25

The results in Table 1 indicate that Education students use their mobile devices to be connected both inside and outside the university more than the other group who use their devices at home and at various locations around the university (wifi and lab).

The majority of students studying at the university come from rural areas, so they have to rent their accommodation while studying at the university which may explain the high use of the 3G wifi and the use of university facilities to be connected.

Figure 10 indicates how students across the university feel about using technology for learning. Most students agree that technology can be a useful teaching-learning tool in the classroom.

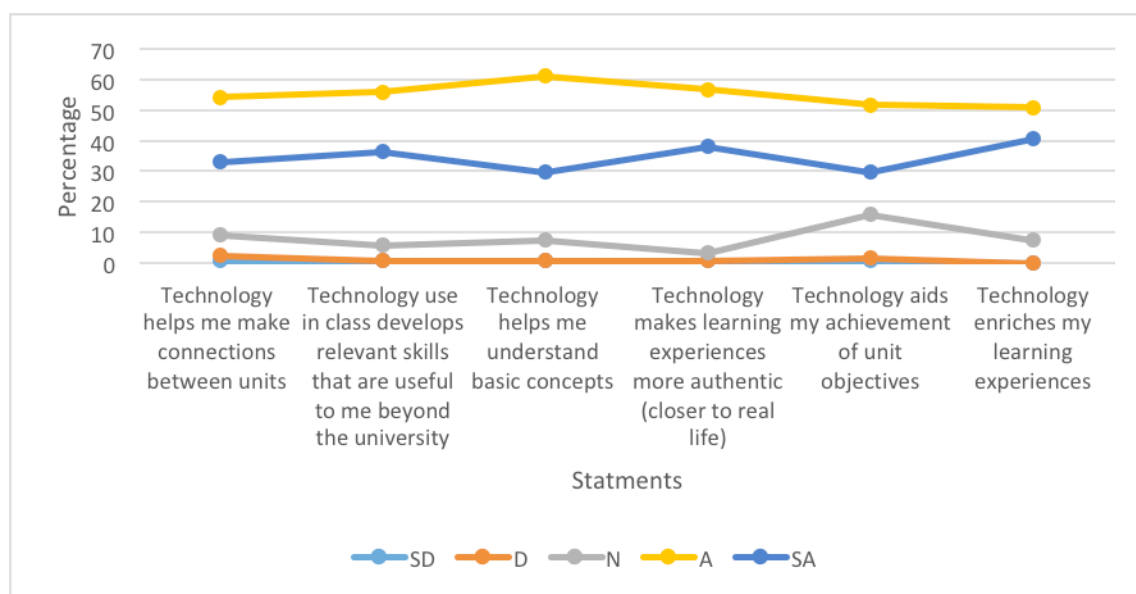


Figure 10: How students feel about technology at university

Note: SA=strongly disagree, D=disagree, N=Neutral, A=Agree, SA=strongly agree

Results from Figure 10 show that 94.92% of students very strongly agreed or agreed that technology makes learning experiences more authentic (closer to real life), while 92.37% felt that technology use in class helps to develop relevant skills that are useful beyond university. 91.53% felt that technology enriched their learning experiences, helped them to understand basic concepts (90.68%), and make connections between subjects (87.29%). However, only 81.35% felt that technology helped them to achieve subject objectives. These results indicate that students perceive technology as very important for their study and their success at university.

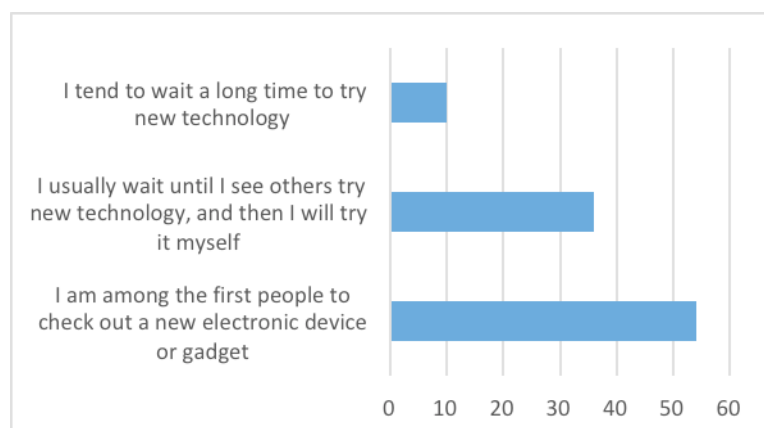


Figure 11: How students describe themselves as new technology users

Figure 11 describes how students felt about themselves as users of new technologies. Only 54% indicated that they are usually among the first people to check out a new electronic device or gadget, while 36% said that they usually wait until they see others trying new technology and then they will try it themselves. 10% tend to wait a long time before trying new technology. These results are supported by earlier research studies which reveal young people as confident technology users (Combes, 2012). The other 46% of students who tend to wait before trying new technology may be inhibited by cost. Further research is needed here to determine whether cost of new technologies is an issue, especially since earlier results in this research indicate that students across the university do not update their devices on a regular basis or when a new version of a device is released.

Conclusion

This research demonstrated that students at university consider themselves skilled in the use of a reasonably wide range of technologies and devices. Of interest is the fact that Education students appear to be more conversant with technology than other students at this particular university. Students across the university say they are confident users of basic web applications such as social media, email and the Internet. However, these confidence levels do not equate to proficiency when using technology, a fact recognized by the students themselves. Students were using more recent (creative?) applications such as web authoring, digital photography and video editing. There may be a chicken and egg scenario going on here. Do students develop software skills by using applications in their studies or do the students choose which applications to use based on existing skills? Naturally the answer is likely to be a mix of these questions, but one suspects that skill level may be the determining factor when considered alongside a student's busy lifestyle.

Overall, the results indicate that for the most part Education students at NPU are not embracing "cutting edge" technologies, but neither are other students. Technology use by lecturers across the university appears to be low and at a very basic level that does not go beyond the traditional lecture format. While computer ownership amongst students (including laptops, tablets and mobile phones) is high, students' desire to use technologies in the classroom outstrips how their lecturers use it. Printing is still an activity pursued by most students.

It is clear from the evidence that students at NPU want to engage with technology at a more interactive level than supplied by the university infrastructure (LMS) and their lecturers, but they also recognize that their skill levels when using technology for learning (information literacy) are not advanced. While students indicated a desire to acquire higher order technology skills and to use a range of formats, there is no place within either the Education courses or across NPU to learn these skills. This fact is likely to result in under-used materials and student frustration in being unable to optimally access and use the technologies available to them. The authors believe that when technologies are embedded into curriculum programs at university and new skills taught at the point of delivery, students will have opportunities to increase their skill levels. Certainly, when new ways (technologies, file-formats) for distributing learning materials are introduced, some form of student support/training is required that is demonstrative of the manner in which the students can optimally utilise these new methods to enhance their learning.

The findings of this research are interesting in the context of training the next generation of teachers. Other studies have shown that pre-service teachers and teachers are not big users of technology in their classrooms (Lei, 2009; Pagram, & Cooper, 2012). The current study also indicates that not just Education students, but all students at NPU exhibit a comparatively low uptake of new technologies and have basic skill levels when using technology for learning. If change is going to occur in how young people use technology in schools and university, then new teachers coming into the profession need to have opportunities to use a range of technologies for learning at university. They also need lecturers to be good role models so they can transfer how they learn at university to other teaching environments.

Overall the study has shown that there is an ongoing need to examine student use of ICT at NPU, how this is related to the learning materials provided by the university and how technology use is modelled by lecturers. It can be concluded that it is incumbent upon a university of the 21st century to monitor students' technology ownership and use, and how they use technology for learning, thus ensuring that the university has an adaptive approach to both technology and pedagogy.

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*Academic Research in Vocationally-Oriented Higher Education:
Perspectives from Teaching Staff*

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

Academics' need to publish research output in order to succeed in tertiary education has been discussed extensively. Less is known about research and publication needs of staff working in vocationally-oriented higher institutes who, until recently, were judged primarily on their teaching contribution. However, there has been a noticeable trend across the world whereby career development of teaching staff in vocational institutes depends on their research and ability to publish in academic journals. This paper investigates the academic research challenges of teaching staff in a vocationally-oriented institute in Hong Kong. Mixed research methods were adopted to understand the prior experiences of the staff, challenges they may be facing when doing and publishing research, and ways in which their research and publication needs may be supported. Questionnaire data from 21 staff members reveal that most staff join the teaching profession after a career in the commercial sector and about half of the respondents do not have any research experience at all. These teaching staff hope to engage in research to enhance their future career prospects, engage in independent professional development and support their teaching. Most staff, however, feel that various constraints inhibit their ability to do research including lack of resources, insufficient time and limited experience with research. Three detailed case studies are used to further understand the personal and institutional contexts of the participants and develop recommendations that can be applied at the institutional policy and department levels.

Keywords: Academic research, vocationally-oriented education, publishing, professional development, teaching staff, HongKong

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Introduction

This paper investigates the academic research challenges of teaching staff in a vocationally-oriented institute in Hong Kong. Using questionnaire data and three detailed case studies, it highlights the need for a clear research direction which is communicated to staff members and is realised through a series of support mechanisms.

Academics' need to publish research output in order to survive in a university has been discussed and documented extensively, to the point that the main question being asked today is whether "Too much academic research is being published" (Altbach and de Wit, 2018). Less is known about research and publication needs of staff working in vocationally-oriented higher institutes where, until recently, discourse focused on teaching and business (Chappell and Johnston, 2003), highlighting intensified connections between education and labor market and the ensuing new knowledge configurations (Wals et al., 2012). The focus of vocational institutes over the last decade or so has been on competence-based education (Biemans et al., 2004), i.e. integration of knowledge, skills and attitudes needed to succeed in the professional world. The aim has been to develop integrated, performance-oriented capabilities to handle professional problems (Biemans et al., 2009).

The vocational institute featured in this paper has a similar aim of producing "work-ready graduates" through the focus on real-life projects and industrial attachments. It achieves this by closely collaborating with the local labour market and by hiring teaching staff who have extensive experience as professionals in their fields. Founded less than a decade ago by a major higher education provider in Hong Kong, this institute offers self-financed vocationally-oriented degree programmes to secondary school graduates and Higher Diploma holders. Around 3,500 students are currently taking their degree courses taught by about 150 staff members.

Unlike traditional vocational institutes, this institute considers research as one of the three "primary activities" of the teaching staff (Staff Handbook, p. 67). It describes it as an important means of professional development which can provide professional experience outside of the institute. Research and consultancy together are expected to take up to 20% of the staff's total workload or not more than 8 hours per week. A list of 17 items that can be considered when evaluating staff performance under the category of research is presented in the handbook. Examples range from physical creative artifacts to publications in books and journals of "high standing" (p. 9). It appears that new knowledge configurations where research is becoming increasingly more important are being valued by the institute, and teaching staff are expected to develop university practice styles and engage in associated activities such as research. As such, the institute resembles England's "dual sector institutions" described by Gale et al. (2011), where scholarship and practice styles of higher education are increasingly more common in vocational institutes.

The study presented in this paper was motivated by the need to give voice to teaching staff members of the institute in order to understand the following questions:

1. What do academic staff members think about the research requirement?
2. What kind of research experience do they have?

3. What are their research-related needs?
4. What kind of support is needed to scaffold staff's engagement with research?

Methods

Mixed research methods were used to address the above questions. First, the existing policy documents were examined to understand the official expectations placed on teaching staff members with regards to research and publication. The findings of this stage of analysis are summarised in the introduction to this paper. An online questionnaire was then designed partly based on the document analysis. Questionnaire items focused on the respondents' previous professional, teaching, and research experiences, challenges they may be facing when doing and publishing research, and ways in which their research needs may be supported. The questionnaire was distributed to full-time teaching staff members of the Faculty of Design and Environment, and 21 questionnaires were returned. The respondents represented all the departments of the faculty and all the levels of experience across the three domains.

Five of the respondents agreed to participate in further detailed case studies which allowed us to examine experiences and beliefs of staff of various levels of teaching and academic research experience as well as working and educational qualifications. Face-to-face interviews were conducted with the case study participants using the survey questions and responses as a starting point. The respondents' research output, if any, was also examined to gain a better understanding of their experiences. Three of the case studies were chosen to be presented in this paper to exemplify the diversity of experiences and needs.

Questionnaire findings

Table 1 below summarizes the basic information about the survey respondents.

Table 1. Survey respondents

Age	25-29 (2)	30-34 (4)	35-39 (4)	>39 (11)
Gender	Male (10)	Female (11)		
Education level	Bachelor's (2)	Master's (14)	Doctorate (5)	
Industry experience	Yes (20)	No (1)		
Teaching experience	1-2 (2)	3-4 (7)	5 or above (12)	
Research experience	<1 (7)	1-2 (5)	3-4 (3)	5 or above (6)
Publications	None (10)	1 (2)	2-4 (7)	5 or above (2)

More than half of the respondents were 39 years of age or older, with both genders represented nearly equally. All, with the exception of two participants, had a Master's Degree or above, and all, with the exception of one, had working experience other than teaching. 90% of the respondents had at least three years of tertiary-level teaching experience, with more than half having five years or above. Though the participants appeared to be familiar with tertiary-level education, their research experience at the time of the study was rather limited. One-third of the respondents had less than a year of academic research experience. At the same time, about half of the respondents did not have any academic publications at all and only two of the respondents had five or more publications. About half of those with academic publications had engaged in collaborative research/consultancy programmes with external bodies, and about 40% had participated in conference presentation(s) and consultancy projects, or had published books and articles in academic/professional journals. Research topics typically focused on professional areas, such as fashion industry, greenery and education.

Most of the respondents had an extensive experience in professional practice before joining the academia. As Figure 1 below indicates, the main reason for this major career change is the perception that teaching is a meaningful profession that can help future generations and the world as a whole. More than 60% of the respondents were also interested in teaching as a practice.

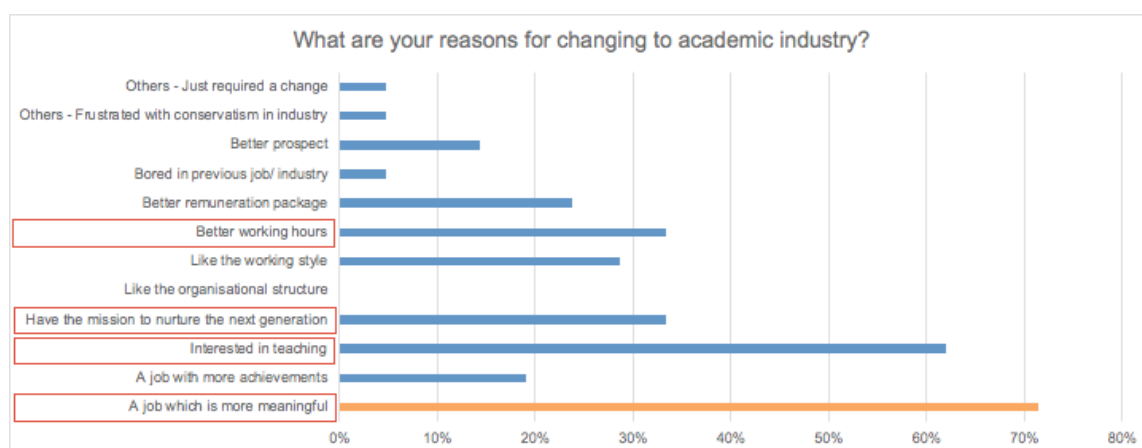


Figure 1. Motivation to join education

Figure 2 presents the main reasons the staff indicated for engaging in academic research. According to the survey responses, more than half of the participants were motivated by independent learning and professional development. They had a personal interest in the topics they were investigating and believed that engaging in research would help them maintain and increase their competitiveness as a scholar and as an educator. Overall, these responses suggest that research is seen more as a means for self-accomplishment rather than as a response to management pressure.

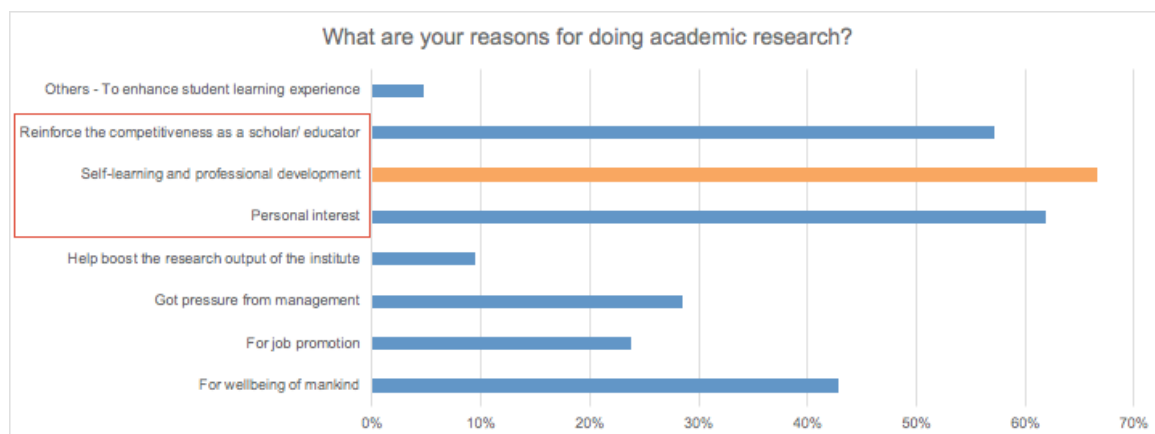


Figure 2. Motivation to do research

Even though the staff seem to be intrinsically motivated to engage in research activities, they perceive a number of challenges inhibiting their success. These are detailed in Figure 3 below.

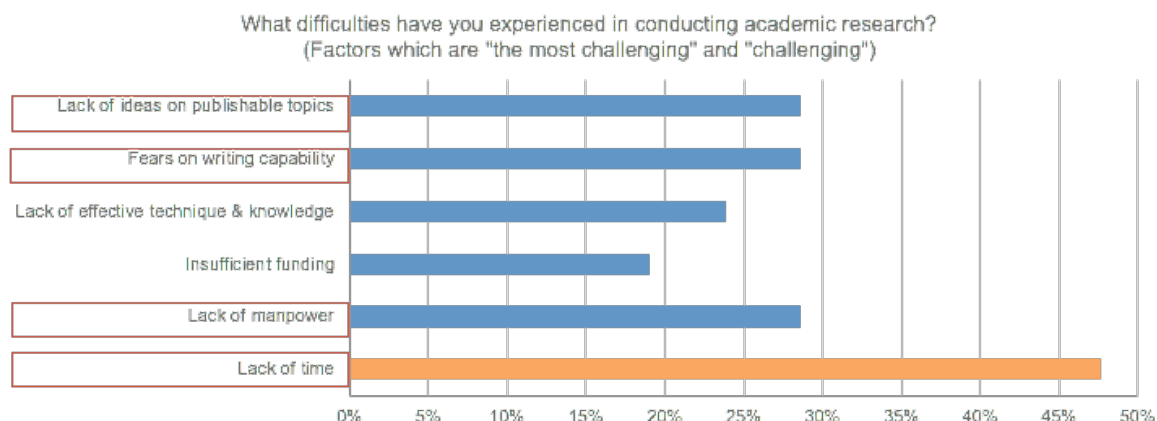


Figure 3. Research-related challenges

As the figure shows, the biggest challenge faced by the Institute’s staff members is lack of time. According to the staff handbook, the official workload of teaching staff is 45 hours a week, with 8 hours out of these suggested for research-related activities. Data from our study shows that staff have to spend 44% of their working hours on average on teaching and 44% on other administrative duties, with only 12% of the working hours left for academic research. A related challenge is the lack of support manpower which is perceived to be a major hindrance.

Two other challenges highlighted by the respondents have to do with confidence in their own ability to identify researchable and publishable topics and with the ability to write well. Given that English is used as a second and sometimes a foreign language in Hong Kong and that most staff have had limited exposure to advanced academic writing, this is not surprising. An ability to conceive a good researchable topic is a challenge faced by many researchers, leave alone those who have had limited, if any, academic research experience.

The problems described above can be addressed by implementing some of the suggestions offered by the respondents (see Figure 4). More than 75% of the staff

surveyed indicated that they would appreciate a chance to hire research assistants, which may be an effective way for addressing the issue of time constraint. Slightly more than half of the respondents suggested official training in academic research. This training should help staff members to develop a better understanding of what is involved in doing research and how to identify researchable topics. This, in turn, should help with enhancing staff confidence in communicating their research. About half of the respondents mentioned incentives like salary increase and career advancement.

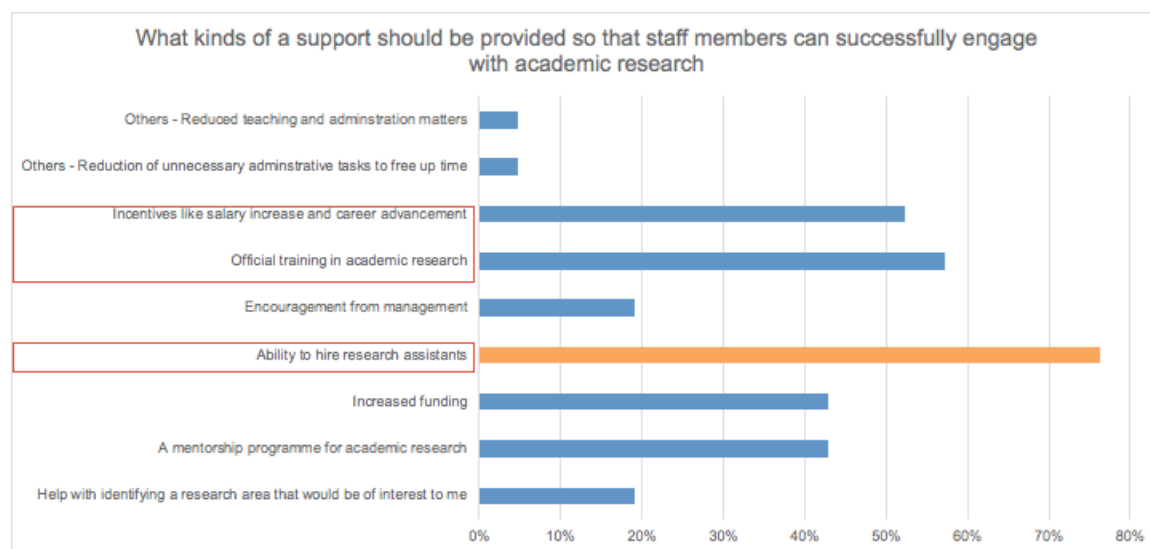


Figure 4. Support needed

As the survey data suggests so far, respondents are highly interested in teaching and generally do not oppose the idea of academic research, but fundamentally they find research challenging primarily due to time constraints and limited resources. Three detailed case studies are used to further understand the personal and institutional contexts of the participants and develop recommendations that can be applied at the institutional policy and department levels.

Case studies

Table 2 below presents some basic information about the three case study participants. These participants were selected to represent a range of experiences and backgrounds. The major difference between the case study participants is their educational background (PhD, Master's and Bachelor's). All three have an extensive experience in professional practice and, on average, 3-4 years of teaching experience. However, while the PhD participant has some research experience, the other two have none.

Table 2. Case study participants

	Participant A	Participant B	Participant C
Gender	Female	Male	Male
Age	38	>50	33
Specialisation	Horticulture and Landscape Management	Landscape and Architecture	New Media and Technology
Educational background	PhD	BSc	MSc
Professional experience	6 years in Horticulture and Urban Greenery	> 15 years as Landscape Architectural Consultant	> 10 years in Digital and New Media
Teaching experience	3-4 years	3-4 years	3-4 years
Research experience	> 5 years	0 year	0 year
Publications	2	0	0

Participant A

Participant A, a 38-year-old female, joined the Institute after a considerable amount of deliberation about the role of publications in an academic's life. She had a somewhat uninterrupted research career, starting with her Master's work, followed by a PhD study, which was then followed by postgraduate work. This research work, however, resulted in very few publications which, she felt, precluded her from joining the academia. Stressed about her lack of publications and not interested in pursuing research any further, she decided to join the professional practice and worked in horticulture and urban greenery for six years. This brought its own challenges, including long working hours spent outdoors. As a junior in the field, she also had a limited choice in what projects she could engage in and felt the job lacked a creative element. These challenges triggered her renewed interest in education, and, after working part-time at another local higher education institution, she joined the Institute.

She is now a keen researcher leading two externally funded projects as a Principal Investigator. Her primary motivation to engage in research at the moment is to increase her competitiveness as a scholar and as an educator. She is encouraged to engage in research by the management though, at the moment, this research is not a compulsory part of her workload. She has published her work as a book chapter and as a paper in conference proceedings.

Participant A talked extensively about two major challenges that she is facing: lack of time and challenges related to managing research assistants. Similar to many of the

other participants, she has to juggle teaching and administrative duties, leaving little time for research. She mentioned that she could complete her research work only when a deadline was set because, otherwise, it was extremely difficult for her to justify spending the little time she had on research. As for managing research support staff, she referred to insufficient funding and suggested that more funding is needed to attract better qualified staff. Otherwise, time spent on training and micro managing the staff does not justify hiring support.

To deal with these challenges, Participant A argued it was important to have a clear division of labor within the department allowing teaching staff not to be overburdened with administrative duties. She also suggested that collaboration with colleagues and joint publications should be encouraged as this would help with workload issues and increase staff interest in research. In addition, she mentioned the more obvious solutions such as increased funding and a better incentive system such as salary and career advancement opportunities.

Participant B

Participant B is an older male teacher specialising in Landscape Architecture. He joined the Institute with more than 15 years of professional experience as a landscape architectural consultant. He believes his extensive professional background contributes to his teaching the most as it helps equip students with practical skills. Though he understands the value of research and the increased importance of postgraduate work for those joining the academia, he has no plans for furthering his studies beyond the Bachelor's degree.

Having said that, Participant B is interested in research which is, at least partly, due to the pressure from the top management. He sees the value of doing research for professional development and for securing his competitive edge but, at the time of the study, he faced the same time constraints similar to those experienced by the other participants. His typical working day is divided in this manner: 80% of the time is spent on teaching, while the remaining 20% on class preparation and administrative work.

If research were to become mandatory, Participant B suggests it would be necessary to employ more staff, including research assistants, and decrease administrative workload. He also mentioned the importance of official support such as training in academic research and publication. One particularly important insight shared by the participant was the need for the Institute to differentiate itself from the other tertiary institutes in the city and establish its own brand image that the general public will be aware of. This would need to include discussions within the Institute on what kind of research would contribute to establishing this clear image.

Participant C

A 33-year-old male, Participant C is a Master's degree holder specialising in Multimedia and Entertainment Technology. Like the other case study participants, he joined the Institute hoping to have better working hours while meaningfully contributing to the development of the younger generations. As a specialist in new

media technologies with more than 10 years of professional experience, he felt he was working 24 hours a day every day and was looking to have a better work-life balance.

Participant C does not have any research training and experience, and, unlike the other two participants, is essentially not interested in research. He described his understanding of academic research as something that happens within a small circle of scholars competing for research funding and trying to create as much output as possible. Though he is trying to do some research now, he finds it especially challenging to understand the research paradigms prevailing in new media studies and to conduct literature reviews. He finds this extremely time consuming and somewhat disappointing as success cannot be guaranteed. Nevertheless, he understands that research can reinforce his competitiveness as a teaching professional working in a tertiary institute. He sees it as an essential part of the job requirement and feels he will be risking his job if he does not produce any research output.

His core difficulties in doing research are a lack of time and limited knowledge of research techniques. Based on 45 hours a week as a teaching staff, he has to contribute 15 hours to teaching and 29 hours to administrative support, while only 1 hour is left for academic research. He feels that official support such as short intensive academic research workshops would be useful but not sufficient for enhancing the knowledge of research techniques. He also feels it would be beneficial to have a research mentor but is unsure about the staff's ability to find time for such mentorship.

Additional support mechanisms that Participant C discussed were help with identifying a research niche that would be of interest to him, ability to hire research assistants, and incentives like salary increase and career advancement. These might help Participant C to engage in productive research and overcome his negative attitude towards academic research.

Conclusion and recommendations

As the sections presented above show, teaching staff working at the vocational institute presented in this paper occupy a unique position: they join the teaching profession with substantial professional experience and minimal, if any, university experience (including both teaching and research). As such, they clearly need to develop university-associated styles of teaching and, importantly, engage in academic research. They have an access to multiple communities of practice and an ability to contribute to discussions on multiple topics. Very often, they join the teaching profession with the noble aim of contributing to the development of future generations and have a clear enthusiasm to teach and even research. At the same time, however, given the limited experience and limited support, they experience a considerable amount of frustration and stress.

To use Gale and his colleagues' words (2011, p. 161), engaging in research-related activities in this context would be "a lived practice of constant becoming, based upon risk-taking and disidentification, offering disruption, challenges to the habitual, and invitations into the unknown."

Given this context, then, and using the conference questions,

How should teaching staff adopt and adapt to change outside their control? How can they not only survive but succeed through change? How should administrators and policy makers nurture, encourage and maintain positive change?

The study presented in this paper has resulted in a number of recommendations. First and foremost, we believe that to encourage a positive change, policy makers, administrators, and teaching staff should engage in constructive discussions aimed to develop a vision of what constitutes good research. Given the unique context of vocational institutes interested in research, Boyer's (1990) notion of "scholarship of teaching and learning" may be useful. In short, action research focused on students' and teachers' practices and their classroom as well as professional experiences may be one way forward. These discussions also need to consider what would make research by vocational institute staff members different from research conducted in research universities.

This vision then needs to be communicated clearly and supported through appropriate mechanisms. Examples of these mechanisms that came through our data include:

- developing new partnerships (e.g. with research universities and individual research consultants);
- supporting collaborative research;
- offering professional development workshops (e.g., on different research methods and writing skills, on managing research staff);
- providing a clear career path that promotes engagement with research;
- financially supporting staff interested in furthering their education;
- clarifying division of labor among teaching and administrative staff;
- balancing teaching, research and administrative responsibilities.

Without a clear vision and support, teaching staff at vocational institutes will remain skeptical about the move towards more research and negative about this change. Support mechanisms, on the other hand, will help ensure that this change is acted on as an opportunity that may lead to positive experiences and development of new exciting possibilities.

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Task-Based Language Teaching in Education in ASEAN Course for Student Teachers Mathematics English Program

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

Education in ASEAN means the course for students, learn about the evolution of education management, analyze the curriculum, teaching and learning of the countries in ASEAN and students are required to use English in this course. The objectives of this research were to study the achievement, to study the students' language ability, and to study the attitudes towards on learning by Task-based Language Teaching. The research samples were 21 third year Mathematics English Program students from Valaya Alongkorn Rajabhat University under the Royal Patronage in the second semester of the 2017 academic year. The design of this study was the one group pretest-posttest design. Tools used in this research were Task-based Language Teaching Lesson plans, English language test, the achievement test and the attitudes towards questionnaire. Time taken for this experiment was 36 hours. From evaluating the knowledge of students on the Education in ASEAN by using Task-based Language Teaching, students had the average score from total 50 scores in pretest and in the achievement test equal to 15.61, and 38.19 respectively. The students had the average language ability score from total 60 scores in pretest and posttest equal to 15.90, and 43.85 respectively. After the study, the students had better achievement and had gained abilities in vocabulary, grammar and speak English for communication. Students have a very positive attitude and they are highly satisfied toward learning by Task-based Language Teaching. The highest level and high level of their satisfaction stand at 80.95, and 19.05 respectively.

Keywords: task-based language teaching

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Introduction

From past to present, teaching and learning English as a Foreign Language (EFL) has had a positive impact on most Thai students' English skills. Most students have opportunities to learn and practice their language skills only in their classrooms, which is one of the important reasons why they lack opportunities to practice their English in real life situations. It is evident that the provision of opportunities for students to practice their language skills is extremely scarce. Worse still, this problem is exacerbated by the fact that teachers have a limited time to lay the foundation on which students' grammatical knowledge is built. Despite the fact that Thai students nowadays have more opportunities to practice their English by themselves due to their access to technology and the Internet, the problem found among them is the lack of their basic speaking skills, which is instrumentally important in communication. According to the author's direct experience in teaching English program's students at the university level, one of the responses that often comes out of these university students is "they understand what is said, but do not know how to either respond to questions or explain in English." This response is indicative of the inadequacy of the time spent on practicing their speaking skills inside and outside of their classrooms, despite them having learnt English since elementary school.

The Ministry of Education has since been aware of this existing problem and announced the reform of the English teaching and learning geared towards Thailand's education, so as to enable students to utilize the English language in communication and as an instrument to seek more knowledge in the foreseeable future.

According to the abovementioned policy, it has urged the university to plan their lessons by focusing more on communication. A teaching approach, which focused on pronunciation, vocabulary, and grammar, was changed into that which now focuses on communication skills in real life situations based on the contexts, topics, and roles of concerned parties.

According to the abovementioned methods, they demonstrate that communication-based language teaching does not create teaching methods itself; however, it is a language teaching guideline that could lead to other various teaching methods such as Content-Based Instruction and Task-Based Language Teaching. Content-Based Instruction is a language teaching approach that encourages the use of a target language as an instrument in a variety of subjects. With regard to Task-Based Language Teaching, it is a language teaching approach that focuses on communication which varies according to particular tasks. Students will be able to practice four English skills. Larsen-Freeman and Anderson (2011) talked about the Task-based Language Teaching functions as an exemplary teaching method that clearly focuses on communication as students can apply their language skills to real life situations. In other words, students are equipped with the desired skills, especially when they need to exercise them to successfully complete their anticipated tasks. Task-Based Language Teaching is regarded as an extremely appropriate method as it not only enables students to develop their language skills and have motivation to study English, but this teaching approach also focuses on the processes that allow teachers to apply it to students at all levels.

Model of Task-Based Language Teaching

Breen (1987) perceives tasks as “any structural language learning endeavor which has a particular objective, appropriate content, a specified working procedure, and a range of outcomes for those who undertake the task.”

Willis (1996) talked about the models of Task-based Language Teaching by outlining their three steps as follows:

1. Pre task: This is a step in which teachers will get their students ready before they carry out their tasks. For English language teaching during this step, teachers will elicit students’ previous knowledge of grammar and vocabulary germane to the content, after which they will teach them vocabulary and grammar that they need to use to complete their tasks. If students are good memorizing grammar and vocabulary, finishing tasks will be easier. Therefore, if teachers realize that students have limited English proficiency, they must spend more time on this step.

2. Task cycle: This step allows students an opportunity to put their knowledge acquired in the first step into practice to carry out their assigned tasks. Each task may be assigned to either a pair or a group of students so that they can practice working with other students and attempt to be responsible for their assigned tasks. Task cycle can be divided into three 3 sub-steps as follows:

2.1 Carrying out tasks: Teachers will divide students into groups to complete their tasks within the specified timeframe. They will notify their students of when time is up and ask them to divide their duties within their groups to prepare for the presentation of their reports. While students carry out their tasks, teachers are tasked to monitor and make note of students’ use of language. If students need language-related assistance, they can ask their teachers.

2.2 Planning presentation of reports: When students run out of time to finish their tasks, they can share their responsibilities to prepare for the presentation of their reports.

2.3 Presenting reports: Students prepare the presentation of their reports in groups by using the vocabulary and structure of language that they study in the first step. While students present their reports, teachers will monitor and make note of their use of language for future reference.

3. Post task or language focus: It is the last step in Task-based Language Teaching as it will take place after students present their reports. It can be categorized into two sub-steps as follows:

3.1 Language Analysis: Teachers will bring their information on students’ use of language and write them on the whiteboard so that students can revise and examine the accuracy of their use of language. Afterwards, if there are still any errors, teachers will correct them. Again, if students have further questions, teachers can also elaborate further. Students will then note the vocabulary and structure of language in their books.

3.2 Skills Practice: This is a step in which teachers will allow students to practice their language skills by using new vocabulary.

In the aforementioned context of teaching learning, researcher has provided the lesson plan and activities in relation to Task-based Language Teaching by based on English in the course of Education in ASEAN.

Objectives

The objectives of this research were as follows.

1. To study the achievement.
2. To study the students' language ability.
3. To study the attitudes towards on learning by Task-based Language Teaching.

Sample

The research samples were 21 third year Mathematics English Program students from Valaya Alongkorn Rajabhat University under the Royal Patronage in the second semester of the 2017 academic year.

Content

This research aimed to study the achievement in the course of Education in ASEAN. The course is offered in Bachelor of Education, learn about the evolution of education management, analyze the curriculum, teaching and learning of the countries in ASEAN and students are required to use English in this course.

Variables

Independent variables include the activity of Task-based Language Teaching on Education in ASEAN course.

Dependent variables include;

1. The students' achievement.
2. The students' language ability.
3. The attitudes towards on learning by Task-based Language Teaching.

Methodology

The design of this study was the one group pretest-posttest design.

Research tools

Tools used in this research were Task-based Language Teaching Lesson plans, English language test, the achievement test and the attitudes towards questionnaire.

Data collection

Data was collected by researcher, applied Task-based Language Teaching in real classroom with the students who attended the course of Education in ASEAN in the second semester of the 2017 academic year. Time taken for this experiment was 36 hours. Before the learning, students were required to evaluate the knowledge on the

Education in ASEAN and language ability. The activity was divided into two parts. The first part provided the general information, the basis of the education system of countries in ASEAN and the knowledge framework of Task-based Language Teaching to students in order to make a clear understand. The students were allowed to ask questions when they had an understanding of the framework and principles of Task-based Language Teaching. The second part was the learning activities by using Task-based Language Teaching. Three steps of learning by using Task-based Language Teaching were Step 1 Pre task, Step 2 Task cycle; divided into three sub-steps including carrying out tasks, planning presentation of reports and presentation of reports and Step 3 Post task; divided into two sub-steps including language analysis and skills practice. After the learning had been finished, students were rerquired to take the English language test, the achievement test and the attitudes towards questionnaire.

Data analysis

With regard to the analysis of data, researcher analyzed the achievement test, English language test, and the attitudes towards questionnaire by using basic statistics in finding frequency, percentage, mean and standard deviation.

Conclusion and discussion

From evaluating the knowledge of students on the Education in ASEAN and language ability by using Task-based Language Teaching, it was found that the students had the average of the achievement after studying is higher than before. From total scores 50, the average score in pretest is 15.61 whereas in the achievement test equals to 38.19. The average of the language ability of students from total scores 60, the average score in pretest is 15.90 whereas in posttest is 43.85. The students had better achievement and gained abilities in vocabulary, grammar and English for communication. They had more ability to learn and use English language to communicate after Task-based Language Teaching was introduced to the classroom. Task-based Language Teaching was a teaching method that allowed students to practice their language skills and learn through their groups. In addition, not only could they practice their language, but they could also exercise a variety of other necessary skills. Students were also more enthusiastic about participating in activities, trying harder to communicate in English, despite stumbling upon difficult vocabulary. Skehan (1996) said that, Task-based Language Teaching is an attempt to address one of the dilemmas of language teaching how, on the one hand, to confront the need to engage naturalistic learning process, while, on the other, to allow the pedagogic process to be managed in systematic manner. Students were highly attitudes toward learning by using Task-based Language Teaching. The highest level of their satisfaction stands at 80.95 and high level of their satisfaction stands at 19.05. Because they were allowed to learn, design, and plan the presentation of their reports on their own. These made them easier to understand the contents and found that Task-based Language Teaching enabled them to develop their English proficiency in vocabulary, grammar and speak English in communication. Huang (2016) studied about the Application of Task-based Language Teaching Method in a Comprehensive English Class in China, The results revealed that the majority of the students recognized a positive relation of Task-based Language Teaching to their motivation for English study in terms of an enhanced interest in and enjoyment of the language itself, more active participation in

classroom activities and strengthened study autonomy as indicated by the increased time spent on preparation for and completion for tasks. Most students also identified a growth in their language skills, especially their speaking and writing skills, information retrieval abilities, and a better understanding of cultures due to the communicative nature of the approach.

Acknowledgement

This research was financially supported by the Research and Development Institute of Valaya Alongkorn Rajabhat University under the Royal Patronage of Thailand.

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*A Comparative Study on Compliment Response
between Indonesian EFL Students and English Native Speakers*

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Asian Conference on Education 2018
Official Conference Proceedings

Abstract

While western people use more acceptance continuum on compliment response, Indonesians utter more denial continuum which can somehow put speakers into a face-threatening situation. This study investigated compliment response employed by EFL students and English native speakers. Two research questions were set: 1) How do Indonesian EFL students and English native speakers respond to compliments?. 2) Is there any correlation between Indonesian EFL students' proficiency level and their compliment response utterances in English?. This study involved three groups of participants: 12 English native speakers, 12 high-proficiency and 12 low-proficiency Indonesian EFL university students. The research instruments used in this study were an online grammar test and a set of ten discourse completion tasks. Participants' responses were coded and analysed using Tran's compliment response framework. The study found that native speakers combined some compliment upgrades and appreciation tokens in compliment response; whereas, Indonesian EFL students combined some compliment responses in their utterances, including, appreciation token, return, and compliment downgrade. There is a correlation between students' proficiency level and their compliment response utterances as most high-proficiency EFL students produced utterance more varied and more similar to those employed by native speakers than that used by low-proficiency students. The combination strategies used by EFL students were evidence of L2 knowledge deficiency and the influence of pragmatic transfer from L1 to L2. Therefore, EFL teachers should explicitly teach more compliment response strategies to raise students' awareness on English culture and elaborate their speaking to be more competent as close to native speakers as possible.

Keywords: compliment response, EFL high-proficiency students, EFL low-proficiency students, English native speakers.

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I. Introduction

In L2 communication, not only non-native English speakers carry their knowledge of English language, such as, grammatical structure, vocabulary choice, pronunciation, and intonation, but they also tend to get influenced by their L1 cultures and sometimes transfer their utterance from L1 to L2 (Cedar & Setiadi, 2016, p. 63). The influence of speaker's L1 culture somehow can lead to a face-threatening situation for both speaker and hearer when it comes to respond on speech acts, for example, compliments and compliment response. It is argued that non-native English speakers respond to compliment in a different way due to the L1 cultural and norm diversities which bound their identity and require them to perform differently in specific acts (Phoorcharoensil, 2012, p. 276). Compliments are used by speakers to show their gratitude to the hearer and in return they expect a compliment response uttered by the recipient. Responding to compliments somehow can cause both positive and negative face as one can be considered as immodest or conceited meanwhile at the same time, rejecting the compliment can put someone at risk of face losing and impoliteness (Gajaseni, 1994, as cited in Cedar & Setiadi, 2016, p.64). English native speakers use more acceptance continuum on compliment response; however, few studies on compliment response revealed that Indonesians are using more denial continuum than acceptance continuum on compliment response (Cedar & Setiadi, 2016, p.65).

Although some researchers have studied English compliment responses (CR) used by Indonesian speakers, no previous study has investigated the CRs in relation to the proficiency- level differences of Indonesian EFL learners in which this research seeks to address. The aim of this study is to compare the ways English native speakers and Indonesian EFL students respond to compliment and examine whether there is a correlation between Indonesian EFL learners' different proficiency level and their compliment response in English. Therefore, the research seeks to address the following two questions: 1. How do Indonesian EFL low-proficiency and high-proficiency students and English native speakers respond to compliments in English? 2. Is there any correlation between Indonesian EFL students' proficiency level and their compliment response use in English? Two hypotheses were built upon these two questions as follows: 1. Indonesian EFL students are more prone to denial continuum than acceptance continuum on compliment response. 2. There is a correlation between Indonesian EFL learners' proficiency and their compliment response use in English in that high-proficiency learners' compliment response strategies are more varied and are more similar to those employed by native English speakers than that in low-proficiency learners. This research provides an exciting opportunity to advance EFL teachers and learners' knowledge of cross cultural understanding, learners' awareness on cultural differences and explicit pragmatic instruction.

II. Literature Review

This section briefly discusses theoretical references of pragmatics, cross-cultural studies, compliment and compliment response, and critically reviews relevant studies conducted by earlier researchers.

2.1. *Discourse, pragmatic and cross cultural studies*

Discourse is multiple ways of saying-doing-being-valuing in the appropriate costume and interaction as one does not merely say the right thing grammatically correct, but he also needs to say it at the right time and in the right time (Gee, 1990, p.137). Meanwhile, pragmatics is the study of language in action that explores the meaning beyond the utterances which is embedded on the basis of the social and situational context (Stadler, 2013, p. 1). As each context demands certain functional knowledge and pragmatic competence, the interlanguage speakers, L2 speakers, are expected to possess both competencies in order to be able to take part in communication appropriately at the right time and in the right context (Blum-Kulka & Olshtain, 1984 p. 196). Therefore, the cross-cultural studies have been conducted in many contexts to investigate whether the L2 speakers have understood both functional and pragmatic rules of use for a given language. The speech act theory is one of the main cross-cultural pragmatic platforms that concentrates exclusively on specific speech events, such as compliments, apologies, refusals, requests, greeting, complaints, and disagreements (Stadlers, 2013 p.3). As the speech acts events vary from culture to culture, the L2 speakers tend to bring their L1 culture when dealing with those speech act situations which somehow can lead to communication breakdown and face threatening acts.

2.2. *Compliment and compliment response*

This current study investigated one speech act that is compliment response as this speech act is obviously “cultural and sociologically condition” (Jucker, 2009, p. 1612) where compliments that are appropriate in a particular situation for one language community might be inappropriate in a comparable situation for another language community. Holmes (1988, as cited in Phoocharoensil, 2012, p. 276) defined compliment as an explicit or implicit speech act which are attributed to the hearer for some goods, such as possession, characteristics, and skills. Compliment is uttered by speakers to build or foster solidarity through showing admiration or approval (Herbert, 1989, as cited in Istifci, 2017, p. 17). In the same line, Brown and Levinson (1978, as cited in Bowe, Martin & Manns, 2007, p. 53) claimed that the act of complimenting was considered as a positive politeness strategy; thus, appropriate responses to compliments become essential. However, responding to a compliment places the speakers in a dilemma whether to agree with or reject the compliment (Herbert, 1989, as cited in Allami & Montazeri, 2012, p. 467).

To investigate the compliment response studies, some frameworks of compliment response categories have been designed by previous scholars. The classic framework was first proposed by Pomerantz (1978, as cited in Razi, 2013, p. 62) in which she categorised the compliment response into three degrees, acceptance (appreciation token, agreement), rejections (disagreement), and self-praise avoidance mechanisms (praise down-graders, referent shift).

Herbert (1990, as cited in Allami & Montazeri, 2012, p. 466) and Chiang and Pochtrager (1993, as cited in Allami & Montazeri, 2012, p. 466) classified the compliment responses into two levels. On micro level, there were 17 patterns, as follows: appreciation token, politeness formula, comment acceptance, smiling, comment, offering, praise upgrade, comment history, reassignment, return, entreaty,

scale down, question, disagreement, qualification, no acknowledgement, request interpretation. On macro level, the responses were allocated in five classes, they are, acceptance, positive elaboration, neutral elaboration, negative elaboration, denial, and smiling.

Another scholar, Holmes (1989, as cited in Sadeghi & Zarei, 2013, p. 34) offered the taxonomy of CR strategies as follows: accept (appreciation token, agreeing utterance, downgrading, and utterance), reject (disagreeing utterance, question accuracy, and challenge sincerity), evade (shift credit, informative comment, and request reassurance), surprising, smiling, suggestion, wish/hope, and pleasing.

Similarly, these CR frameworks above tend to separate each compliment response into its category. However, it was found that people's utterances on compliment responses are not isolated, rather than placing compliment response somewhere in between acceptances and agreements on the one side and rejections and disagreement on the other sides (Pomerants, 1978, as cited in Tran, 2010, p. 108). Therefore, Tran (2010, p. 106) developed a new framework of compliment that connected each category of compliment response and formed two continuums as follows (see appendix 2 for more explanation).

Compliment upgrade => Agreement => Appreciation Token => Return => Explanation
=> Reassignment => Non-idiomatic response => Compliment downgrade =>
Disagreement => Expressing gladness => follow-up question => doubting (question =>
opting out.

Note:

The red words are categorised as acceptance continuum

The green words are middle continuum

The blue ones are avoidance continuum

Figure 1

2.3 Previous compliment response studies

A large and growing body of literature has investigated compliment response studies in many different contexts. Allami and Montazeri (2012, p. 466) investigated 40 Iranian EFL males and females' compliment responses with the consideration of gender, age, and educational background using discourse completion task (DCT) survey and concluded that most Iranian EFL students accepted compliments. Nonetheless, some utterances were influenced by their culture-specific behavioural norms due to the lack of sufficient pragmatic knowledge. This study supported the present study as it examined the utterances produced by different proficiency level of Iranian EFL students. However, the use of rating treatment as another data instrument could lead to the inconsistent result of participants' response and their own judgement. Instead of using rating treatment, it could be improved by follow-up interview to justify the reasons why they responded to the compliment in the way they had.

Likewise, Phoocharoensil (2012, p. 276) conducted the L2 English compliment responses on four groups of participants: native speakers of American English, native speakers of Thai, High-proficiency Thai EFL learners and low proficiency Thai EFL learners and found that while Americans accepted compliments, Thais used more of the denial end, doubting questions, compliment downgrade responses. Thai EFL learners with high level of proficiency were more inclined to use CR which corresponded to the American norms, whereas learners whose proficiency was lower apparently responded to English compliments far more differently from the America convention. This study was in line with the proposed study as it also studied the correlation between proficiency level and CR strategies in English. Besides, this study was similar to the study of Allami and Montazeri as it used DCT survey as the data instrument. Nonetheless, the weakness of this study is that the DCT scenarios in this study were not clear, particularly as, social status and social distance were not emphasized. Consequently, the proposed study will improve the DCT scenarios in the way the social status and distance are clearly stated.

Furthermore, Razi's (2012, p. 61) contractive study of compliment responses among Australian English and Iranian Persian speakers conducted by Razi (2012, p. 61) showed that although both Iranian EFL students and Australians preferred to use CR strategies, such as, accept- evade- reject, the accept strategy was less used by Iranians than that in Australians. This finding was the opposite of Allami and Montazeri's study.

In a case study on the use of compliments in Persian and English, Sadeghi and Zarei (2013, p. 30) found the Iranian Persian EFL learners applied accept-evade-reject strategies in both English and Persian DCT survey. This result of the study contradicted to Allami and Montazeri's study; however, Sadeghi and Zarei's study supported the study of Razi (2012, p. 61). Besides, the result of the study was lack of research implication on the pedagogical practice.

A small-scale compliment response study in North Cyprus by Sucuoglo and Bahcelerli (2015, p. 3286) reached another conclusion where the non-native speakers (NNS) did not produce the target-like compliment response due to the influence of L1 culture and tended to apply silence when the compliments were given from the strangers. The finding of this study confirmed the prior study of Allami and Montazeri (2012). The strength of this study is that the researchers conducted a follow-up interview after giving the DCT survey for the participants to find out participants' justification on what they wrote in the DCT survey.

In recent study, Cedar and Setiadi (2016, p. 63) examined Indonesian EFL learners and Thai EFL learners on compliment responses in English and reported that Indonesians were more prone to deny compliments, while, Thai learners tended to accept compliments. The weakness of this study is that although the researchers administered the oxford placement test to the participants to categorise students' proficiency level, the researchers did not mention how students of certain proficiency level produced their compliment response performance.

III. Research Methodology

3.1. Participants

This study involved three groups of participants as follows, a group of 12 English native speakers, a group of 12 low-proficiency Indonesian EFL students, and a group of 12 high-proficiency Indonesian EFL students. These two groups of Indonesian EFL learners are second and third-year university students in majoring English Education at Widya Mandira Catholic University, Kupang, East Nusa Tenggara, Indonesia. Meanwhile, native English speakers in this study are the researcher's friends on Facebook who are Australians, Americans and British.

The participants were recruited through the researcher's Facebook account where research invitation with the attachment of DCT questionnaire link was sent online. Those who were willing to be the research participants would click the link on the survey. Indonesian EFL learners were instructed to work on all sections, while, English native speakers were asked to respond on section 1 and section 3 only. The questionnaire can be accomplished in approximately 25 minutes for both native speakers and non-native speakers.

3.2. Research instruments

The study used an online DCT questionnaire. The DCT questionnaire consisted of three sections as follows. Section one contained the research consent upon participants' willingness in taking part in the study, subjects' identity information whether they are considered as native speaker or non-native speakers, and the research instruction. Section two was a test of 10 English grammar questions and section three provided 8 compliment response scenarios.

Ten grammar questions taken from Barron TOEFL exercise were used to categorise Indonesian EFL students' proficiency level. Meanwhile, the DCT questionnaire contained 8 items which measured the variables of compliments topics, such as possession, skill/performance, appearance, and personality traits, with the consideration of social distance (either close or distance), and relative power (equal, high). The design of DCT scenarios were modified from the DCT survey of two previous studies, such as Phoocharoensil's study (2012, p. 287) and Allami and Motazeri's study (2012, p. 478). Although many criticisms have been raised regarding the DCT due to the unnatural occurring data and the lack of turn-taking elements, this test allows the researchers to control the language that appears in the setting context and to collect a large sample of data in a short period of time (Arcidiacono, 2013, p. 23; Martinez-flor, 2011, p. 53).

3.3. Data collection

The study applied a coding analysis where all the responses were coded and measured its percentage of occurrence and later described. Participants' responses were analysed using Tran's compliment response framework as it was assumed that Indonesian EFL students might use the combination of compliment response on their utterances. Therefore, the data was best explained using Tran's framework to answer these two core research questions.

As for students' proficiency level, Indonesian EFL students' responses on the grammar test were categorised into two groups. Those who gained score 6 to 10 were classified as high-proficiency students, whereas, those who received point below 5 were considered as EFL students of low-proficiency.

IV. Result and discussion

Based on the data collection, there were 384 compliment response items produced by three groups of research participants. The data was coded into each continuum; acceptance continuum, middle continuum and the avoidance continuum. Surprisingly, the researcher also found 4 other categories which were not classified by Tran in her CR taxonomy, they are, hope, joking, suggestion, and offering. The following section reviews and discuss the research findings.

4.1. Comparison between Indonesian EFL low-proficiency and high-proficiency students and English native speakers' compliment responses in English.

No	CR strategies	EFL low-proficiency		EFL high-proficiency learners		English Native Speakers	
		Frequency	Percentage of CRs (%)	Frequency	Percentage of CRs (%)	Frequency	Percentage of CRs (%)
Acceptance continuum							
1	Compliment upgrade	31	22.3	13	10.24	16	13.68
2	Agreement	3	2.17	4	3.14	5	4.28
3	Appreciation Token	30	21.58	37	29.14	34	29.05
Total category of acceptance		64	46.05	54	42.52	55	47.01
Middle continuum							
4	Return	5	3.7	11	8.67	6	5.12
5	Explanation	14	10.06	12	9.45	15	12.83
6	comment history	9	6.46	3	2.36	3	2.56
7	Reassignment	2	1.44	7	5.52	5	4.27
8	Non-idiomatic response	0	0	0	0	0	0
Total middle continuum		30	21.66	33	26	29	24.78
The avoidance continuum							
9	Compliment downgrade	10	7.2	10	7.88	9	7.7
10	Disagreement	4	2.86	3	2.37	3	2.57
11	Expressing gladness	9	6.46	18	14.17	8	6.85
12	follow-up question	0	0	0	0	4	3.41
13	doubting	12	8.62	4	3.14	5	4.28
14	opting out	0	0	0	0	1	0.85
Total denial continuum		35	25.14	35	27.56	30	25.66
Other continuum							
15	hope	6	4.31	4	3.14	0	0
16	joking	1	0.71	0	0	1	0.85
17	suggestion	2	1.42	1	0.78	1	0.85
18	offering	1	0.71	0	0	1	0.85
Total other continuum		10	7.15	5	3.92	3	2.55
Overall Total		139	100	127	100	117	100

Table 1. Percentage of compliment response among three participant groups

From the table above we can see that there were 139 items, 127 items and 117 items employed by two groups of Indonesian EFL students and English native speakers respectively. What is interesting in this data is that three groups of research participants produced varying frequencies in acceptance continuum, middle continuum, denial continuum and the additional continuum.

In general, these three groups were found to accept compliments. However, the percentage of acceptance continuum was slightly higher in English native data than

that in Indonesian EFL data. English native speakers responded to compliment with 47.01% of acceptance, i.e. appreciation token, compliment upgrade, and agreement. Meanwhile, Indonesian EFL low-proficiency and high-proficiency students achieved 46.05% and 45.52% respectively. This finding supports the number of earlier studies, such as, Razi's (2012, p. 61), Phoocharoensil's (2012, p. 276), Sucuoglo and Bahcelerli's (2015, p. 3286) study where English native speakers accepted compliments more often than non-native English speakers did. This finding, in some ways, contradicted that of Cedar and Setiadi's (2016, p. 67) study that Indonesian EFL students were more prone to denial continuum. This could emerge as the result of Indonesian EFL learners' educational background, that is English major; therefore, they presumably already acquired certain functional knowledge and pragmatic competence to be able to take part in L2 communication appropriately (Blum-Kulka & Olshtain, 1984, p. 196).

Interestingly, this present study found that both groups of Indonesian EFL students also responded to compliment by combining one compliment with other compliment response strategies. For instance.

- Indonesian EFL low-proficiency student: *Thank you so much bestie, I need time to find shoes like this.* (appreciation token- compliment downgrade)
- Indonesian EFL high-proficiency student: *Thank you, dear. I'll keep up the good work.* (appreciation token-hope)

This result proves that influence of L1 occurred in L2 interaction where Indonesian EFL students accepted other speaker's compliment by thanking them while at the same time justifying their utterance in order to be seen as being modest. This finding was consistent with Istifci's (2017, p. 21) study which found that non-native English speakers used CRs combination strategies in their utterances.

In terms of middle continuum, these three groups produced significantly different rates. English native speakers and Indonesian EFL high-proficiency students used 29% and 26% of this strategy respectively.

For example:

- English native speaker (NS 6): *Thanks! Love your scarf* (Return)
- Indonesian EFL high-proficiency learner (HP 6): *Thank you, that's a very sweet of you.* (Return)

Meanwhile, Indonesian EFL low-proficiency students less favoured this CR middle continuum (21.66%). This finding supported Cedar and Setiadi's (2016, p. 69) findings where there was an internal conflict faced by complimentees by either accepting the compliment with the risk of showing off or denying the compliment with the risk of impoliteness.

As shown in table 1, it was noticeable that Indonesian EFL high proficiency learners produced high percentage of denial continuum (27.56%), meanwhile, English native speakers and low-proficiency students shared quite similar overall percentage of this strategy by 25.14% and 25.66% respectively. These findings lend support to the past studies of L2 English CRs (e.g, Phoocharoensil, 2012, p. 276; Cedar & Septiani, 2016, p. 69). Despite high percentage of acceptance continuum employed by Indonesian EFL students, there were still some degrees of avoidance continuum found in their utterance due to the value of humility and modesty in L1 culture.

For example:

- Indonesian EFL high-proficiency learner (HP 10): *Sir, I am eternally to you for your attention towards me as one of your students. I am very thankful that you are my teacher* (explanation- expressing gladness)
- Indonesian EFL low-proficiency learner (LP 8): *Yes sir, i already save a lot of money for this* (Explanation)

This study also found another continuum, such as, hope, joking, suggestion, and offering which were not included in Tran's CR strategies. These four findings were categorised on the macro level of compliment response strategies in Holmes' CRs taxonomy (1989, as cited in Sadeghi & Zarei, 2013, p. 34). These four CRs strategy were mostly preferred by Indonesian EFL low-proficiency students (7.15%), compared to 3.92% and 2.55% of this strategy in Indonesian high-proficiency students' and English native speakers' data. The findings of four other CR strategies further supported the idea of earlier studies (Sadeghi & Zerai, 2013, p. 34; Istifci, 2017, p. 21; Cedar & Setiadi, 2016, p. 69). These categories were used to accept compliment indirectly but at the same time concerned about others' condition.

For example:

- Indonesia EFL low-proficiency student: *Thanks... why you don't try this hair style too? i think it would be great too.* (appreciation token- suggestion)

It was clearly seen, as demonstrated above, that both groups of Indonesian EFL students were more prone to accept compliments and combine their CR strategies to show modesty than the English Native speakers did. Whereas, the English native speakers evidently used compliments far more other than the Indonesians. Having said that, the middle continuum and denial continuum were more preferred by Indonesian EFL low-proficiency students than that employed by English native speakers and Indonesian EFL high-proficiency students. This findings were the result of lack of L2 cultural knowledge and L1 pragmatic transfer which will be discussed in the following section. To summarise, these above findings have contradicted the first hypothesis, which claimed that Indonesian students would go toward the denial continuum.

4.2 Indonesian EFL learners' CR use

This current study also aimed to examine whether there is a correlation between the use of CR in L2 English and learners' proficiency. As seen in table 1, Indonesian learners of high proficiency level apparently employed CR pattern resembling those in English native speaker forms, 54 times and 55 times. With in-depth investigation, the data indicated that the high-proficiency learners uttered 10.24% of compliment upgrade, whereas, the English native speakers produced 13.68% of this strategy. As for agreement, high-proficiency learners generated 4% of the strategy which was 1% less than that uttered by English native speakers (5%). Despite this, both groups brought slightly similar rate of appreciation token, 29.14% and 29.05% respectively. In terms of middle continuum, the high-proficiency student showed slightly similar rate toward comment history (2.36%) and reassignment (5.52%) to English native speakers' rates of these two strategies, (2.59% & 4.27% respectively). It is worth noticing that the percentage of avoidance continuum toward

disagreement and doubting was 2.37% and 3.14% achieved by high-proficiency learners. These proportions slightly resembled the same CR categories produced by Native speakers, 2.57% and 4.38% respectively. Furthermore, high-proficiency learners used less additional strategies, such as hope (3.14%) and suggestion (0.78) compared to English native speakers who employed 0.85% each for hope, joking, and suggestion, and used 2.55% of offering.

In contrast, Indonesian EFL learners of low-proficiency level responded to English compliment in a noticeably different manner from English native practice. That is, 22.3% of them used compliment upgrade which was the highest rate among these three groups. Nonetheless, only 21.5% of low-proficiency learners applied appreciation token in their compliment response, compared to 29.05% in English native data. This group also made up 2.17% of agreement which was three times lower than English native speakers' agreement rate, 5%. As for middle continuum, particularly return, explanation, comment history and reassignment, the low-proficiency learners employed the higher rate of comment history, 6.46% compared to 2.50% in Native speakers' data. Return was rarely used by this group as it was only 1.44%, compared to English native data, 4.27% and high proficiency student data, 5.52%. In terms of denial continuum, low-proficiency learners and English native speakers shared quite similar proportion of expressing gladness, 6.46% and 6.85 respectively. Nonetheless, it was noticeable that compared to English native speakers and high-proficiency students' rate of doubting, low-proficiency produced the highest rate of doubting strategy to deny compliment (8.62%).

In summary, the findings above supported the second claim that there was a correlation between Indonesian EFL learners' proficiency and their compliment response use in English. High-proficiency learners used compliment response strategies, for instance towards the acceptance continuum, comment history, reassignment, avoidance continuum and other additional continuum, which were more varied and were more similar to those employed by native English speakers than that used by low-proficiency learners. The higher proficiency in L2 the learners have, the higher-likelihood for L2 learners to have CR performance closer to the native speakers' norms (Phoocharoensil, 2012, p. 281). The following section discussed the influence of L1 pragmatic transfer in L2 interaction and students' lack of L2 knowledge.

4.2. Evidence of lack of L2 knowledge and pragmatic transfer

There were two reasons which caused Indonesian EFL learners of low-proficiency level respond to English compliment differently from English native practice, they are, lack of L2 cultural practice and the pragmatic transfer from L1 to L2.

The deficiency of adequate L2 cultural practice can be showed in the data where low-proficiency students overused the appreciation token, such as, thanking. This finding was in relation to Allami and Motazeri's study (2012, p.476) that students who were lack of L2 knowledge would find difficult to deal with real context and favourably choose to thank other people as compliment response instead of modifying their utterances.

Furthermore, Indonesia society also values modesty and want to be seen humble when responding to compliments (Cedar & Setiadi, 2016, p. 64). It was apparent that although many low-proficiency students tried to modify their compliment response, they still brought their L1 culture in L2 interaction; thus, they frequently employed the denial continuum, such as, doubting and disagreement, in order to be seen as modest.

In the contrary, students of high-proficiency less relied on L1 transfer and used more strategies which were closer to English native practice.

V. Pedagogical implication

Based on these finding above, two significant pedagogical implications are suggested for EFL English teachers.

First, EFL teachers should focus not only on the linguistics knowledge but also the pragmatic knowledge. EFL teachers are advised to introduce pragmatic aspects to EFL students through providing the authentic materials to the class, such as, English movies, videos, clips which allow learners to learn natural English use.

Second, when English teachers use authentic material to teach pragmatics, they are advised to design the English lesson based on the teaching pragmatic framework proposed by Martinez-flor and Uso-Juan (2016, as cited in Taguchi, 2011, p. 297) where it has six stages of pragmatic instruction: researching-reflecting- receiving-reasoning- rehearsing- revising. The first two stages are to allow students to understand pragmatic concepts through analysing the L1 pragmatic data. Teachers can use text conversation between Indonesian person meets or greets other people, like family, strangers. In the third and fourth stage, the teacher introduces the L2 text which shows how the native speaker greets other people. Teacher can engage students to both texts by comparing the L1 pragmatic data to L2 pragmatic data and examining the similarities and differences between two cultures. More L2 communicative activities and feedback are followed in stage six.

The consideration of teaching pragmatic is crucial in EFL class, as it not only raises learners' awareness on L2 target culture, but also allows learners to reflectively think and respect their L1 culture as well as enrich their knowledge of global cultural diversity.

VI. Conclusion

The study shows the similarities and differences between the group of English native speakers and the other groups of Indonesian EFL learners' CRs in terms of strategy use. In general, Indonesian students accepted compliments, but, students of high-proficiency level tended to respond to compliment in a way closer to the target-language culture, compared to low-proficiency students who still applied the L1 culture in L2 interaction due to L2 transfer and lack of L2 exposure. Therefore, providing a lesson through a teaching pragmatics framework can be one of many ways to introduce and exchange cross-cultural knowledge and allow learners to put the grammar in use, make their utterance more natural and say the right thing at the right time and in the right context.

Despite its fruitful contributions, the current study still has some limitations. First, although Indonesian EFL students took the grammar test designed by the researcher, the grammar test result did not simply represent students' overall proficiency level because there was a high possibility that students could look up the answers by consulting a dictionary, communication devices, and friends. It is suggested that future studies may recruit students who already took official TOEFL test to gain more valid data on students' proficiency. Lastly, the study applied DCT survey that has been criticized regardless of its advantage; thus, the future studies may apply more data collection instruments, such as, follow-up interview to discover more aspects of CRs use.

Acknowledgement:

The author wishes to extend her deepest gratitude and sincerest thanks to Indonesian Endowment Fund for Education (LPDP) for giving financial assistance to pursue her master degree.

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Appendices

Appendix 1

Questionnaire:

Section 1: Background Information

Who do you describe yourself?

- a. Native English Speaker
- b. Non-Native English Speaker.

Note: If you are a native English speaker, Ignore section 2 and go forward to section 3. If you are a non-native English speaker, please do the task on section 2 and section 3.

Section 2: Grammar Test

Instruction: there are 10 multiple questions below and you are asked to choose one correct answer only based on your grammar knowledge.

1. Almost everyone fails..... the driver's test on the first try
 - a. Passing
 - b. To have passed
 - c. To pass**
 - d. In passing
2. To relieve pain caused by severe burns, prevent infection, and treat for shock,..... immediate steps
 - A. Taking
 - B. To take
 - C. Taken
 - D. Take**
3. In general, by the second year of production, the price of a new piece of technology.... Significantly
 - a. Will decreased
 - b. Has decreased
 - c. Will have decreased**
 - d. Will has decreased
4. A vacuum will neither conduct heat nor....
 - a. Transmit sound waves**
 - b. Transmitting sound waves
 - c. Sound waves are transmitted
 - d. The transmission of sound waves
5. orangutans live alone
 - a. near all
 - b. almost all**
 - c. the all
 - d. the most all
6. The crime rate has begun to decline in New York City due to efforts on the part of both government and private citizens to curb...
 - a. Them**
 - b. Him
 - c. Its

- d. It
7. It is not clear how much students learn..... television classes without supervision and monitoring.
- A. For watching
- B. From watching**
- C. By watch
- D. To watch
8. Some ancient units such as the day, the foot, and the pound,..... today
- a. Are still in use**
- b. That are still in use
- c. Which are in use still
- d. Still in use
9. Canada does not require that U.S citizens obtain passports to enter the country, and.....
- a. Mexico does neither**
- b. Mexoci doesn't neither
- c. Neither Mexico does
- d. Either does Mexico.
10. While trying to build a tunnel through the blue ridge mountaints,....
- A. Coals was discovered by workmen at the construction site
- B. Workmen discovered coal at the construction site**
- C. The construction site was where coal was discovered by workmen
- D. It was the construction site where workmen discovered coal

Section 3: Discourse Completion Task Survey

Instruction: for this task, you are asked to read carefully these 8 scenarios below and imagine that you are involved in these particular situations. Write down your response/reply/answer on what the other speakers have said to you. There are no right or wrong answers.

DCT Survey

1. After having finished the dinner you had prepared for your family, your sister tells you, "*You're such a great cook.*"
What will you say to your sister?
2. Your boss comes over to your house and her/his eyes fall on your beautiful garden. She says "You've grown such lovely flowers"
What will you respond to your boss?
3. Your best friend notices that you've bought a new pair of shoes. She/he tells you, "*These look good on you and even the colours great on you.*"
What will you respond to your best friend?
4. Your boss saw your new laptop in your office and tells you, "*That's a nice laptop you've got there!*"
What will you reply to your boss?
5. Your classmate notices that you've had your hair cut. She says, "you look great in this new hair style."

What will you say to your classmate?

6. You have changed your dressing style this year. On noticing that, friend's parent tells you "this color suits you better. What will you respond to your friend's parent?

7. You have always tried to get to the class on time. One day your lecturer tells you, "*You are one of my best students because of your punctuality.*" What will you say to your lecturer?

8. Your same-aged cousin always comes to you for advice when in trouble. Once s/he tells you, "*You always give the best advice. You're great.*" What will you say to your cousin?

Appendix 2: Tran's CR Taxonomy

- a. Compliment upgrade: the complimentee agrees with and increases the complimentary force.
- b. Agreement: the complimentee agrees with the complimentary force by providing a response which is "semantically fitted to the compliment"
- c. Agreement token: the complimentee may agree with the compliment assertion with simple "yes" or "yeah".
- d. Appreciation token: the complimentee recognises the status of the other speaker's previous utterance as a compliment and shows appreciation for it.
- e. Return. The complimentee reciprocates the act of complimenting by paying back the compliment to the complimenter
- f. Explanation/ comment history. The complimentee impersonalizes the complimentary force by giving further information which may frequently be irrelevant about the object of the compliment.
- g. Reassignment. The complimentee redirects the praise offered by the complimenter to some third person or to something else
- h. Non-idiomatic response: the complimentee implies that she does not agree with the compliment assertion.
- i. Compliment downgrade: the complimentee qualifies the praise force.
- j. Disagreement: the complimentee directly disagrees with the praise force.
- k. Disagreement token. The complimentee may disagree with the compliment assertion with a simple "no"
- l. Expressing gladness: the complimentee expresses his/her gladness that the complimenter likes the object of the compliment
- m. Follow-up question: the complimentee responds to the compliment with a question which elaborates the compliment assertion
- n. Doubting. The complimentee responds to the compliment with a question which corresponds to the request for repetition and or expansion of the compliment assertion.
- o. Opting out. The complimentee responds to the compliment with mere lau

Leagility in Education: Logistics and Supply Chain Management as a Dynamic Education Paradigm

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

The terminology of ‘agile education’, ‘agile pedagogy’, ‘the agile classroom’, has gained prominence in the literature in recent times. The concept of agile education emanates from the concept of ‘organizational agility’, which has been adopted and adapted into agile shipbuilding, agile logistics and supply chain, and agile software development, which, together with the concepts of Lean Thinking, which has its basis in the Toyota Way, are now being seen in combination, termed as Leagility. We seek to apply this terminology to education. The discussion is about the applicability of Leagility in computer systems development education. The fundamental teaching and learning practices in computer systems education are practical and hands-on with theory following practice being more appropriate than practice following theory, and with theory practiced in-situ allowing the emergence of theory based on the practice in an inductive manner. This paper is a discursive discussion, based on personal experience and perceptions gained from 50 years of involvement in the tertiary education sector, both as student, and academic teacher and researcher, and concurrent or other experience as an IT/IS practitioner, to project management level. The proposal is to radically overturn the current educational model, and implement a hands-on, practical, ‘super-project’ as the primary learning vehicle, and incorporating a paradigm of continuous and formative assessment, student learning teams, teaching teams, and curriculum design and development, to overcome the perceived 7 Wastes of Education, based on the 7 Wastes of Production, from the Lean Thinking model derived from The Toyota Way of Management. (Morien, 2016a, 2016b, 2017, 2018)

Keywords: leagility, ‘agile education’, ‘agile pedagogy, education logistics, lean education, lean management.

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Introduction

The concept of agile education emanates from the concept of ‘organizational agility’, which has been adopted and adapted into agile shipbuilding (Moura & Botter, 2012)), agile logistics and supply chain (Naim & Gosling, 2011), and agile software development (Poppendieck, 2001), which, together with the concepts of Lean Thinking, which has its basis in the Toyota Way (Liker, 2004), are now being seen in combination, termed as Leagility. We seek to apply this terminology to education.

The thesis in this paper is that universities and colleges (referred to here, generally, as Higher Education Institutions, or HEIs) seem to be becoming endangered institutions, certainly in their current form, in many of the academic disciplines, and a radically different view of the Pedagogical processes is required: proposed here as a Logistics and Supply Chain Management view.

Quoting from the Thailand Nation Newspaper of 16th September, 2018 *"The president of a famous university in Japan ... "We have no illusion about our future. We may have been a top-ranked university for several decades... in the current ecosystem, past success doesn't guarantee future success. No institution is too big to fail."*. This is certainly not the only statement on the perils facing HEIs to be found in the press and the research literature. (Isaksson et al., 2013)

The solution is seen here to be a new model of HEI pedagogy that considers HEIs as competitive, commercial enterprises whose education processes are appropriately seen as being akin to logistics and supply chain processes. (Doman, 2011). The computer industry, in all its manifestations, is the example high in our minds, and the authors' experience in higher education, over the past 50 years, and in computer systems education over the past 30 years, allows us to consider this academic area as an indicative case.

Most, if not all, current Logistics and Supply Chain Management practices can be valuably applied to education: Quality Management, Quality Circles, Supplier Networks, Just-in-Time manufacturing, eradication of waste in the manufacturing processes under the heading of Lean Management, adaptability of processes under the heading of ‘organisational agility’, with these latter two approaches now being combined under the heading of ‘Leagility’. (Emiliani, 2014)

To set the scene for these proposals, a quick definition of each of these three terms is appropriate. In general terms, ‘agile’ means *“fast, quick decision making and behaviour to meet changing circumstances, implying timely decision making”*. Lean, or Lean Management, is stated as *“get the right things to the right place at the right time, the first time, while minimizing waste and being open to change”*, and, finally, ‘leagility’ is a combination of these terms, to imply *“overall efficacy, effective and efficient, behaving in an agile and lean manner”*.

Continuing this notion, we state the concept of “pedagogical agility” by applying “agility” to the definition of “pedagogical agility”: *"The capability of an HEI to rapidly change or adapt in response to changes in the market for Graduates. A high degree of pedagogical agility can help an HEI to react successfully to the emergence*

of new competitors, the development of new industry-changing technologies, or sudden shifts in overall market conditions".

Further, in the HEI situation, we define "Leanness" as developing a pedagogical value stream to eliminate all waste, including time, and to ensure the continuous and levelled delivery of a schedule of knowledge enhancement. *"A lean HEI understands knowledge value and focuses its key processes to continuously increase it. The ultimate goal is to provide perfect Knowledge to the student through a perfect value creation process that has zero waste".*

Similarly, "Leagile" is a hybrid of lean and agile systems, and a paraphrased definition, derived from <http://www.husdal.com/2009/05/28/lean-agile-leagile/>.is *"Leagile has emerged as an answer to the problem of reconciling long curriculum lead times with unpredictable demand".* These definitions of Logistics, and Supply Chain Management, drawn from the Internet, have been modified to be applicable to HEIs, particularly by referring to 'students' rather than 'customers', extending this to include future employers, students' families, and society at large as stakeholders in the education process. The "product" can be defined as being 'Knowledge', or, to give it a more 'production line' relevant identity, the product being produced by HEIs is a **Knowledge Product** constituting the entirety of the knowledge gain designed into the 'production line' activity by way of the sub-assemblies, parts and components that we refer to as **Knowledge Units**, or, in simple terms, curriculum components.

By separating the idea of a Knowledge Product as what is being produced on the HEI education production line, and not the student or graduate as the product, allows the idea of the students themselves being active production line process workers, together with their teachers and other curriculum providers and participants. It also allows the Knowledge Product to be seen as the product that is designed, and produced by a process of adding sub-assemblies and component parts, which we term Knowledge Units, at conceptual work stations, which in today's conceptualisation is essentially the subject taught in a semester.

In Isaksson (2013), the scenario now facing individual universities includes significant competition from many different sources, with courses being available from 3rd party online providers, and the Internet enabling the extensive availability of e-learning materials, the most illustrious of which are so-called Massive Open Online Courses (MOOC's) offered by prestigious universities and world-leading lecturers, online. Udey offers many and varied online courses, and it seems that this is a low-cost source of academic material, competing for enrolments, thereby being competition for traditional providers of educational material (<https://www.udemy.com/>). Our experience in selecting textbooks for subjects over 3 decades includes seeing offers by textbook publishers to provide a complete, 'canned' curriculum, requiring the teaching academic merely to set up the projector and present the slides provided. Confronted with these situations, together with the extraordinary developments and advances in computing, information technology, and communications technology, by huge organisations such as Google, Amazon, Microsoft, Tesla, and Facebook *inter alia*, one can only wonder at what HEIs can, and must, do to remain viable and relevant, even to continue to exist in anything like their current form.

Discussions published in many papers on or around this scenario seem to mostly be concerned with improving the efficiency and effectiveness of the operational and administrative processes of HEIs as they currently operate (Doman, 2011), and do not address the actual education processes; the pedagogy. In our view, HEIs must make radical changes to their academic systems, what we term here their Pedagogical Systems. New ways to source curriculum materials, new ways to present those materials to students, new ways for students to access that material and learn, and new ways to assess the learning outcomes, are required. It cannot be a mere reorganisation of current processes, but a radical change in almost every aspect.

Overall, it is suggested here that a new HEI pedagogical model is needed, and in this paper, we present such a model that defines the Pedagogical System of HEIs as a Logistics and Supply Chain Management model. To support this proposition, a new, more commercial view of education is needed.

Systems in Higher Education Institutions (HEIs)

It is suggested that there are three different but associated systems in an HEI:

1. **The HEI General Administration System**, which includes all of the general administrative functions necessary for the HEI to continue operations. These functions include HR Management, Payroll, Purchasing, Accounting, Budgeting, and so on. Clearly, these are candidates for ‘lean analysis’, and are the typical systems considered when discussing the application of lean thinking in an enterprise.
2. **The Education Support System**, which we define as including all of the administrative functions necessary for the university to accept students, enrol students, organise teaching timetables, control student enrolments in subjects, handling fee payments, recording examination results and grades, appeals against assessment, controlling graduate research and dissertation submission, and can also be seen to include the decision making processes for offering new courses and subjects, and deciding on curriculum. As essentially administrative, the Education Administration System is also clearly a candidate for ‘lean analysis’.
3. **The Pedagogical System**, which we see as including all of the processes and activities involved in designing curriculum, sourcing, developing and presenting the curriculum to the students, making learning materials available to students, the learning activities of the students, and the assessment and evaluation activities necessary to monitor student progress and to monitor the quality and success of these processes. So anything to do with Teaching, Learning and Assessment are included in the Pedagogical System.

It is this system, and all its components and activities, that we see as being of particular relevance when considering ‘agile education’ or, also terms used in the literature, ‘agile classrooms’ and ‘pedagogical agility’.

In the discussion in this paper, the possibility of applying both lean and agile principles and processes to HEIs is considered, and applications of these under the heading of ‘leagility’ are proposed. In our literature review, we identified numerous papers with titles indicating that the topic of the paper was ‘the lean paradigm in

higher education'. These 'lean' papers seem predominantly to address the General Administration System processes and the Education Administration System processes, but seem to say little about the Pedagogical System. However, there is also a plethora of papers indicating by their title that they are addressing 'the agile paradigm in education', with the keywords of 'agile education', 'the agile classroom', and even 'agile pedagogy'. These 'agile' papers are more considering the Pedagogical System, rather than the General Administration System or the Education Administration System of the HEI being discussed. As has been indicated in many papers, particularly in the logistics and supply chain management literature, 'lean' and 'agile' usually are not applied separately and in the absence of the other. Thus the derived term 'leagility'.

Considering the Pedagogical System as a Logistics and Supply Chain Management Problem

Many papers have been published on the subject of 'Leagility in Logistics and Supply Chain Management', identifying the process environment to which lean practices are best applied, and those to which agile practices are best applied. It is not too difficult, given an appropriate set of definitions appropriate to the actors in, and dimensions of, the Pedagogical System in an HEI, to define this system and its processes in terms of being a Logistics and Supply Chain Management situation.

We are aware of the classical attitude towards education, referred to in Emiliani (2004) in these terms: "*Administrators, faculty and staff* (in higher education institutions) *must avoid the trap of viewing higher education as a special case where Lean does not apply. People not encumbered* (by this view) *... accept that students are customers*". We, the current authors, have been avoiding this trap for many years, holding as we do the opinion that education in HEIs cannot be the 'ivory tower detached from the real world' style, and must provide job skills, organisational 'social' skills, problem-solving skills, know-how, as well as know-what and know-why as well as subject matter expertise. As we wrote as far back as 1994, "*It is obvious that the education of IST professionals at tertiary level must be broad. Just to teach technical and narrow skills is futile. However, there does appear to be a significant demand for specific skills in certain areas.*" (Morien & Schmidenberg, 1994).

A commercially-oriented model where students are the customers of the institution, as has been suggested in Emiliani (op.cit) is a reasonable model of education consumption. After all, as students pay to attend the institution, it can be suggested that they are paying for a service, therefore they are the customers. The provision of education is a multi-billion-dollar industry, ranking high in the importance scale of export industries. In 2017, fees alone paid by foreign students exceeded AU\$11 billion. Clearly, HEIs are commercial enterprises operating as a competitive, commercial industry.

As discussed above, we define the pedagogical process in terms of being the activities involved in the development of a Knowledge Product. Within this process, Knowledge Units are added to the evolving Knowledge Product, which is the work-in-progress. These Knowledge units are the knowledge parts and sub-assemblies being applied to the build of the Knowledge Product. By separating the students from

the Knowledge Product, we can see the student as also being a knowledge provider by virtue of their research, self-directed learning, and general realisations.

The Pedagogical System

Taking from the definitions above, this system can be defined as *“a value chain extending from secondary schools and other sources of student entrants, and includes all aspects of the development of a knowledge product sufficient to produce competent, well-educated graduates to meet the requirements of employers and other stakeholders in society”*. It includes all aspects of the processes of teaching, learning, and assessment, including curriculum design, development or sourcing of curriculum, and interfacing with the suppliers of curriculum”.

A well defined and conducted Pedagogical System maximises value to the stakeholders, particularly employers, by producing a graduate with the best set of skills and know-how and a service mind: the Knowledge Product, thereby creating a competitive advantage in the education marketplace, using information technology to advantage in the support and control the teaching, learning and assessment practices in the system, as well as the efficient and effective presentation opportunities of e-learning and other information technologies.

The ‘Graduate’ as the Product

While the graduate is the visible and obvious finished product of the Pedagogical System, it is more relevant to view the totality of the graduates knowledge gained over the course of their study to be the Product, and refer to this as the Knowledge Product. This Knowledge Product comprises a set of Knowledge Units presented to the student, which is referred to in the next paragraph.

The ‘Student’ as the Work-in-Progress Product

The student, or more particularly the student’s Knowledge Product, is the partially assembled (partially educated, partially complete) work-in-progress, moving in an orderly fashion, from Knowledge unit to Knowledge unit (perceived in this context as equivalent to moving from workstation to workstation, and having parts and sub-assemblies added in a manufacturing process), and being transformed step-by-step into the finished product; the Graduate’s Knowledge Product.

Knowledge Unit

We use the terminology of ‘knowledge unit’ as being, first, the essential ‘sub-assemblies’ or ‘parts’ being added to the Student’s Knowledge Product, and also to move away from the traditional notion of a subject which is a 16-week course in a semester with final examinations deciding whether the student has passed or failed overall (too little too late for the student to be assisted). The experience of the student in the system, together with the inclusions in the specific curriculum represented in knowledge units, gives the graduate the many essential soft skills necessary, ensuring that they are indeed well-rounded, well-educated products of the Pedagogical System of the HEI.

Knowledge, and more particularly Knowledge Units, is, are, the ‘raw material, component parts and sub-assemblies’ in the Pedagogical System processes. First, the secondary school graduates or mature-age entrants, when they enter the HEI system, bring with them knowledge, gained from their schooling. During the Pedagogical System processes, their knowledge is extended, advanced, evolved by studying further curriculum, presented to them in specific, discrete but associated ‘Knowledge Units’. This is achieved in a continuous, longitudinal, ‘production line’ process. These Knowledge Units are either produced internally or sourced externally from curriculum suppliers. As referred to above, MOOC’s that are currently available via the Internet, and courses from suppliers such as Udemy, as well as ‘canned’ courses from textbook publishers, interesting videos published on YouTube, and any teaching and learning materials published in-house, can be organised into a learning process in which they are considered as the raw materials, parts or sub-assemblies in the Pedagogical System during which the final product, the Graduate, is built..

A Knowledge Unit can be a 2-week intensive classroom or seminar situation, or an online e-learning video series, or an entire MOOC presentation, or YouTube video. This definition provides the freedom to deliver curriculum content, or knowledge, in a variety of ways, and which can be sourced from anywhere, or developed in-house. Also, by offering knowledge units online, with AnyWhere/Anytime access, students remote from the university, or just in remote locations, can access the content, thus pursuing their course in their own time, at their own location.

Quality Assurance and Quality Control

Although not specifically stated in the definitions given above, QA and QC measures and processes are applied to the evolving product (the student’s knowledge) on a regular and continuing basis by virtue of assessment and evaluation processes, which include examinations, pop-up tests, teacher reviews, peer reviews, with the production process coming to an immediate stop when the product-in-process (again, the student) fails the quality tests. As well, close scrutiny of the curriculum included in the knowledge units is an essential element of the QA and QC, in exactly the same way that materials used in the manufacturing process are tested for usability and fitness-for-purpose. Production line elements of Quality Circles, TQM etc., applicable in Logistics, are relevant here.

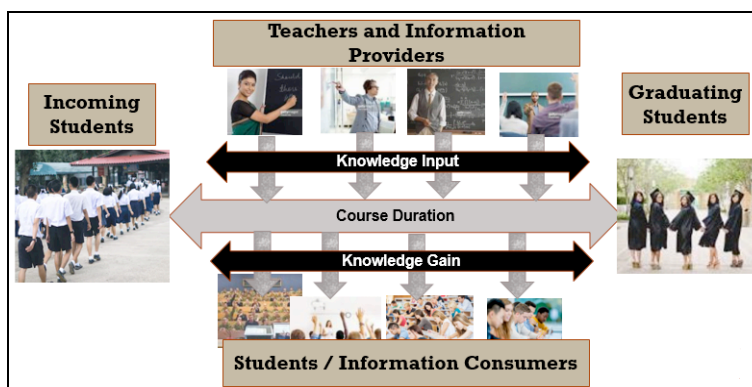


Figure 1: A View of the flow of students through the Pedagogical Production Line

In Figure 1, we see a simplistic view of the Pedagogical System, with incoming students entering the HEI, proceeding through a Course, gaining knowledge along the way, with that knowledge primarily provided by teachers and some others, to ultimately produce a graduate. However, this is hardly a nuanced picture.

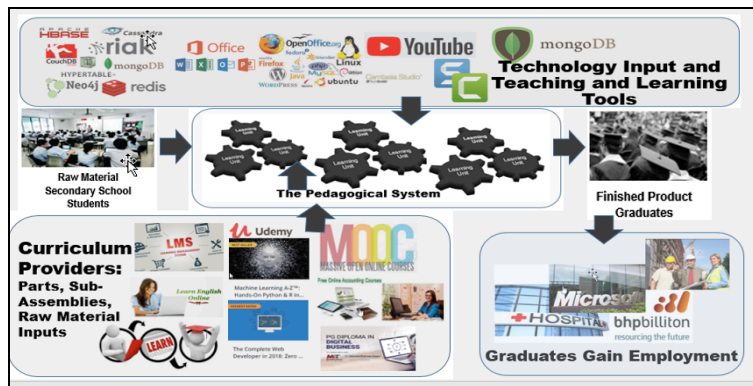


Figure 2: A representation of the Pedagogical Logistics and Supply Chain System

In Figure 2 we see a more complex representation of the Pedagogical Production Line, but still representing students as the product.

In Figure 3, the development of a Knowledge Package as it proceeds through the pedagogical production line is envisaged.

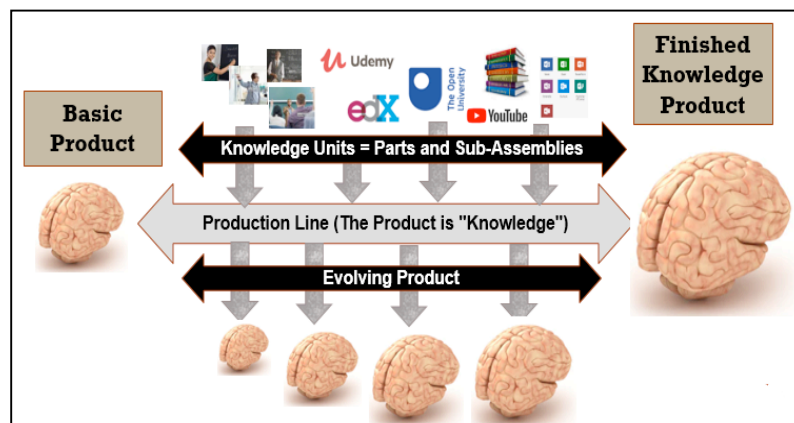


Figure 3: The “Product” of the Pedagogical System is “Knowledge”

One useful outcome of defining the product as a Knowledge Product, and not as the student or Graduate themselves, is that the students can now themselves be seen as Knowledge Providers, bringing Knowledge Units into the production line by way of self-learning, research and their own evolving ‘realisations’ and knowledge gain. Figure 4 illustrates students as participants in this manner.

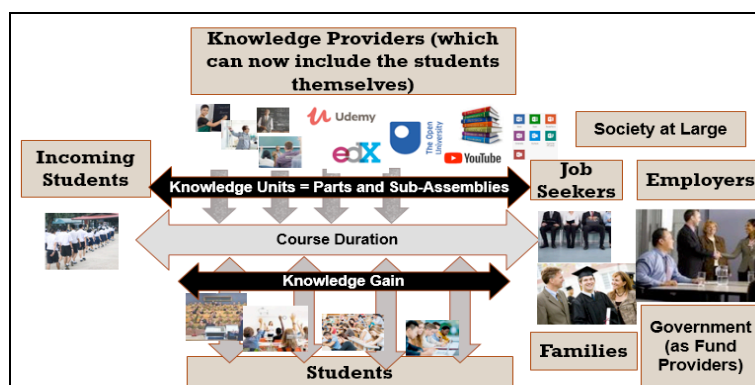


Figure 4: The Stakeholders (with Students as both Learners and Knowledge Providers)

The Seven (Now 8) Wastes of Manufacturing

We now consider Lean Thinking, as applicable to Logistics and Supply Chain Management, which we then transfer into the education environment, in the Pedagogical System.

First, elimination of waste in the processes in any organisation is the most effective way to increase the profitability of any business. Processes either add value or waste to the production of a good or service. The seven wastes originated in Japan, where waste is known as “muda.”

The 8 Wastes of Education

Various attempts have been made to redefine the 7 Wastes of Manufacturing into the education context. Various efforts have been made to transform the wastes of manufacturing into the wastes of education. Isakson et al. (2013) presents a model of the types of waste appropriate to education, Inventory is defined as “Frontloading or storing of knowledge which is supposed to be used much later”. Overproduction is stated as “(Graduates) without employment opportunities”, which in our model would be better considered under Defects.

Figure 5 is our attempt at defining the 8 Wastes of Education, It is a little different to our original model published in (Morien, 2016) which attempted to precisely match the terminology of the 8 Wastes of Manufacturing.

Type of Waste	Explanation
Overproduction	Extra and unnecessary curriculum and 'knowledge' that is not useful or useable. This may include curricula which is the specialty of a particular academic, but does not fit into the overall scheme. Also, curriculum and teaching materials that are developed in-house that could be cheaply and quickly sourced externally, i.e. produced unnecessarily, therefore consuming resources, or requiring extra, unnecessary resources.
Waiting	The 'knowledge' gained by a student, and the understanding of its relevance, must be 'kept on hold' until it is useful and useable in a subsequent part of the Pedagogical Process, which tends to be forgotten or become irrelevant with the passing of time.
Transporting	Knowledge must be carried, or transported, from one subject to another, which may or may not be consecutive in the pedagogical process, potentially resulting in that knowledge being forgotten or superseded, thereby indicating that it was a waste of time and resources to present that subject in the first place, or requiring that it be taught again, resulting in duplication of effort and resources.
Inappropriate Processing	Teaching and Learning methods that are inefficient or ineffectual. We consider classroom teaching to be an example of this, in many circumstances. The 'chalk and talk' approach to knowledge presentation is certainly seen as now being an obsolete and inappropriate process.
Inventory	Concepts, ideas, specific knowledge that must be 'stored' (i.e. remembered) until it can be used at future time, and which is often forgotten, or becomes obsolete.
Unnecessary / Excess Motion	This is envisaged as students continually moving from one subject to another, intellectually (not physically), needing to apply knowledge gained in one subject to another subject, as well as the usual situation of moving from one academic area (perhaps programming) to another often unrelated subject (perhaps statistics or analysis methodologies), thus breaking the overall coherence of the student's studies, in the short-term.
Defects	Shallow learning, forgotten subject-matter, failure to comprehend subject-matter, leading to cheating, copying, plagiarism, as well as inappropriate curriculum
Recognition of Staff	An additional 'waste' from the original seven, indicating failure to recognise and acknowledge staff abilities, accept staff suggestions, develop staff, as well as failure to introduce external consultants and experts on an ad hoc basis. In the education environment, 'staff' must include all faculty, as well as students, who are also stakeholders in the process.

Figure 5: The seven (now eight) wastes, applied to Education

The Need for a Radically Different Pedagogical Model.

The concept of viewing the Pedagogical System of an HEI as a Logistics and Supply Chain Management System, in the way that we have done here, suggests how the process can proceed, with the availability of Knowledge Units being added to the Knowledge Product, addressing the stakeholders in the system, and so on. Our further discussion is about the many and varied methods and tactics that can be utilised to successfully build the Knowledge Product: these are the Pedagogical Methods that have been proposed elsewhere in some profusion. These methods include "The Flipped Classroom", "the Agile Classroom", "Project-Based Learning" and so on. We label these the production line processes and work station activities of the production line, whereas we are considering the overall supply chain.

The fundamental problem perceived in most of those proposed methods, sometimes termed Unconventional Methods, have mostly appeared to be proposals for making the classroom situation more effective. Our proposal is to radically overturn the current educational model, remove standup classroom teaching as the primary mode of subject matter delivery, extensively utilise modern communication and other technology for the provision of curriculum; the Knowledge Units, and to seek to achieve a significantly higher standard of knowledge acquisition achievement than is currently the case.

This can be envisaged as a continuous learning stream based on a broad front of teaching and learning of particular and closely related curriculum, rather than the siloed, almost bits-and-pieces of curriculum that may or may not be immediately related and useful, and is intended often to be 'pre-requisite' learning for subjects remote in time, at soonest in the next term, and often a year hence, by which time the subject matter may well have been forgotten. One way or the other subject matter that

is immediately unrelated and not useful *in situ* does not present the same learning urgency as when it is immediately applied.

Just-in-Time Curriculum

Our suggestion as to the overall teaching and learning strategy is to base the computer systems development course (in this case) on an industry-strength project developed over the whole course. Curriculum decisions will be based on the Just-in-Time curriculum requirements for the continuing development of the project, rather than on the long-horizon, batch style curriculum development extant in HEIs.

Continuous Production: No Waiting

The “production line” scenario for students is a continuous learning stream continuing from one Knowledge Unit to the next, sometimes with Knowledge Units in parallel, sometimes in a single Knowledge Unit. The content of each Knowledge Unit will provide knowledge that is directly relevant to the next Knowledge Unit without Waiting, without On-Hand Inventory. In the “super project” approach to teaching and learning, the knowledge included in each Knowledge Unit will be immediately applied to the project, providing immediate “hands-on” reinforcement and deep learning of the knowledge. Over time, the project will be extended to introduce new knowledge, and also to continue the reinforcement of prior learning.

Quality Control and Quality Assurance: Assessment of Knowledge Gain

Continuous, longitudinal, formative assessment will confirm continuous learning success, which contributes to the students’ sense of well-being and satisfaction, and enjoyment of learning. The ever-present problem of shallow learning and forgotten information is overcome to a great extent by this approach. Assessment is a multi-dimensional process, relying on teacher assessment, peer-assessment, self-assessment, frequent testing supported by online apps, all with the intention of providing educators with continuous information on student progress to enable Just-in-Time assistance to enable student to demonstrate a level of knowledge acquisition at close to the 100% mark. Concepts of Quality Circles (The Economist, 2009, Harvard Business Review, 1985), can be applied, as can the concepts of Total Quality Management (TQM) (Goetsch & Davis, op.cit)

Minimally Sufficient Relevance

The concept of Minimal Sufficiency is best stated as “All that is necessary, but no more than is necessary”. Adding too much to a product beyond the necessary functionality may be seen as desirable, even marketable, but in many ways it is a waste. To achieve a minimally sufficient Knowledge Product, careful consideration of relevant curriculum is essential. A significant problem in course design, under the usual bureaucratic requirements of the Education Administration System, is that course designers are required to foresee and prophesy requirements 7, perhaps 8 or more years from the time that a decision is made to consider curriculum content. In the proposed approach of having an evolving “super project”, requirements can be added in a Just-in-Time manner, right up to the penultimate semester of the course, thus ensuring greater contemporary relevance. To label the current approach to curriculum, it may well be seen as a Just-in-Case approach, including curriculum that might be

relevant in 7-years' time. As well, extra curriculum which is not contemplated in the group wisdom of the curriculum designers is not taught, reducing the wastefulness of "Inappropriate Processing", "Inventory", and "Defects".

Conclusion

Careful retrospection of the experience of 50 years in the HEI environment, man-and-boy, so to speak, has lead us to the conclusion that education delivery has substantially failed to keep pace with industry advances, especially in the computer systems industry. Nor has it kept pace with educational technology, in many cases by having, so far, not taken great advantage of the marketplace for education-support software. HEIs are now essentially commercial enterprises, offering a product for sale (knowledge), in competition with other like-minded HEIs. The delivery of 'knowledge' to students, with the ultimate result of producing a graduate as the final product, has been envisioned as a Logistics and Supply Chain Management problem, that can be made more efficient and effective, therefore more competitive in the HEI industry, by Lean and Agile processes which, together and appropriately applied, are now being termed Leagility. As an essential uptake in manufacturing Logistics and Supply Chain Management, the Internet, the communication capability enabled by that, the communication software and technology now readily available, the education support software of Learning Management Systems etc., are also drivers for a new-look Pedagogical System based on Logistics and Supply Chain Management concepts, practices and processes.

The proposed 'production line' of Knowledge Product, as partially completed, work-in-progress product, can therefore be designed to be dynamic, quick to grasp new opportunities (which in some cases means fast changing curriculum to meet the dynamic changes in industry), ensuring a quality Knowledge Product.

All of the Wastes of Education can be overcome, or at the very least mitigated, by having a lean and agile Pedagogical System, with substantial hands-on skills acquisition, together with soft skills of teamwork, creativity, problem-solving and the development of a service mind.

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***Rural Education in China in the Process of Urbanization:
Development and Reflection***

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

With the acceleration of urbanization, although the government has vigorously promoted the balanced development of rural and urban compulsory education, the trend of small-scale development of rural education has become increasingly prominent. The family economic conditions of education receivers show the problem of education equity behind the small-scale development of rural education. Despite the government's great efforts to revitalize rural education, rural schools are not prepared to deal with the problem of small-scale development of rural education, and have not made adjustments and changes that are compatible with it. To revitalize rural education, reconstruct the roles and responsibilities of rural teachers and build education capacity of rural schools, the government not only needs to re-understand and position the development of rural education, to change the system of rural school, but also needs to change rural teachers' educational concepts, educational methods and techniques, to reconstruct the roles and responsibilities of rural teachers, to effectively improve educational capacity of rural schools.

Keywords: Rural Education, Small Scale, Education Equity, the Orientation of Development

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Introduction

The Ministry of Education of the People's Republic of China divides the objects of educational statistics into urban areas, towns and rural areas. Rural education means the existence of non-urbanized education. In the context of urbanization, it can be found that rural education means a kind of non-centralized marginalization⁵. The main issues to be discussed in this paper are: the marginalization of rural education and its main performance, the trend of change rural education presents from the perspective of historical development; the hidden problems behind the small scale of rural schools and the rooted cause; the ways of effectively developing rural education from a given condition. In terms of research methods, the paper uses a combination of empirical analysis and theoretical research to analyze the statistical data of the Ministry of Education of the People's Republic of China and that of Education Department in Anhui province in the past 10 years, introducing the development trend of rural education; a case study of a township school in W City, Anhui Province, reveals the problems facing small schools in rural areas. The last part puts forward the policy recommendations for the development of rural education to seek the way to the future development of rural education.

一、 Declining Rural Education and its Hidden Concerns

Before 1980, rural students accounted for 80-90%. With the popularization of compulsory education, in rural schools, whether in primary schools or in junior high schools, the number of students is in full scale. Especially with the development of urbanization, the number of students in rural schools has begun to decrease. By 2000, rural students accounted for 50-60%. Along with the reduction of its number, there is the adjustment of the layout of urban and rural schools. Since 2001, the large-scale withdrawal of primary and secondary schools below the county level has been carried out. The main reasons are the declining birth rate, the decreasing of the number of school-age children, the rapid development of urbanization, the increasing demand for the enrollment in urban schools, the slowdown of the development of rural education, the low investment for education for a long time, the seriously lacking of the funds for running schools in rural areas, the poor conditions for running rural schools, weak teacher resources in rural schools, the widening gap of education quality between urban and rural schools. The adjustment of the distribution and layout of schools in urban and rural areas lasted for more than 10 years, indirectly indicating that the government is in the pursuit of efficiency because of the reduction of the number of students in rural schools. In the process of adjustment, the gap in the quality of compulsory education between urban and rural areas has also widened. The adjustment of more than 10 years has led to a further decline in the number of students in rural schools. In 2017, the number of students enrolled in primary schools was 2,773,600, accounting for 27.50% of the national primary school students; junior high school students in rural areas were 6,643,100, accounting for 14.48% of the national junior high school students. The number of students in rural schools only accounts for 23.52%.²On the one hand, the urbanization rate of education is high; on the other hand, the number of rural schools is huge. According to the statistics from Ministry of Education, in 2017, there were 201522 schools, including kindergartens, primary and secondary schools in rural areas. Most rural primary and secondary schools、 kindergartens present the trend of small classes, and student-teacher ratio in

many areas dropped to 4:1 or 5:1. Among these schools, small schools are becoming a common phenomenon in rural society. “In the end of 2017, there were 107,000 rural schools with small scale, including 27,000 primary schools and 80,000 teaching spots, accounting for 44.4% of the total number of rural primary schools and teaching spots; there were 3.847 million students, 5.8% of the total number of students in rural primary schools, and 9.346 million boarding students in rural primary schools, 14.1% of the total number of students in rural primary schools.”⁸

In the past ten years, in Anhui Province, a province with a relatively low urbanization rate in the central part of China, the number of students in rural areas has also declined year by year. The following picture shows the number of teachers and students in urban and rural areas since 2009.

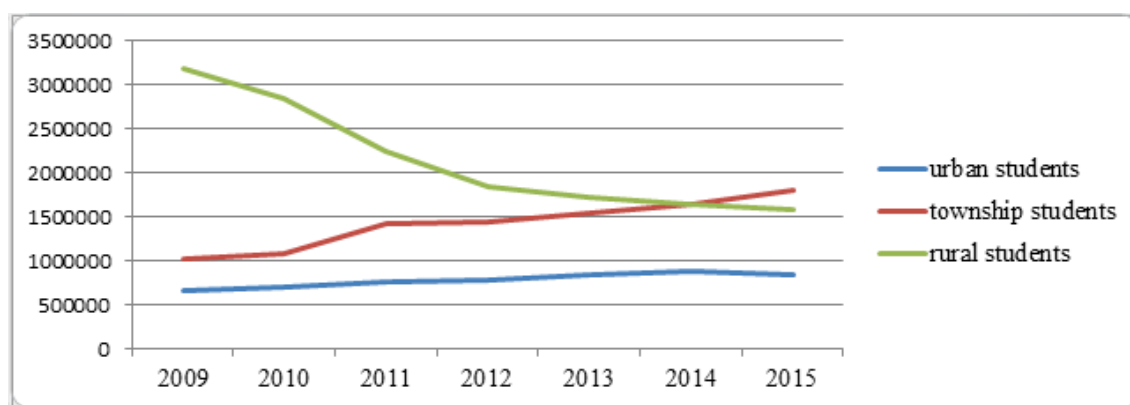


Figure 1: the number of students in primary schools at different levels

The development trend of small-scale rural education can be seen more clearly from the micro-social perspective. Take Erba Town in Jiujiang District, Wuhu City for example. According to the “Guiding Opinions on Comprehensively Strengthening the Construction of Small Schools and Township Boarding Schools in Rural Areas” issued by the General Office of the State Council, in terms of the definition of small schools with less than 100 students, there are 12 primary schools in the town, including 7 small schools and 2 schools with an excessive number of students. The following table is for details:

Schools	The Number of Students	The Number of classes	The number of Teachers	Notes
XL School	130	6	11	
EB Primary School	712	14	40	excessive class size
HS Primary School	229	6	16	
LQ Primary School	207	6	12	
MN Primary School	71	6	12	
TH Primary School	99	6	12	
DW Primary School	90	6	11	
YN Primary School	650	13	34	excessive class size
YQ Primary School	147	6	11	
JS Primary School	74	6	11	
LT Primary School	100	6	10	
FS Primary School	41	6	9	
The Total	2543	87	191	

Take MN primary school and LQ primary school for example. Both are complete schools from first to sixth grade with principals and directors for teaching affairs. LQ primary school is a relatively large school with 207 students and has better education quality in rural areas, so that people in the town have great confidence in this school. The principal of LQ primary school graduated from a normal university with a master's degree and majored in the arts. The most of 12 teachers in total are young and they have great enthusiasm in teaching and work. Though there are only more than 200 students, the school conditions are up to the standards set by the Ministry of Education. The school's hardware facilities and functional classrooms are all set up, Each teacher owns one computer, which can hook up to the internet and can meet the requirements of educational informationization and technical teaching. Two of the teachers participate in the teacher studio in the city and it works well.

MH primary school is a small school. The official statistics show that there are 71 students, but the principal said there are only 47 students. The fourth grade with the fewest students has only 4 students. Under the circumstances, students in the third and fourth grade usually have such lessons as sports, music, fine arts, information technology education together. Those who have lessons together are just more than 10 students. The largest class is the first grade with 15 students. The government is carrying out the project of shantytown rebuilding, so one of the reasons for the loss of students is family relocation. Due to the proximity to the central school, many parents expect their children to attend the central school. As for the current trend of development, MN primary school is planned to be integrated into the central school.

Though the school is small, the school conditions are also basically up to the standards. Although the fact is that the number of students in this school is less than 100, the government allocates the public funds on the basis of 100 students to the school, which is able to meet its public needs.

The issue of education equity lies behind the small-scale rural education. For people in rural areas, the flow of rural schools means making a choice, and the process of making a choice is also the process of stratification based on family economic conditions in rural society. Urbanization, on the one hand, is the integration of resources and information, which means the market plays a decisive role in resource distribution; on the other hand, it is the process of people's differentiation and the reconstruction of people's identities. Those in poverty-stricken areas have to stay in rural areas for economic reasons and have to study in rural schools, forming a dual left-behind identity—left-behind children and left-behind students. The studies have shown that students in a small school often come from poor families. They are mainly the children of the disadvantaged people—20% of people with the lower social status, who are in deep poverty and unable to attend school in a city, and obviously they are the core target group of stopping the intergenerational transmission of poverty.⁹Poor people in rural areas do everything in their power to let their children receive quality education by enrolling into central schools or other complete schools.

As a result, small schools in rural areas are often composed of “teach-badly” teachers and “difficult-to-teach” students. In order to mobilize the enthusiasm of teachers, the government makes changes in a qualification-based post employment system by implementing the policy of “job rotation”. Excellent teachers are firstly employed by urban schools and the rest of teachers can only work in remote areas or teaching spots. These rural teachers are often not well qualified for education because of their poor work ability or bad work attitude. At the same time, children in poor families are confronted with many problems for the lack of family education. In short, since the adjustment of the layout of rural schools, “the poor groups are even more incapable of responding to changes in school's position, and in the process they are further excluded and squeezed...At this point, the policy of ‘school closures and mergers’ does not promote education equity, but brings about new form of education unfairness.”⁶ Even in the context of the government's efforts to promote the balanced development of urban and rural education, this situation has not been reversed fundamentally.

二、 The Analysis of the Problems Facing the Development of Rural Education

In the new century, the increasingly widening gap between urban and rural compulsory education has caused widespread social concerns, and urges the government to push forward the balanced development of compulsory education in urban and rural areas. The balanced development of compulsory education sets the basic goal that the conditions of school operation shall conform to the standards of schools above the county level and the standards of the state on running schools. In 2012, the State Council issued the “opinions of the State Council on Further Promoting the Balanced Development of Compulsory Education”. The Ministry of Education subsequently issued “Interim Measures for the Supervision and Evaluation of Balanced Development of County Compulsory Education (2012)”, on which the

evaluation of the balanced development of compulsory education at the county level is based. In 2016, “Several Opinions on Coordinating and Promoting the Integrated Reform and Development of Urban and Rural Compulsory Education in Country Area” was issued by the State Council. In 2017, Ministry of Education issued “Measures for the Supervision and Evaluation of the High Quality and Balanced Development of County Compulsory Education”. For the balanced development of urban and rural education, the goal set by the government is that “within the county area, the school construction standards are unified; the standards of budgeted posts management are unified; the basic standards on the average public-use operating funds for students of schools shall be unified; the standards of basic equipment allocation are unified and the policy of ‘two exemptions and one subsidy’ (the exemption of book fees and other miscellaneous fees; provide financial aids to needy students) covers all areas, basically realizing ‘the balanced development of compulsory education and the equalization of basic public education services in urban and rural areas’”.⁷ It is worth noting that though the efforts of the governments at all levels the development trend of small-scale rural education has not been controlled. The problem reflected should be considered.

(一) Structural Problems in the Development of Rural Education

The contradictory relationship between the balanced development and the imbalanced structure is the reflection of urban-rural social structure in China. Therefore, to understand the imbalanced development of urban and rural education, the understanding of urban-rural social structure is needed. The structure of rural education is closely related to that of rural society. So far, the government’s policies on balanced education haven’t touched this area. Its political structure, economic structure, family structure and population structure in rural areas have a high degree of meshing and isomorphic relationship with rural education. Counties, towns and villages are not only the political structure of Chinese rural society, but also highly reflect the level of economic development and educational forms in rural areas. Correspondingly, they also indicate the hierarchical relationship between families, which generally presents a pattern of wealthier rural families, ordinary rural families, poor families at the bottom of the line. The class relationship presented by rural society and families is a reflection of political structure and economic structure in rural areas, and it shows, in terms of education, the corresponding choice of rural schools. Clearly can be seen the pattern: town—administrative village—natural village(village politics); well-off family—poor family(village economy); central primary school (town)—rural complete school(administrative village)—teaching spot(natural village). The system, central primary school(in a town)—complete school(primary school in a village)—teaching spot, is not only consistent with the political system of rural society, but also reflects the economic gradient radiation of rural society and the natural distribution of the population.

The structural problems of the development of rural education are also revealed in the structural relationship between school education and family education in rural areas. The parents of these left-behind children are usually migrant workers, so the responsibility for raising children is given to the previous generation and schools. Going out and staying behind, survival and education constitute the structural contradiction of family education in rural areas. Due to the lack of parental

management and restraint, left-behind children often fall into a “let it be” situation. These “difficult-to-teach” students in small schools profoundly reflect the structural problems of home-school.

(二) Resource Issues in the Balanced Development of Urban and Rural Education

Anthony Giddens pointed out that “‘structure’ refers not only to rules implicated in the production and reproduction of social system but also to resources.” “It’s always the case that the day-to-day activity of social actors draws upon and reproduces structural features of wider social systems.”¹ Although the government is eliminating the institutional roots of urban-rural duality, the allocation of resources is not just the government’s ability to dominate. The market plays an important role in it. So far, in the policies and researches on the development of rural education, the importance of resource problems in the development of rural education has been keenly noticed. Both the policy formulation and the research hypothesis focus on the core issue of resources, and all particularly stresses that a balanced allocation of educational resources is achieved through the government’s increasing financial input to rural education. However the composition of resources in reality is complicated.

Resources related to the development of rural education can be divided into different subjects. At least, the concept of resources related to education is analyzed from three subjects. Firstly, in the sense of the school as a subject taking charge of education, educational resources are mainly related to funds, teachers, facilities and so on; secondly, in the sense of the composition of education, educational resources are educators, education receivers and intermediary resources that link both of them, including educational concept, technique, method, content, media and so on; thirdly, as educational resources that can be possessed by education receivers, they are usually the combination of the above two. Different types of educational resources have their own specific ways and means of circulation. Meanwhile, they are dominated and restricted by different mechanisms. Generally speaking, the resources for running a school are mainly based on government allocation and supplemented by market mechanisms; as the constituent elements of education, resources are dominantly allocated by the government in urban areas, while they are mainly market-oriented in rural areas. Especially for the sources, students, self-selection has become the main means of mobility. Resources enjoyed by education receivers are the result of a long-term accumulation. Once they form, it will be solidified into a certain brand and become the object of pursuit. Under the control of the conventional view of quality education or people’s practical awareness formed by the systematical structure of education and the structure of society, the specific educational actions are decided, including the actions of selecting a school, the actions involved in education, the actions of school management and teaching and so on. Also the flow of resources for educational constituent elements is determined. Among these resources, students serve as the important educational resources, and their mobility and the direction of the mobility directly affect whether government investment in resources can be effectively converted into output. This is mainly because in terms of improving the quality of education, students are important participants in educational activities. When students as main participants directly influence the quality of education, the flow of students will form the “Matthew effect”, which can in turn exert great influence on students’ and parents’ actions of choosing a school.

Nevertheless, on the basis of a balanced allocation of the resources for running a school, the balanced development of urban-rural education cannot control the flow of the resources for educational constituent elements. A peculiar contradiction in the current development of rural schools emerges. On the one hand, the government has continuously injected resources for running rural schools, from funds, management philosophy to new technologies and methods; the important resources of educational constituent elements — students, as education receivers, and (or) teachers — continuously outflow. On the other hand, the conditions for running schools in rural areas have been improved; the scale of rural schools is shrinking.

(三) Reform Rural Education with the Experience of the Development of Urban Education

Another problem facing the development of rural education is the trend of urbanization in rural education. Rural education is developed and reformed with reference to the development of urban education. Some researchers point out that “urban-oriented education has brought rural education into a difficult position.”⁴ For China’s education reform, all kinds of new educational concepts are gradually introduced on the basis of the exploration and practice of urban education, and then penetrate into rural schools. To transform a new concept into specific daily teaching actions, the tool of the policy is used to achieve it. This tool for putting these educational concepts into practice is used on the basis of the conclusion of educational practice in urban schools and the analysis of problems facing urban education. In this way, it is conducive to solving the problems of urban education. For example, the implementation of the burden reduction policy in rural schools has had a tremendous negative impact on rural education. Students in rural schools are out of school too early in the afternoon, causing much time wasted, which is a problem that is basically ignored. However, it is impossible to urbanize all rural schools. Unrealistically improving rural education by following the standards of urban education will certainly bring about an educational form that is superficial and has no substantive content.

(四) The Lack of Local Knowledge in Rural Education

The fundamental problem of rural education is the development of children. To solve the problem of children in rural areas, it is necessary for teachers to have universal knowledge of education and psychology, and to have the unique knowledge of understanding children. However, in teachers’ training, great care was taken to implant in teachers not the knowledge of how to understand these children, but the elite’s educational ideals, the romantic educational views, the model and experience of urban education, the state’s will and intention of educational reform. The problems facing children are obviously different. Educational methods and tools that can solve the problems of children in urban areas may be ineffective for children in rural areas. Rural teachers usually lack the knowledge of how to solve those unique problems facing children. For rural education, especially for students in small schools, the most pressing problem is how to make them meet the basic educational requirements of compulsory education, academic work and morality included.

三、 Conclusion: The Future Development and the Orientation of Rural Education

In 2018, according to “Guiding Opinions of the General Office of the State Council on Comprehensively Strengthening the Construction of Small Schools and Township Boarding Schools in Rural Areas”, “the overall layout of small schools, township boarding schools and rural primary schools should be coordinated.” “In a village with a relatively concentrated population and sufficient numbers of students or in conjunction with an adjacent village, a complete primary school shall be set up; in a remote area with a shortage of students, a small school with a lower grader in the village and in the township, a central boarding school are set up, meeting the needs of students.” “For small schools, the informationization, facilities of sports, music and art, as well as teaching equipment, libraries and necessary functional rooms are all ensured, and living and health conditions are improved.” Although the central government makes a formal request for rural education, particularly for the construction of small schools and boarding schools in rural areas, it is not enough to rely solely on the government’s financial investment in rural education.

(一) Re-understand and Re-position the development of rural education

Different from students in urban areas, the social status of students’ families in rural areas is usually at the bottom of society, especially those in small schools. The educational status of these students and the level of education associate with stopping intergeneration transmission of poverty. That is to say, if these students are not able to receive quality education, it may lead to intergeneration transmission of poverty. Therefore, running small schools means a lot for achieving the fairness of whole society. The reason why the scale of rural schools becomes so small is precisely the result of the choice of people with the background of low quality of education in rural areas. The key is to clarify the development orientation of rural schools, and to continue to increase investment in rural education, to ensure that rural schools not only meet the national standards and requirements, but also these schools are “small and beautiful”, “qualified”.

(二) Reform the System of Rural Education

As for the system of rural schools, the hierarchical system— “central primary school at the town level—complete primary school at the village level—teaching spot”, is reconstructed into the single flat one. Instead of setting up different schools at or below the town level, schools should be set up with the town as the unit. The original rural school system is the one with an individual school as the unit. Each school is self-contained. Though entrusted by the administrative department of education, the central school has the responsibilities of teaching, making researches and other tasks for the complete primary school at the village level, such tasks as the management of budgeted posts and the average expenditure on per enrolled students, daily management of school education all attribute to different schools. Even a school is small-scale and self-contained with the loose affiliation with the central primary school. It has caused the school to fall into a more random and non-normative state of loose management, and also led to the lack of rural teachers’ self-development motivation. The establishment of a single, flat school system means that the division of functions of schools at different levels. A complete school and a small school at the

village level are responsible for the organization and management of school teaching activities, while such tasks as personnel power, the right to handle matters, financial authority are handed over to a central school, which realizes the integration of running township central schools and running township small schools with the same size, the cooperative development and the comprehensive evaluation. The principal responsibility system is adopted. Meanwhile, for a central school and a small school, school curriculum, teaching arrangements, teaching and research activities and teacher management are unified, and teachers' collective teaching and research preparations are promoted. In addition, the arrangement of classes is coordinated and teachers in music, sports, art and foreign languages can move to different teaching jobs among different schools.

(三) Reconstruct the Roles and Responsibilities of Rural Teachers

In terms of the concept of rural schools' development, the long-standing, deeply rooted view of educational quality and school development shall be changed. It is needed to re-understand the concept of teaching and learning and to change the role of teachers from people simply transferring knowledge to instructors. Dominated by the traditional concept of education, particularly the concept of "test-oriented education", small schools in rural areas still follow the pattern of the division of labor among urban teachers. As the result of each teacher teaching only one subject or a limited number of courses, the subject of teachers' work is not students, but courses. The problem lies in the fact that education is multifaceted and the division of work often doesn't cover all aspects of education. The growth and development of students is the result of the joint efforts taken by many educations and by many teachers. For this reason, a moderate division of work is necessary, but it is not unique. In the development of rural education, it is necessary to break the division of work and to regard the solutions to students' problems as teachers' responsibilities and tasks. Only in this way can schools truly realize "individualized teaching and targeted counseling." The situation that there are limited teachers and students with the division of work attaches great importance on the strength and power of the education team. It is an organizational change within a school that echoes the changes in the school system. Without such a change, the system of rural school reform will lose its support and guarantee.

(四) Vigorously Improve the Educational Capacity of Rural Schools

The issue of rural education development is fundamentally the problem of its education ability, especially the problem of individualized teaching and targeted counseling. It is the problem of "we need to know what we should do for children and what can be distinguished for them".³ Rural education requires personalized instruction and targeted guidance. Things have pros and cons. Without proper guidance, children whose minds are immature are extremely vulnerable to negative things that may contaminate children and damage their characters. Once adverse consequences are produced, the power of education is weak and cannot integrate positive educational power. Therefore, in Recommendation No.8 concerning the organization of rural education, the International Bureau of Education adopts the recommendation that teachers shall "adapt their curricula to local conditions and, in particularly, to draw their 'centers of interest' from the environment in which pupils live".¹⁰ This is the place where rural teachers' abilities are lacking and it is also the

key to improving the educational capacity of rural schools in the future.

Acknowledgements

First of all, I would like to thank Professor Zheng Tianhui from Zheng Zhou University for providing help and support. Especially in the absence of a moderator, he hosted the conference and acted as an interpreter.

Secondly, I would like to thank Professor Zhu Jiacun from Anhui Normal University for his comments and suggestions.

Lastly, I would like to thank Dr. Wang Luxi for his support.

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***Finding Opportunities Within a Conventional Curriculum to Provide Research
Experience to Undergraduate Biology Students:
A Collaborative Effort with Teachers***

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

In the past decade, undergraduate courses in Biotechnology and Microbiology in Indian universities have emerged as popular choices among students for their potential for aiding placement into industry and research laboratories. The laboratory curriculum for these disciplines includes an impressive list of experiments; however, they are conducted piecemeal, often by several different lecturers generally focussed on their own narrow topic. The laboratory course thus lacks coherence. Moreover, the laboratory routines largely follow ‘cookbook’ protocols that emphasise mechanistic aspects, offering negligible scope for building science process skills among students. In an attempt to address these issues, we conducted a workshop to provide a common meeting ground for college teachers to discuss their challenges and to work together to create course embedded research experiences for their undergraduate students. They collaboratively designed simple research problems that integrated individual activities and could scaffold science process skills. Forty five teachers from 23 different colleges affiliated to Mumbai University (and thus following a common curriculum), worked in groups and came up with problems that could engage students in small research projects. They found opportunities within the defined conventional curriculum by either converting the existing experiments into investigative exercises or by clubbing the experiments horizontally (within a semester) or vertically (across the semesters). This exercise not only resulted in useful resource generation but also led to the creation of a community of teachers with the shared objective of improving the teaching-learning process within the constraints of the prescribed curriculum.

Keywords: undergraduate biology, workshop, curriculum based undergraduate research experience (CURE)

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Introduction

In the last decade, several reports have highlighted the inadequacies of science education at the tertiary level in India. These reports have concomitantly cited deficiencies in the curriculum design, ill preparedness of the teachers and lack of infrastructure as primary reasons for the poor standards of science degree graduates in the country (Mashelkar, 2005; Varghese, 2006; Balaram, 2010; Nityananda, 2017). It has been especially noted that typical curricula for undergraduate science courses are didactic in nature and do not include any component of research (Balaram, 2010; Phadnis and Pandit, 2011; Nityananda, 2017; Sawant et al., 2018). It has also been reported that practical sessions only serve to involve students in reproducing known results by following “cookbook” protocols (Sawant et al., 2018). The students are exposed to academic research only during post graduate courses (Master’s or doctoral degree) which are offered by Universities where the faculty is actively involved in research activities. On the other hand, the faculty at the undergraduate degree colleges is primarily limited to teaching activities with little or no involvement in research. The undergraduate degree colleges are independent institutions which are affiliated to a University but may not be situated in its campus; the teachers and students thus have little access to research facilities. All affiliated colleges follow a common syllabus, mandated by the University, and the students undertake common semester wise assessments, also conducted by the University. These undergraduate degree colleges have evolved both functionally and infrastructure-wise to primarily support teaching activities and generally do not provide for carrying out research activities. A few undergraduate students, mostly self driven, are able to gain exposure to research following the apprenticeship model, wherein individual faculty members, mostly in the Universities, supervise the work of one or several students during summer or winter breaks. Apprenticeships can be beneficial, yet their one-on-one design inherently limits the number of students who can participate in it (National Research Council [NRC], 2010; Locks and Gregerman, 2008).

Currently, in India, there are around a thousand, universities (both public and private) with a total of 39050 undergraduate degree colleges affiliated to them. Every year around 5 million students pass out from these degree colleges but less than 20% of them choose to pursue a postgraduate degree (All India Survey on Higher Education [AISHE], 2017; Nityananda, 2017). It has been established that engaging science students early in research has a positive impact on their conceptual understanding and encourages them to pursue a career in the STEM disciplines (Hathaway et al., 2002). It has also been postulated that involvement of undergraduate students in research increases their self efficacy and creates a greater awareness among them regarding their own learning (Osborne et al., 2003; Allum et al., 2008). Recent discipline-based education studies have proposed course-based approaches for exposing more number of undergraduate students to research. Course-based undergraduate research experience (CUREs) labs have been proposed as an alternative to apprenticeship model: The model involves the entire class in authentic research activity embedded in their curriculum. This approach can be a more effective and accessible starting point for many students (Auchincloss et al., 2014; Bangera and Brownell, 2014). The focus of CURE labs is to enhance science process skills among students by involving a large number of undergraduate students, in a collaborative manner, in research. This model suggests that the laboratory curriculum be based upon research problems to allow students to be engaged in research projects during the college hours. We believe

that this model with some modifications could be suitably adapted in the Indian context where large enrolments in undergraduate courses is common. In this regard we examined the laboratory curriculum of undergraduate courses in Microbiology and Biotechnology, offered by several colleges affiliated to Mumbai University, India. It was noticed that even though the syllabus for introductory laboratory component in undergraduate biology courses entails impressive lists of standard experiments, there is a lack of coherence in the laboratory course. Each experiment is designed as a standalone activity, disconnected with others. Further, to gauge the current laboratory practices followed in degree colleges, we conducted an online survey with college teachers, involved in teaching Biotechnology or Microbiology courses. It was found that students are not involved in planning or preparation of the experiments carried out in their colleges and follow standard laboratory protocols as suggested in the common laboratory journal shared by the University. Moreover, the laboratory sessions are often conducted by several instructors who do not collaborate amongst each other and are concerned with only the part of the syllabus which they execute in the laboratory. The teachers reported that the syllabus was overloaded and several experiments were done as only demonstrations due to lack of infrastructure. A lack of institutional support for introducing changes in the curriculum was also noted, although, a change in the order of practicals within a semester was permissible. We also interacted with some teachers and found that most of them had a limited experience of research themselves, hence were ill prepared to design research projects for their students. Based on our earlier study (Sawant et al., 2018), interactions with the teachers and the survey questionnaire, a SWOT analysis was done to pinpoint the strengths and weaknesses of the current system (Figure 1).

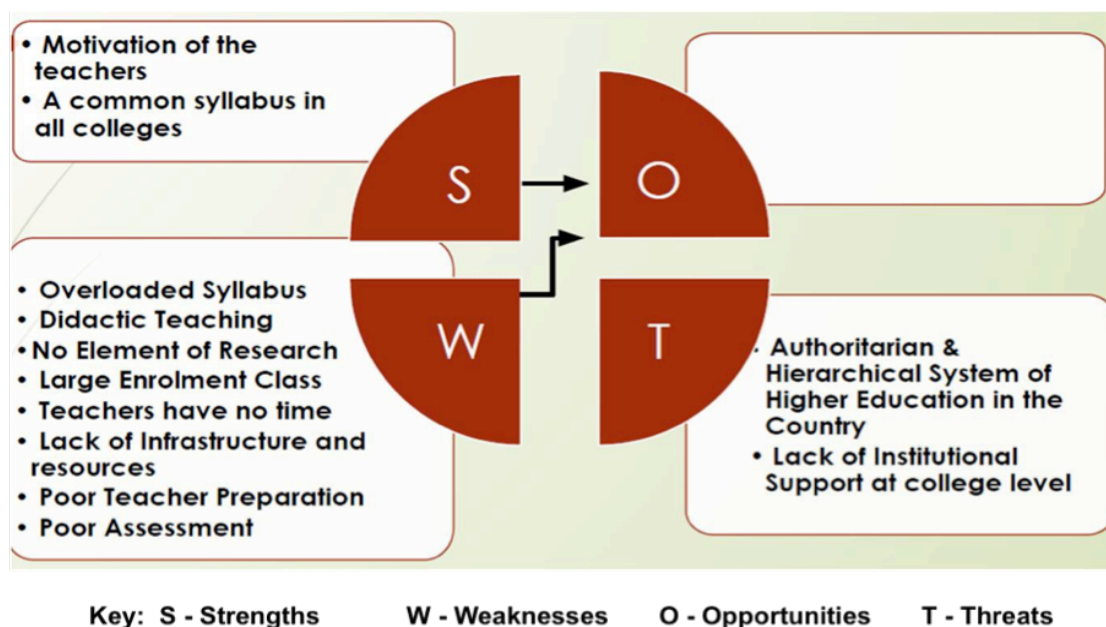


Figure 1: SWOT analysis

The responses to the questionnaire helped the researchers in identifying aspects that needed to be addressed and design a workshop for the college teachers. The analysis of the curriculum revealed that individual experiments could be clubbed as steps for solving research problems by making small changes in executing the practical

sessions and making use of large numbers of student enrolment in the class. Therefore a two-day hands-on workshop was conducted with the college teachers to serve as a common meeting ground for teachers and encourage them to provide research experiences to their students by discussing their challenges and working together to seek solutions. The challenge for the teachers and researchers was to convert weaknesses into opportunities by innovating within the constraints of a conventional curriculum.

Workshop

Participants

The workshop was attended by 45 teachers, from 23 different colleges in and around Mumbai, teaching Microbiology or Biotechnology courses at the tertiary level. All colleges were affiliated to Mumbai University and thus followed a common curriculum. The teaching experience of these teachers ranged from less than 6 months to 34 years and they volunteered to participate in the workshop. Details of the participants are given in Table 1.

Table 1: Participant Details

Number of participants	Gender		Courses taught	
	Male	Female	Microbiology	Biotechnology
	6	39	20	25

In the online survey that we conducted earlier, a major fraction of teachers reported that their motivation to participate in the workshop was their interest in the role of integrating concepts in the laboratory and to gain insights on enhancement of student learning (Figure 2). Another notable fraction of teachers reported that the workshop was an opportunity for them to reflect on their teaching practices. A smaller fraction of teachers reported professional recognition and an opportunity to be involved in something other than routine duties as their motivation for participation. We believe that the motivation of teachers to improve students' learning was a strength for this task.

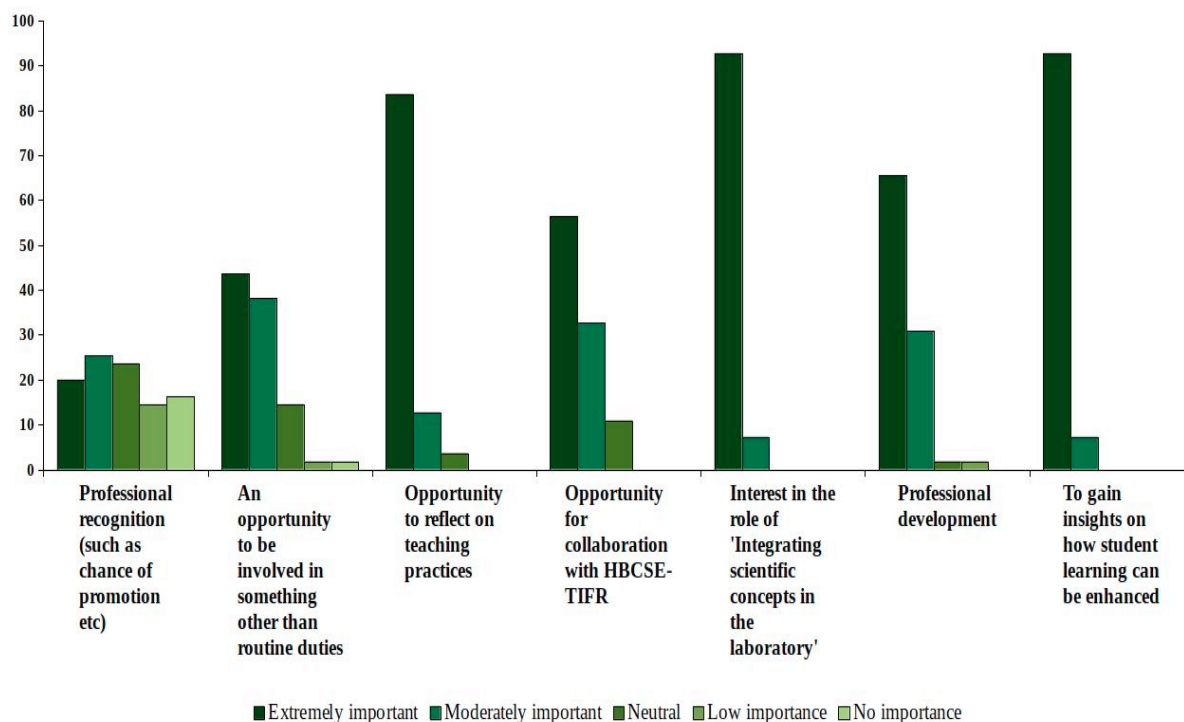


Figure 2: Teachers' reports of their motivation for participating in the workshop

Planning and Preparation

Five experienced teachers from four different colleges of Mumbai helped the research team in designing and planning of the workshop. These teachers were well-versed with the undergraduate biology course curricula and also had some research experiences. They could, thus, provide useful insights on designing practicable research projects in the college environment with its set of challenges for teachers. The resource persons worked closely with the research team to design the hands-on sessions of the workshop as well. As part of resource preparation for the workshop, the syllabi of all the three years of the Biotechnology and Microbiology courses as prescribed by the University was retrieved from its official website. The theory as well as laboratory syllabus were carefully analyzed and the experiments prescribed in the laboratory syllabus were divided into appropriate subject verticals, for example - immunoelectrophoresis was included under the subject head of *Immunology*, restriction digestion was included under the subject head of *Molecular Biology*, and so on. Also, the semesters in which the experiments were prescribed to be carried out were noted. This division of the experiments was done to aid the participants in the subsequent tasks of the workshop; to design problems of their own by clubbing of experiments horizontally (within a semester) or vertically (across the semesters). The aims of the experiments were organized on index cards (size 15 cms x 21 cms) that were colour-coded to represent each of the six semesters of the three-year degree course. A description of the designed cards along with their colour codes is given in Figure 3. Sets of these colour-coded cards were made and provided to the participants for the tasks of the workshop.

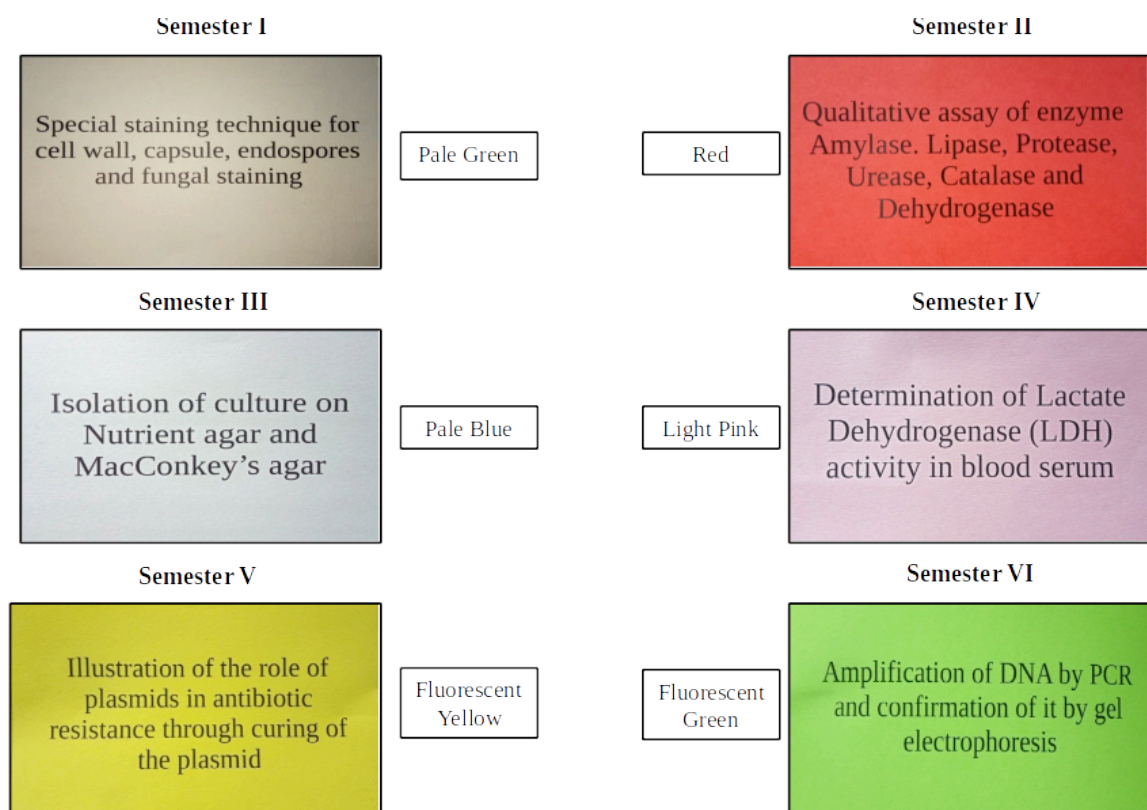


Figure 3: Cards with their colour codes designed for the workshop

Workshop Details

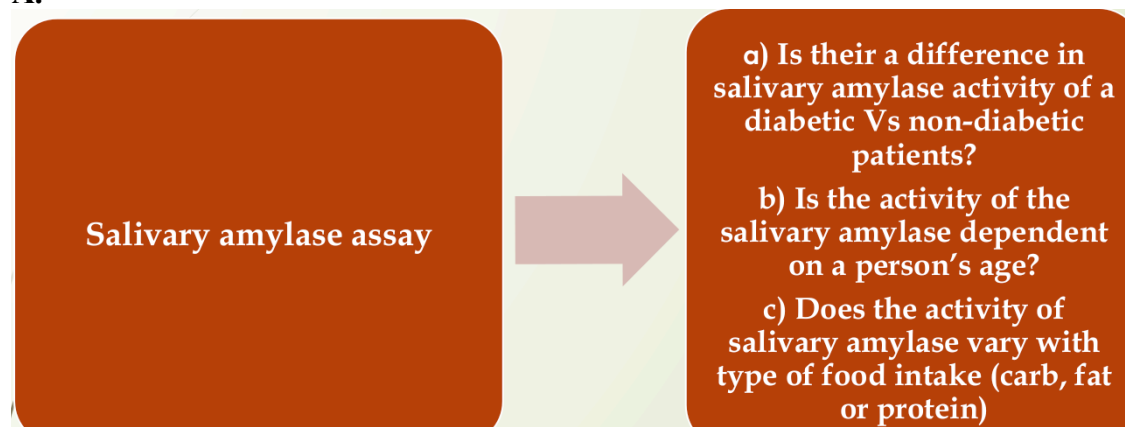
The teachers were divided randomly into six groups of 6-7 participants each, as per the requirements of the tasks/ activities designed for the workshop by the researchers. In the first session of the workshop, the research team oriented the participants to the need and feasibility of integrating experiments within a given semester (horizontally) as well as across different semesters (vertically) by presenting some sample problems. Following this, the participants were provided with sets of the colour-coded cards containing the aims of experiments and asked to pin them on Styrofoam boards (39 in x 19 in) such that they form the steps of approaching a simple research problem. The participants worked together in groups and, themselves, identified small research projects under which the experiments prescribed in the curriculum can be clubbed. Each group was supported by a resource person. The research problems were presented by each group during the workshop. The resource persons and the researchers conducted different sessions on how the challenges faced by the teachers in laboratory could be turned into opportunities. One of the sessions discussed ways of accommodating negative results obtained during laboratory sessions and how they should be viewed as opportunities of learning for the students rather than as something to be discarded. This was a crucial aspect to be addressed since in the pre-workshop questionnaire, the teachers had mentioned that the laboratory sessions make use of 'cookbook' protocols that have been designed to give expected positive results. Another session introduced the participants to statistical tools and how they can be used for quantification of variations in results obtained by students. This session also discussed how a large number of students can work in groups where effectively results from each group can serve as an iteration of an experiment. This strategy not

only saves time required for repeating an experiment to confirm results but also presents an opportunity to enhance quantitative skills of biology students. Further, a session on bioinformatics acquainted the participants with various web-based bioinformatics tools available and how they can be used for teaching different concepts prescribed in the curriculum. At the end of the workshop, teachers' change in approach, if any, towards the laboratory sessions and strategies of student engagement following the sessions of the workshop was assessed by written responses to questions projected by researchers. Also, a formal feedback on the workshop was obtained from the teachers on questionnaires distributed to them.

Outcomes and Conclusions

Although the inadequacies in the curriculum design, especially the absence of any component of research in the undergraduate biology courses, have been widely reported, not many efforts have been directed towards providing remedial measures for the same. The workshop served to address these issues by encouraging teachers to provide research experiences to their students within the limits of the prescribed curriculum and the available infrastructure. The researchers focussed on: 1) converting the existing experiments into investigative exercises by building a context of a real life problem, for example (Figure 4A) Clubbing experiments within a semester (horizontally) or across a semester (vertically) as steps of solving a research problem, for example (Figure 4B).

A.



B.

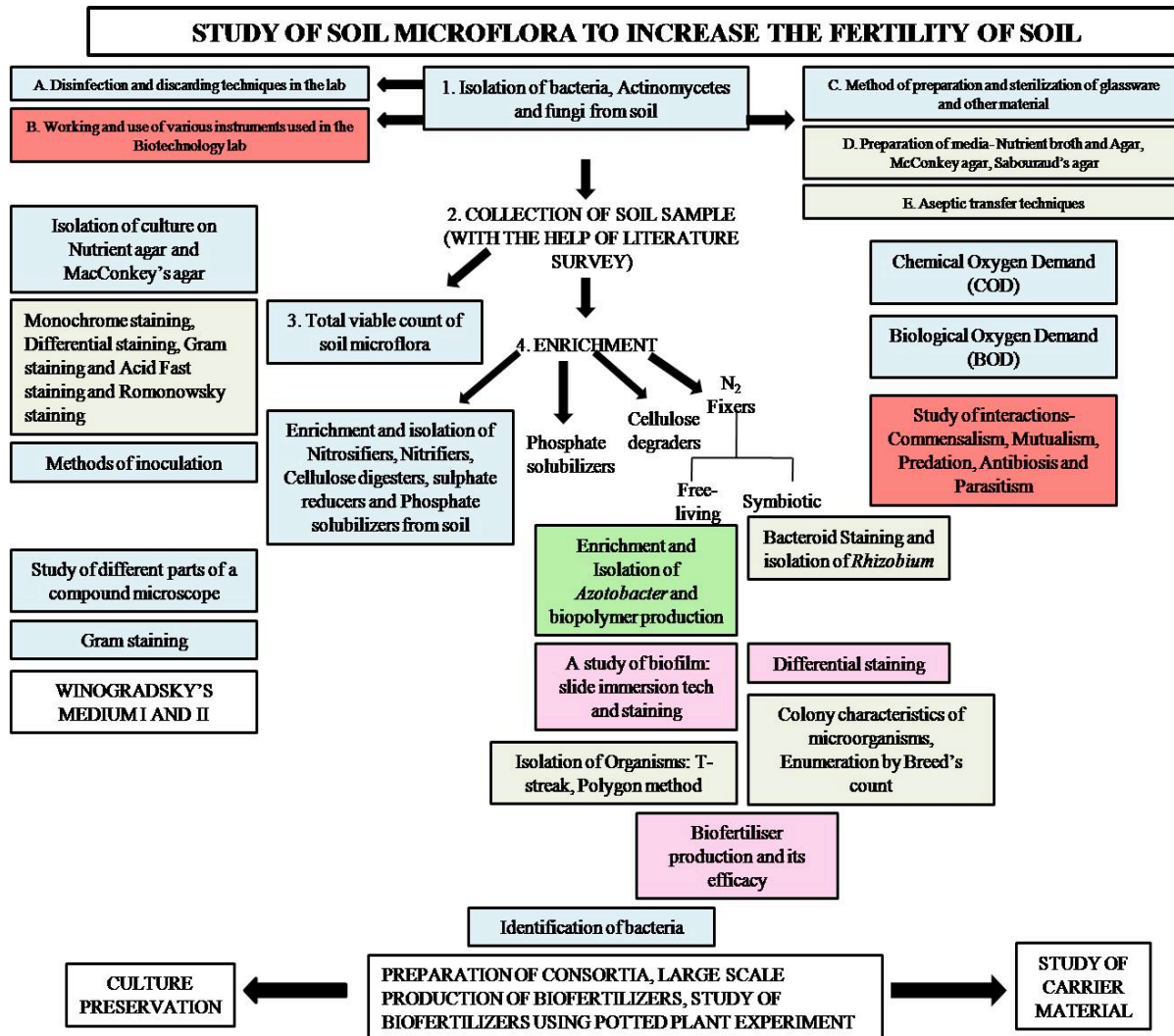


Figure 4 : A. Example of a real-life problem designed by converting the existing experiments
 B. Example of a research problem designed by horizontal and vertical clubbing of experiments

The collaboration of teachers during the workshop, facilitated by tasks designed by the researchers, resulted in the designing of about 40 simple research problems rooted in the curriculum. The workshop provided a platform for discussing the importance of development of science process skills among students and also resulted in useful resource generation. Many teachers expressed that it was the first time when they have seen the full syllabus and the workshop helped them connect with the other faculty members. They also mentioned that the workshop helped them build connections between the experiments and gave them novel ideas for designing research projects for their students (Figure 5). An online community of teachers for sharing of ideas and improvement of the teaching-learning process could also be created.

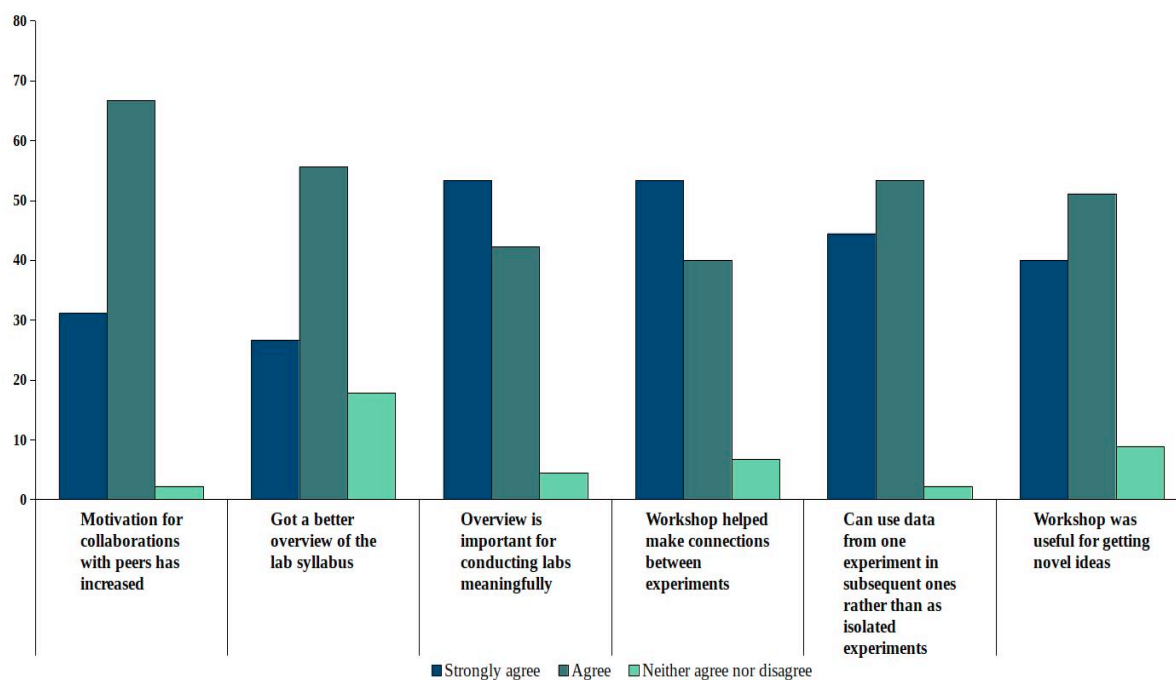


Figure 5: Participants' (n=45) views on the impact of the workshop as reported in the formal feedback

We have reports from some participants of having implemented the learnings from the workshop. However, a systematic follow-up is required to gauge the levels and success of this implementation. Although, the workshop motivated the teachers to implement changes in their current laboratory routines, several other factors may act as impediments to the implementation. As reported by the teachers, they are overloaded with administrative duties which leaves them with little time for introducing changes in their classes. Also, concurrent changes in the conventional assessment system may be required for effective implementation of project-based laboratory sessions. The workshop however gave insights on how the constraints to research can be overcome by making effective use of the available infrastructure, resources and time.

Acknowledgements

We would like to thank the participant teachers for their active involvement in the workshop. We also thank Dr. Shruti Samant, Dr. Aruna Wilson, Dr. Shiney Peter, Ms. Norine D'souza and Ms. Shmilona Jain for their valuable inputs, as resource persons, for the workshop.

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A Descriptive Analysis on Grammatical-Morphology Patterns of the Deaf College Students' Indonesian Written Language

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

Along with the encouragement of Inclusive Education in Universitas Brawijaya-Indonesia, the students with disability, including the Deaf, are having an opportunity to join higher education in the mainstream educational context. It is challenging for Deaf students, especially those graduated from Special Needs Schools since their previous education has not prepared them to access higher education. Previous researches have well documented that most of the Deaf population are struggling with producing written language. Thus, this article purpose is to seek the grammatical-morphology patterns in Indonesian written language performed by Deaf college students in Universitas Brawijaya. This study involves 10 Deaf college students consist of two groups (1) 5 students graduated from Public Senior High School (P SHS) and perform oral communication, (2) students graduated from Special Needs Senior High School and perform SIBI (Indonesian Language Signed System) instead of BISINDO (Natural Indonesia Sign Language) (Sn SHS). The findings describe that all of the students are struggling with Indonesian grammatical-morphology though P SHS Deaf students show better performance on using the preposition, possessive pronoun, conjunction and use both inflectional and derivational morphemes than Sn SHS Deaf students. The discussion of this study related to the Deaf students' language preferences, the influence of sign language use, morphological awareness and Deaf first language. This article will be beneficial for teachers and other researchers to develop strategies to improve Deaf students' literacy and as a reference to give literacy intervention for deaf children.

Keywords: Deaf college students, Grammatical-morphology, Indonesian written language

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Introduction

Along with the encouragement of Inclusive Education in Universitas Brawijaya, the students with disability, including the Deaf, are having opportunity to share higher education as students without disabilities. It is an insightful opportunity but also challenging matters since most of students with disability are not well prepared for higher education, especially Deaf students who are struggling with literacy issues.

PSLD (The center of disability services and studies), as the institution that provide services to support the study of students with disability in their college study such as providing students-assistants, interpreter, assistive technologies, and Indonesian language course specialized for deaf students.

This course is needed since Deaf students are struggling in producing written text. According to some research conducted in English-speaking countries on deaf abilities in written language revealed that deaf students tend to construct sentences simpler than other hearing peers. Their sentences are also syntactically simpler and they produce lowly vocabulary and lexical inflexibility. Deaf students are also facing difficulty with relative, subordinate, and pronominal clauses. In the grammatical morphology area, they are striking most with morphemes omission, substitutions, and addition (Fabbretti, D. et.al 2015).

Unfortunately, such kind of research is rarely done in Indonesia. Researches on the investigations of deaf students' language incompetency in Indonesia mostly have concentrated on improving deaf students' speaking and language competency from oralism perspective. Such as research done by Hernawati (2007) concludes that deaf students speaking and language competency can be improved through various ways, such as special services supported by facilities, early language intervention to the deaf children, and maximize the remaining hearing of deaf children using hearing aid. Another research done by Lintang Sari (2013) has only focused on identifying the needs of deaf students in written language learning in technical matters such as learning media which is adjusted to deaf students need, adopting second language teaching method as a method to teach deaf students, using simultaneous communication while teaching deaf students, and the need of gradual assessment process to observe the development of the learning process. Recalling the fact that the study of deaf students' written language in Indonesia are rarely done, this research offers the new issues on linguistics study.

Deaf students encounter new challenge when they arrive in higher education, mainly in terms of communication and accessing information either in the classroom or in other places. As the speech-dominated society, Indonesia people rarely apprehend sign language, thus oral and written communication is the best alternatives for deaf to communicate with their hearing counterparts. On the other hand, Deaf college students perform written language in a unique pattern which is mostly hard to understand and considered meaningless. This condition will indirectly have an effect on their academic futures. Therefore, this research focuses on deaf college students' Indonesian written language in the grammatical-morphological level.

Method

This research involve 10 Deaf college students divides into two groups with the different background characteristics; (1) the Deaf students graduated from public Senior High school and perform oral language (P SHS) and (2) the Deaf students graduated from Special Needs Senior High School and perform Sign Language (Sn SHS). They were asked to write a recount text related to their first experience in University.

This research utilizes the descriptive taxonomy covers omission, addition and substitution on grammatical-morphology level (Fabbreti, 1998). Grammatical-morphology level is related with the use of lexical and functional words, the use inflectional and derivational morpheme, word selection and the use of punctuation.

This research examines the numerous selected Indonesian written languages performed by Deaf students in Universitas Brawijaya divided into two groups according to their senior high educational background and their language preference. The first group is called the P SHS group refers to deaf students graduated from public high school and perform oral communication; the second group is called the Sn SHS group refers to deaf students graduated from special needs senior high school and perform sign language.

It is a document analysis using qualitative approach since it aims to explore and understand the meaning individuals or group ascribe to a social or human analysis that builds the data from particular into general themes. Qualitative research involves some characteristics such as typically data collection which is done in participants' setting, inductive data analysis, and the interpretation of the researcher on the data (Creswell, 2007).

Review of Literature

Deaf Students' Written Language Characteristics

Learning is considerably supported by our senses, if one of it is limited; our access to information is also limited. Deafness chiefly limits the audio sensory that potentially affect the speech ability, which lead to communication disorder that automatically will affect the learning process. Deaf individuals require a unique form of communication. Visual communication modes such as sign language, finger spelling, lip reading and written communication will be the most preference. In Indonesia, this form of communication will automatically limit their process of language learning since the sign language is not familiar to our society. Beside academic matters, written language is the most efficient communication among deaf and hearing individuals. Therefore, written language competence is essential for deaf individuals to be inclusively included to the society.

A recent study engaging Gallaudet University students reveals that the estimation number of deaf students with satisfactory skills ranged between 5 percent and 75 percent. Evidently, writing is the complex skill to be mastered by deaf students (Marschark, 1997).

Researches reveal that deaf students' writing competence is detained for some years than hearing students. Some characteristics found in deaf students are they tend to use fewer cohesive markers than hearing students (De Villiers 1991 in Albertini & Schley, 2003). They also use vocabulary restrictedly than the hearing students. In the spelling area and punctuation, they perform sentence simpler than the hearing students (Albertini & Schley, 2003). Another research conducted in English-speaking countries on deaf abilities in written language found that deaf students produce shorter sentences and simpler syntactical structure than the hearing students. They also display the poorer vocabulary and lexical rigidity. They stumble on relative, subordinate and pronominal clauses. Their most difficulty subjects are in the area of grammatical morphology, covering omissions, substitutions, and addition of the variety of morpheme beside lexical, morphologic, syntactic and pragmatic (Fabbretti, D et.al, 2015). Sentence-level grammatical and semantic anomalies are found in deaf adult and adolescents' writing (Marschark, 1997).

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Finding

Grammatical-Morphology patterns of P SHS deaf students

The writing of P SHS students mostly written in a good morphological patterns with appropriate derivational and inflectional morphemes that function correctly in the sentences though there are found few non-standard grammatical morphologies related to the usage of non-standardized preposition, inflection, derivation, omission and substitution but not in significant number.

As illustrated in table 1, there are some omission, addition and substitution of grammatical-morphology. Sentence in 1(a) undergo omission of preposition *untuk* 'for' as the preposition. Sentence 1(a) is also syntactically non-standard, phrase *membuat buka* 'make open' though semantically understood but it is syntactically non-standard. The standard form to represents the phrase is *membuka* 'opening'. Another omission is also found in non-verbal sentence that involve noun clause as in sentence 1(f) *istilah kata disabilitas dan difabel sama* '(literally translated) the term of disability and difabel is similar'. In standardized structure of nonverbal sentence, the subject and predicate should be separated by copula *adalah* that is equal to auxiliary verb in English and that sentence is missed it out.

Related to the inflection, there is omission of inflective prefix *me-* that derive word into verb form in the sentence 1(b) *perkenalkan diri* 'introduce myself' and 1 (c) *beri contoh* 'give example'. The words *perkenalkan* and *beri* are imperative, though this

sentence is semantically understood but it is considered non-standard without the presence of prefix *me-*, as in *memperkenalkan diri* ‘introducing myself’ and *memberi contoh* ‘giving example’. Omission of inflective morpheme is also found in sentence 1(d) *..jadi tegur tidak boleh ngobrol* ‘so we are warned to stop chatting’. The word *tegur* ‘warn’ is imperative, it needs prefix *di-* to make it passive as in *ditegur* ‘is warned’. Beside inflection verb, there is inflection noun found as in the sentence 1 (e) *menempuh pendidik di Universitas Brawijaya* ‘taking education in Universitas Brawijaya’. The word *pendidik* is equal to noun word ‘educator’ in English, while the sentence context requires other noun that is *pendidikan* ‘education’.

Table 1. Omission, addition and substitution of grammatical-morphological elements of P SHS Students

Taxonomy	Grammatical-Morphology
1. Omission	<p>a) <i>Pemimpin UB telah berusaha <u>untuk membuat buka jalur</u> Ø (untuk) difabel</i> ‘The leader of UB has tried to make open line Ø (for) difabled’.</p> <p>b) <i>Saya <u>perkenalkan diri</u></i> ‘I introduce myself’</p> <p>c) <i><u>Beri contoh.</u></i> ‘give example’</p> <p>d) <i>Dosen sempat salah paham bahwa pendamping saya juga Maba padahal bukan, jadi <u>tegur tidak boleh ngobrol</u></i> The lecturer has misunderstood consider my volunteer as the new students instead she is not, so we are warned to stop chatting’</p> <p>e) <i>..dan <u>menempuh pendidik di Universitas Brawijaya</u></i> ‘..and taking education in Universitas Brawijaya’</p> <p>f) <i>Istilah kata <u>disabilitas dan difabel Ø (adalah) sama.</u></i> ‘ the term of disability and difabel Ø (is) same’</p> <p>g) <i>Apakah ospek yang kami <u>jalan nanti sama dengan mahasiswa reguler</u></i> ‘Is orientation for us later similar to other (non-disabled) students’</p>
2. Addition	<p>a) <i>UB <u>yang(Ø) masuk ke dalam deretan kampus bergengsi</u></i> ‘UB <u>that(Ø) is included to a rank of prestigious university’</u></p> <p>b) <i>Kami disarankan untuk bertanya ke orang <u>yang (Ø) lain</u></i> ‘We are suggested to ask people <u>who</u> other (other people)’</p> <p>c) <i><u>Banyak para calon mahasiswa</u></i> ‘many college student applicants’</p>
3. Substitution	<p>a) <i>UB <u>yang(Ø) masuk ke (di) dalam deretan kampus bergengsi</u></i> ‘UB <u>that(Ø) is included into a rank of prestigious university’</u></p>
<p>Omissions are indicated by Ø, non-standardized forms are underlined, and standardized form is in parenthesis.</p>	

The omission of suffix *-an* in the sentence vitally make the sentence semantically ambiguous though it is syntactically acceptable. The last is the omission of suffix *-i* in verb derivation as shown by sentence 1(g) *Apakah ospek yang kami jalan nanti sama dengan mahasiswa reguler* ‘Is the college orientation for us will be similar to other (non-disabled) students’. The underlined word *jalan* ‘street’ is a noun, to derive verb we need to attach suffix *-i* in the word into *jalani* ‘join’.

Addition is identified with the presence of *yang* ‘that’ in the sentences 2(a) and 2(b). The word *yang* ‘that’ is a relative pronoun used to precede relative clause to emphasize noun phrase, *yang* ‘that’ in the sentences is unrequired. The underlined words *banyak* ‘many’ and *para* (preposition indicates plurality) are considered redundant since both of words indicates plurality. In standard form, it is better to use one of it. Substitution is also found as in sentence 3(a) as the usage of non-standardized preposition *ke* ‘to’ instead of *di* ‘in’ in the prepositional phrase *ke dalam* ‘into’.

Another unique characteristic found in morphological level is the usage of suffix *-nya*. In Indonesian, suffix *-nya* function to indicate the third person possessive pronoun such as in the sentence *namanya A.M* ‘his name is A.M’. It also function as ligature before possessive noun such as in *rasanya* ‘the feeling’ in the sentence *saat saya mengikuti PK2MU rasanya saya telah memasuki dunia baru* ‘when I join PK2MU, I feel like entering the new world’. It also can be attached to the head noun which is equal to ‘the’ in English such as in the sentence *alasan nya karna terkesan lebih sopan* ‘the reason is, it sounds politer’.

In term of lexical selection, most of deaf students select the lexical semantically correct though most of them use non-standard diction, such as the word *sama kamu* instead of *dengan kamu* ‘with you’, or the word *ngobrol* ‘chatting’ instead of *berbicara* ‘talking’.

Grammatical-Morphology patterns of P SHS deaf students

Sn SHS deaf students perform some violation in morphological level according to non-standardized grammatical-morphology covers the usage of non-standardized preposition, conjunction, pronoun and verb inflection, non-standardized lexical covers the lexical selection. Besides those items, omission (the absence of obligatory linguistics item), addition (the presence of inappropriate linguistic item) and substitution (the substitution of the correct item with the incorrect one) are also found.

Table 2. Omission, addition and substitution of grammatical-morphological elements performed by SN SHS deaf students

Taxonomy	Grammatical-Morphology
1. Omission	<p>a. <i>brosur</i> \emptyset (<i>nya</i>) <i>ke orangtua</i> \emptyset (<i>saya</i>) ‘give brochure to (his) parents’</p> <p>b. <i>saya mencari</i> \emptyset (<i>materi di</i>) <i>internet</i> ‘I look (materials in) internet’</p> <p>c. \emptyset (<i>se</i>) <i>Lanjutkan</i> \emptyset (<i>nya</i>) <i>ada pengumuman</i> ‘Then, there is an information’</p> <p>d. <i>Kenapa tawa?</i></p>

	‘why do you laugh?’
2. Addition	<p>a. <i>dosen datang di kelasnya</i> ‘the lecturer comes to his class’</p> <p>b. <i>ada perasaan malu</i> ‘there is a feeling shy’</p> <p>c. <i>masuk kuliah memang harus butuh kesabaran</i> ‘studying at university must need patience’</p>
3. Substitution	<p>a. <i>dari gruru SMALB oro-oro dowo terus saya dikasih brosur ke orangtua</i> ‘from teacher of SMALB in oro-oro dowo then I am given brochure to parents’</p> <p>b. <i>berkenalan teman baru tersebut D, R, and H</i> ‘be acquainted with new friend mentioned D,R and H’</p> <p>c. <i>Saya pendaftaran kirim email ke PSLD</i> ‘I admission send email to PSLD’</p> <p>d. <i>Pertama dulu saya dapati brosur UB</i> ‘At first, I got UB brochure’</p>

Omissions are indicated by Ø, non-standardized forms are underlined, and standardized form is in parenthesis.

Some omission identified in the sentences produced by Sn SHS deaf students are the omission of –suffix *-nya* that indicates definiteness, the omission of dependent in noun phrase, the omission of preposition, the omission of affix that derive adverb and verb and the omission of object.

In term of addition, Sn SHS deaf students tend to write sentences redundancy by using noun phrase instead of verb as their predicate that lead to the presence of unrequired word. Another addition recognized is the presence of suffix *-nya* that do not indicate anything in the sentence.

Substitutions of active form with passive form are found but not in significant number. Other substitution is the substitution of apposition *yaitu* ‘that (be)’ with inflection verb *tersebut* ‘mentioned’ and the usage of noun as a verb. The substitution of inflectional verb is also found. Beside those characteristics, Sn SHS deaf students also produce orthographic miss-spelling in trivial number. The detail explanation is elaborated in table 2.

Omissions are mostly found in Sn SHS deaf students’ writing such as explicated in table 2 number 1. In number 1(a) the omission are found in the word *nya* in *brosurnya* ‘the brochure’ that indicate definiteness and the dependent of noun phrase *orangtua saya* ‘my parents’. The word *brosur* in the second clause (the one in bracket) is a definite noun that indicate the first *brosur* in the first clause, so it should be completed by the suffix *-nya* to show definiteness of the noun which is equal to ‘the’ in English. The next word is *orangtua*, this word is incomplete since it doesn’t have dependent to explain whose parents are they. This word should be completed by the pronoun *saya* ‘my’ into *orang tua saya* ‘my parents’. 1(b) shows that the sentences missed out the object and preposition *di* ‘in’ placed between the predicate *mencari* ‘search’ and complement *internet* ‘internet’. Related the omission in the use of the derivational

adverb, 1(c) shows that the sentence missed out the circumfix *se-.....-nya* that derive the adjective *lanjut* into adverb *selanjutnya*. Beside the omission on derivational adverb, there is also omission on derivational verb as in noun *tawa* in 1 (d) that missed out derivational verb *ter-*. Other omission in 1(d) is the absence of object as in *kenapa (kamu) tertawa?* ‘Why do (you) laugh?’.

The unrequired *-nya* in the 2(a) is considered as addition since *-nya* in the sentence do not use appropriately. Another addition is sentence in 2(b) *ada perasaan malu* ‘there is a shy feeling’ which is more properly changed into *merasa malu* ‘feeling shy’. The last addition as shown in 1(c) is the addition on *harus butuh kesabaran* ‘need patience’ that can be changed into *membutuhkan kesabaran* ‘need patience’.

Related to substitution, some cases found are substitution of active verb with passive verb *dikasih* ‘is given’ instead of active verb *memberi* ‘give’ in 3(a). *dikasih* that indicate passive form while the sentence context indicates active form. The word *dikasih* should be in active form that is *mengasih*, but this word is lexically inappropriate. The proper lexical item that represents the sentence meaning is the word *memberi* ‘give’. The next case is the substitution of apposition *yaitu* ‘that is’ with the passive word *tersebut* ‘mentioned’ in 3(b). Another case is the substitution of derivational verb *mendaftar* ‘enroll’ instead of derivational noun *pendaftaran* ‘registration’ and the inflectional verb *kirim* ‘send’ instead of inflectional verb *mengirim* ‘sending’ as shown in 3(c). Another inflectional verb substitution also appears in 3(d) in the word *dapati* instead of *mendapat* ‘got’ because suffix *-i* performs grammatical meaning to indicate; (1) repeated action (2) place of the [base]; (3) ‘feel something to’ (4) give [base]; (5) make [base] as and (6) do an act to the [base] that do not fit with the sentence context.

Other omission and addition related to the usages of suffix *-nya* are also found. It is used both correctly and incorrectly such as in the sentence *ketua kelasnya disuruhnya kita menunjukkan nama* ‘(literally translated) the chief of the class is asked us to mention his name’. The suffix *-nya* is used correctly in noun phrase *ketua kelasnya* ‘the chief of the class’ since it shows definiteness, but it is used incorrectly in the sentence *disuruhnya* ‘(be) asked’, though it is semantically understood but it is non-standardized and linguistically incorrect because suffix *-nya* is only attached to noun head. The sentence also shows the misuse of prefix *-di* in word *disuruhnya* that should be changed into *menyuruh*. The lexical *menunjukkan nama* ‘showing name’ is also appropriate, it should use the more proper word that *ia menyebutkan nama* ‘he mention his name’.

Beside the grammatical-morphology violation, there are also some orthographic misspelling such as in the words *susananya* for *suasananya* ‘the atmosphere’, *selasai* for *selese* ‘finished’, and *mengenti* for *mengerti* ‘understand’.

Conclusion

Findings of this thesis replicate previous studies regarding the grammatical-morphology patterns of deaf college students in its relation with educational background but it does not reveal the influence of sign language preference to the written language performance though it shows a significant relation according to the findings.

This research's finding replicates the previous finding by Fabbreti, et.all (1998) that the deaf Italians are also striking difficulties on grammatical-morphology area and word-order violation. Deaf college students in both of group tend to do errors in the morphological and syntactic level but the error performance is lesser in P SHS deaf students' writing than Sn SHS deaf students' writing. Both of groups are having experiences on omission, addition and substitution of inflectional and derivational morphemes though it is not significant in P SHS deaf students' writing but pretty massive in Sn SHS deaf students' writing.

Educational background may be very influential for deaf students since it evolves students' characteristics. These research findings replicate the previous research done by Stinson, M.S & Kluwin, T.N (2003) that conducted a research on educational consequences of deaf in alternative school placements categorized into; (1) Separate schools, (2) resources rooms and separate classes (3) general education classes and (4) co-enrollment classes. This thesis only discusses the two of the four alternative school placements since this thesis only focuses on two educational placements that is Public Senior High school and Special needs Senior High School that well represented by separate and general education classes. In relation to the achievement, there are two finding revealed that deaf students in general education class perform better English skills than those in other classes (Kluwin & Stinson, 1993; Reich et al, 1997 in Stinson & Kluwin, 2003). This research finding also reveals that P SHS deaf students who graduated from Public Senior High School perform better performance than those who graduated in Special needs Senior High School. This significant findings needs to take into account without undervalue the quality of Special needs Senior High School since there are many factors that influence deaf college students written language performance.

Concisely, both of students perform some violation patterns of grammatical-morphology though PSH/O students show better performance than SN SHS students. The results reveal that deaf students graduated from public school and perform oral language have better skill to produce Bahasa Indonesia written language than those who graduated from special needs senior high school and perform sign language. The differences of education model and language modality definitely influence deaf students' writing skill.

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The Relationship between Musical Instrument Adoption and Professions of Music Students of Suan Sunandha Rajabhat University in Thailand 4.0

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

This research is the integration of qualitative research and quantitative research. The purposes are 1) to study factors and motivation when selecting musical instruments for learning Western music of music students of Suan Sunandha Rajabhat University 2) to study factors for making decision on music careers of music students of Suan Sunandha Rajabhat University and 3) to study relationship between musical instrument selection and professions. The population is 80 music students of Suan Sunandha Rajabhat University. The data are from interview and questionnaires and descriptively-analyzed. According to the result, 1) 90% of the students has their own preferences 2) factors such as friends' suggestion are 5% 3) the other 5% goes to unavoidable situations. The factors for decision-making on music profession are 1) individual aptitude by 50% 2) opportunities for being into the career by 50%. Musical instrument adoption is positively correlated with opportunities for being into the career.

Keyword: Suan Sunandha Rajabhat University, Thailand 4.0, Musical Instrument Adoption

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Introduction

Up to the present time, Thailand has experienced lots of development so that it can overcome obstacles for a new era which has a relation to structural changes of the 21st century. Also, this development can help Thailand to avoid the regression from the 2nd to the 3rd world country. In case the development is achieved, Thailand can become the 1st world country. With all the development so far, Thailand 4.0 has concretely been driven.

Thailand 4.0 is a policy for economic development which is initiated by General Prayuth Chan-ocha, the prime minister of Thailand and the head of the National Council for Peace and Order (NCPO), who has administered the country after the long political conflict. His slogan is “Stability, Prosperity and Sustainability” of which the main task is to drive reformation in all parts as well as to develop the country to prosper the same as international by using technology help develop and modernize in consistency with the 21st century.

Thailand 4.0 is an economic model that aims to unlock the country from several economic challenges resulting from past economic development models which place emphasis on agriculture (Thailand 1.0), light industry (Thailand 2.0), and advanced industry (Thailand 3.0). These challenges include “a middle-income trap”, “an inequality trap”, and “an imbalanced trap.”

According to Thailand 4.0’s policy, it has a big impact on major development in science, creativity, innovation, technology and research and development by planning the development through “Public-Private Collaboration.” The development focusses on participation from private sector, financial sector, people-based sector, and academic sector to brainstorm and join forces through projects, memorandum, activities or research. With the reference to Public-Private Collaboration, targets are classified into Group 1 Elevating innovation and products, adopting laws and government mechanisms, and developing future industrial clusters, investment attraction, and infrastructure Group 2 Developing modern agriculture and economic foundations and public-private Group 3 Promoting tourism, earning, and stimulating government spending Group 4 Developing basic education and leadership (Public schools) as well as upgrading professional quality Group 5 Promoting export and overseas investment etc. which have been set up systematically and specified guidelines for intensive use under the model of Thailand 4.0.

Thailand 4.0 is really important for concrete development with the reference to its policies, especially education which rapidly needs reforming for Thai students so that they can be well-prepared for Thailand 4.0 such as English skills which are the most important for international communication, knowledge exchange, cooperation, and trade. So far, the Ministry of Education has upgraded the English language competency through important projects; for example, the development of English teachers through the Boot Camp, the application “Echo Hybrid, Echo English,” etc.

The promotion of education in Thailand 4.0 is done equally to all subjects. They are equally important. It depends on how curriculums and relationship will be aligned

with society, economy, and labor market needs referring to Thai 4.0 policy in order to promote the curriculums in the same direction.

The music education program in Suan Sunandha Rajabhat University is music study under Faculty of Fine and Applied Arts. The program has been revised in 2016 according to Thai Qualifications Framework for Higher Education; TQF: HEd by focusing on more development and improvement of quality of music students consistent with changes and needs in the current society.

The instructors have the qualifications and experience as the criteria. The curriculum is designed to provide students with knowledge and skills necessary to their music instruments both theoretically and practically, together with management until they can be good musicians who can creatively perform useful music to public as well as enter music profession as they choose.

Objective

- 1) To study factors and motivation when selecting musical instruments for learning Western music of music students of Suan Sunandha Rajabhat University.
- 2) To study factors for making decision on music careers of music students of Suan Sunandha Rajabhat University.
- 3) To study relationship between musical instrument selection and professions.

Research Methodology

This research is a combination of qualitative research and quantitative research of which objectives are to study factors and motivation for selecting musical instruments to study Western music of students at Suan Sunandha Rajabhat University and to find factors to enter music profession and relationship in musical instruments selection and their professions after graduation. The process is as follows:

1. study program structure of Fine and Applied Arts, Music Study, Suan Sunandha Rajabhat University, of Western Music Skill:

- 1.1 MUS1501 Western Music Skill 1
- 1.2 MUS1502 Western Music Skill 2
- 1.3 MUS2501 Western Music Skill 3
- 1.4 MUS2502 Western Music Skill 4
- 1.5 MUS3501 Western Music Skill 5
- 1.6 MUS3502 Western Music Skill 6

According to the above courses, each course shall classify music instruments into 7-9 groups as follows:

- | | | |
|------------|-----|--|
| Saxophone) | 001 | Woodwind (Flute, Clarinet, Alto Saxophone, Tenor |
| | 002 | Piano |
| | 003 | Brass (Trumpet, Trombone, Euphonium, Tuba) |
| | 004 | Classical guitar |

- 005 Voices
- 006 Drum Set
- 007 Violin
- 008 Electric guitar
- 009 Electric bass / Double bass

Selecting a Topic and an Objective

The researcher is one of the instructors of Western Music Skill and would like to study factors or motivation in selecting musical instruments for entering music profession after graduation or study relationship between musical instrument selection and professions as to Thai Qualifications Framework for Higher Education; TQF: Hed by focusing on Learning Outcome Management in order that the specified directions can be achieved. Therefore, they can be brought into learning development. Then students can apply their music knowledge and skills for their careers. It also guarantees the quality of education of students. This result is consistent with the policy of quality assurance and education standards of the Office of the Higher Education Commission.

Sampling

The target samples and the population of the research are 1st to 4th year students of Faculty of Fine and Applied Arts, Music Study, Suan Sunandha Rajabhat University.

Collective Data

1. Data is collected from interviews, questionnaires, and descriptively-analyzed data from 1st to 4th year music students of Faculty of Fine and Applied Arts, Suan Sunandha Rajabhat University totally 80 persons:

1.1 Course: 001 Woodwind 14 persons	1.3 Course: 003 Brass 14 persons
- Flute 2	- Trumpet 3
- Clarinet 2	- Trombone 5
- Alto Saxophone 8	- Euphonium 3
-Tenor Saxophone 2	- Tuba 3
1.2 Course: 002 Piano 5 persons	1.4 Course: 004 Classical guitars
1.5 Course: 005 Voices 44 persons	1.6 Course: 006 Drum set
1.7 Course: 007 Violin 6 persons	1.8 Course: 008 Electric guitars
1.9 Course: 009 Electric bass	

2. Questionnaires are filled by music students of Faculty of Fine and Applied Arts, Suan Sunandha Rajabhat University

3. The music study program (revised in 2016), Faculty of Fine and Applied Arts, Suan Sunandha Rajabhat University is studied

4. The learning outcome in higher education is studied according to Thai Qualifications Framework for Higher Education; TQF: HED

Analyzing data

The analysis is as follows:

1. The data from the interviews of 1st to 4th year music students are analyzed and synthesized for the results of the factors and the motivation for choosing the instrument for the study of Western Music Skill of music students, Suan Sunandha Rajabhat University and the factors in choosing the instrument to enter the professions. This can be brought into practice for teaching in the future
2. The collected questionnaires are for analysis and synthesis for the results of higher education learning in accordance with Thai Qualifications Framework for Higher Education; TQF: HED that have impacts on the course of music study, Western Music Skill (Practice)
3. The data from observations and note-taking are summarized the results of higher education learning in accordance with Thai Qualifications Framework for Higher Education; TQF: HED that have impacts on the course of music study, Western Music Skill (Practice) of Suan Sunandha Rajabhat University.

Result

The results of the study “The Relationship between Musical Instrument Adoption and Professions of Music Students of Suan Sunandha Rajabhat University in Thailand 4.0” are as below:

According to the results, 1) 90% of the students have their own clear preferences; 2) others factors such as friends’ suggestions amount to 5%; 3) the remaining 5% comes about because of unavoidable situations. The factors for decision-making in terms of music profession are 1) individual aptitude, 50%; 2) career opportunities 50%. In the study, musical instrument adoption is positively correlated with career opportunities.

Samples from Western Music Skill course



Conclusion

According to the analysis “The Relationship between Musical Instrument Adoption and Professions of Music Students of Suan Sunandha Rajabhat University in Thailand 4.0,” learning activities in Western Music Skill are consistent with program in Faculty of Fine and Applied Arts, Music Study (revised in 2016), Suan Sunandha Rajabhat University and Thai Qualifications Framework for Higher Education; TQF:HEd). The 6 desired characteristics are

- 1) **Virtue and Ethics:** Honesty, Discipline, Academic and Professional Morality, Responsibility to oneself and society, Open-mindedness to opinion of others, and Public Consciousness
- 2) **Knowledge:** music knowledge and the related, ability to study, solve problems, and develop music systematically, music knowledge in connection with social contexts, wisdom, and culture, and knowledge relating to standards and practices in music profession
- 3) **Cognitive Skills:** ability to collect, gather, propose solutions creatively, ability to analyze, synthesize, and satisfy solutions rationally, ability to integrate knowledge into another study in order to create academic and professional works, ability to be witty
- 4) **Interpersonal Skills and Responsibility:** leadership and good interpersonal skills, understanding ones’ roles and being open-minded to other opinions, responsibility for ones’ tasks and work with others efficiently, and expressing opinions logically and straightforwardly and paying respect to different opinions
- 5) **Numerical Analysis, Communication, and Information Technology:** ability to communicate by speaking, listening, reading, and writing and presenting music efficiently, ability to use information technology in searching for information for creating music or presenting music efficiently, and ability to apply numeric or technological knowledge for music properly
- 6) **Psychomotor Domain:** ability to use voice and perform music well and skilled and good personality to present a piece of music in public

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Thailand 4.0 Music Student: Study on Classical Guitar Repertoire Learning Process

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

The purpose of this research is to study technique or methodology that music student of Thailand 4.0 uses for accomplish the assigned repertoire for finding appropriate guitar method that should be using in the future. Thailand 4.0 is the education system that focuses on developing and innovating knowledge for social need. Integrating and creating the new innovation from learner knowledge principles are the result of Thailand 4.0 education. The research instruments included: 1) in-depth interview with 7 Suan Sunandha University music student (classical guitar major) 2) performance assessment form. Both forms will be analyzed after the samples achieve the assigned repertoire. The results are shown that the samples are using internet platform especially YouTube about 66.6% as a channel for learning assigned repertoire, while others still learning the repertoires by private instructor. In the conclusion, student tend to use internet platform to study the piece, but some amount of students still learn the repertoire by private instructor.

Keywords: Thailand 4.0, Classical Guitar, Repertory, Learning Process

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Introduction

Thailand 4.0 is the model of modern Thai economics that focus on security, prosperity, and sustainability to reciprocate 21 century needs. Of cause there was Thailand 1.0 which focuses on heavy agricultural sector business. Thailand 2.0 was emphasizing on light industries, while Thailand 3.0 was focusing on heavy industries and export business. “In order to step over middle class country trap by transforming from traditional agriculture to new era agriculture which emphasizes on technology management in order to turn Traditional SME to Smart Enterprises with high capacity, low value Traditional Services to achieve high value, and low skilled labor to knowledgeable, specialized and highly skilled labor.” (Thailand 4.0, 2017). Those economics model is not only affect in the business field, but it also effects in education field as well since. In educational field, Thailand 4.0 education is ideally to improve every aspect of education that reflecting 21 century needs. The qualification of Thailand 4.0 student is not only offer knowledge to people, but it is to humanize people with habit of studying, integrity, analytical skill, and social skill. Also, Thailand 4.0 population need to modernized and build-up their country to be in higher standard. In sequence of using innovation-based concepts as a model of development will level-up the middle-income trap eventually. (Pruekchaikul, 2017). Music education has been change dramatically after the increasing number of the internet platform on handheld devices uses.

Big number of both students and professors are using computing media instructions especially on personal laptop computer or handheld devices. “Since early 1960s educators and computer scientist began using computers for teaching purposes. Initially it was used as reading and typing text ...However with the invention of affordable microcomputers and the integration of text, graphics and color there was a rapid spread of computers in business, educational institutes and homes” (Wikramanayake, 2005) Professors use those technologies as the instructional media to help student understand the particular subject contents more effectively. Also, student can take the benefit of computing media for better understand both the concept and in-depth details, but mainly student still need the experience.

4.0 students are independent learner

Highly numbers of music student now are using independent resources mainly on the internet for their learning. In the past when the internet platform was not really growth, student learning process is relaying on professor or the instructor resources. Trends of external degree or “Alternative Learning” was first appears around 1850s, and most developed in 1969. Those programs included reasonable amount of “tradition curriculum” and “external delivery method, such as computer method, or video platform. (Coggins & Chere C. ,1988). Most student needed to communicate of some sort with professors to get particular content. Either, prefer to study independently or with knowledgeable professor mostly are learning from books or non-technologies resources.

It is important to investigate the appropriate method for 4.0 music student because the result will maximize the quality of repertoire learning process in different ways. Finding the ways that students are learning the performance and repertoire learning skill is first priority.

Out-Source Educational Tools

Students nowadays tend to use the internet as the main resources for learning new repertoires because it is convenient and more independent. That make the conflicts with tradition style of learning, which the professor or the instructor play the important role on teaching. There are many computation media instructions, such as, application, social media platform, or online learning site. For example, The guitar corner: website that host by Australian classical guitarist guitar Simon Powis. In this website is combine multiple knowledge about Classical guitar. There are lots of section that useable for independent guitar learner, such as, books, blog, and podcast. In each particular section indicates personnel Powis's guitar techniques, and other support content like, an interview, or blogpost. This is Classical guitar by Bradford Werner also provides similar content idea with identical interpretation. The big difference between those two websites are Werner website tend to emphasize on collect classical guitar music sheets and tabs. Also, those two have organized section differently. Brandford organize free lesson section by level of player, while Powis organizes it by playing techniques.

Literature reviews

There decent numbers of research about music education development that touch on from different aspect. The article from David J. Hargreaves & Nigel A. Marshall, "Developing identities in music education" is indicate the distinction between "Music in School" and Music outside school. "Concept of musical identities might enable us to understand musical behavior from different people from inside as well as in developing broader conceptions of the scope of music education" (Hargreaves & Marshall, 2003)

the other study from Nicholas Michael Stefanic, *Based music learning: modeling the process and learning outcome in massive open online course*: the study is about the effect of musical creative process lead to musical learning. The data in this particular study are collected by analyzing through, personality, motivation, and music predilection. Some research study on topics that not related to music in term of skills, but in term circumstance sets. For example, *the relationship between English language learner status and music ensemble participation* by Julie A. Lorah, the research claimed that English language learner (ELL) or non ELL are contain the same level of interesting, just lack of opportunity to be in the music ensemble section. The statement shows that the opportunity also part of important topic that might affect some aspects of student in 21 centuries particularly Thailand 4.0 student. The article listed in this paragraph include this paper are not mean to create innovation, but it will indicate useful evident for interested scholar or inventor.

The interesting data and result will indicate the new understanding of 4.0 student repertoire learning process. The Professor or instructor should consider the result and apply for design teaching process model. Moreover, the value knowledge in this research will be powerful tools for future methodology selection as well. All of those changes are effect the ways of repertoires learning process of 4.0 SSRU guitar students. Studying on classical guitar repertoire learning process is important.

Methodology

The research question is what technique or methodology that music student of Thailand 4.0 uses for accomplish the assigned repertoire. To answer the research question will need to uses the research instruments included: 1) in-depth interview with 7 Suan Sunandha University music student 2) performance assessment form. Both forms will be analyzed after the samples achieve the assigned repertoire.

Participants of both research instrument are 7 second year, Suan Sunandha University music student. All of participants are Classical guitar major, male gender, and Thai nationality.

Interaction or In-depth interview with experience participants is the effective ways to get the information. In educational research, in-depth interview is popular to use. It is qualified tools for taking out data more subjective. (Rita S p.1)

Participants of the interview are from current Suan Sunandha University music student. All of them are from Classical guitar major who have direct experience of both in-class and independent learning. Participants will need to achieve the solo repertoire from Spanish composer Francisco Tarrega “Lagrima” (Figure 1). Participants need to self-decide for what learning tools they need to accomplish the assigned repertoire.

Figure 1: Francisco Tarrega “Lagrima” excerpt

Interview discussion questions are divided into 3 categories below: 1) Participants background analysis: This section will collect participants background especially, in education. The result will indicate how the different educational and behavior background affect the learning process individually. 2) Learning platform: this section is to measure that which learning platform selection student tend to use for processing the assigned repertoires. The result of this section will prove either where

participants knowledge platform which beneficial for this study to be more direct, and it can define some of study behavior in deeper level 3) Instructional media selection: the result after measuring this particular section is much like learning platform category, which will provide more profound understand of individual participant from each selection their made.

Collecting data from performance assessment form (PAF) is also powerful tools because from getting that information directly from participants. it would show the participants learning habits and behavior. Importantly, it will represent learning process path of participants that will be one of significant information to have. Participants need to record every practice section that they have attended include rehearsal. However, participant need to design their own PAF whether be tradition or standard format or prefer to use table or charts. To measure the quality of each student is to analyzing through the PAF section. The qualified PAF should indicate about tone production, intonation, accuracy, technique, and interpretation. If participants mention about part of those 5 criterion, they will be qualified for measuring. The decision making will indicate how participants achieve the assigned repertoire, and how participants learning style. PAF will shows data that will improve student individually.

Result

The result of this interview section was interesting. Each Student tend to learn from the instructor most of the time. Teacher or the instructors give them both advise and individual content. Only one student that learn full-time by instructional computer media, or method books.

The result shows that online educational technology is the most educational tools that Thailand 4.0 music student use especially on social media. The result from interviewing 7 participants shows that all of them spend time on social media to learn things on social media. About 66 % of the interview participants research or study by searching through YouTube (Figure 2). One of participant mentions that YouTube is a video media, which it extracts them to learn more than reading from blog post or books. Normally, videography or infographic resources are more motivated and make learning process faster. Forrester Research claims that a minute of online video will equate to about 1.0 million words. Also, the visualized process transmits faster than reading process 60,000 times. (Tsur, Michal, 2014). Facebook also one of social media that participants likely to attended. Participants about 23% study and research lessons through Facebook post or video content. There are multiple Facebook pages that serve specific content that will be useful for student. Also, Facebook video contents are the most source format that participant likely to access.

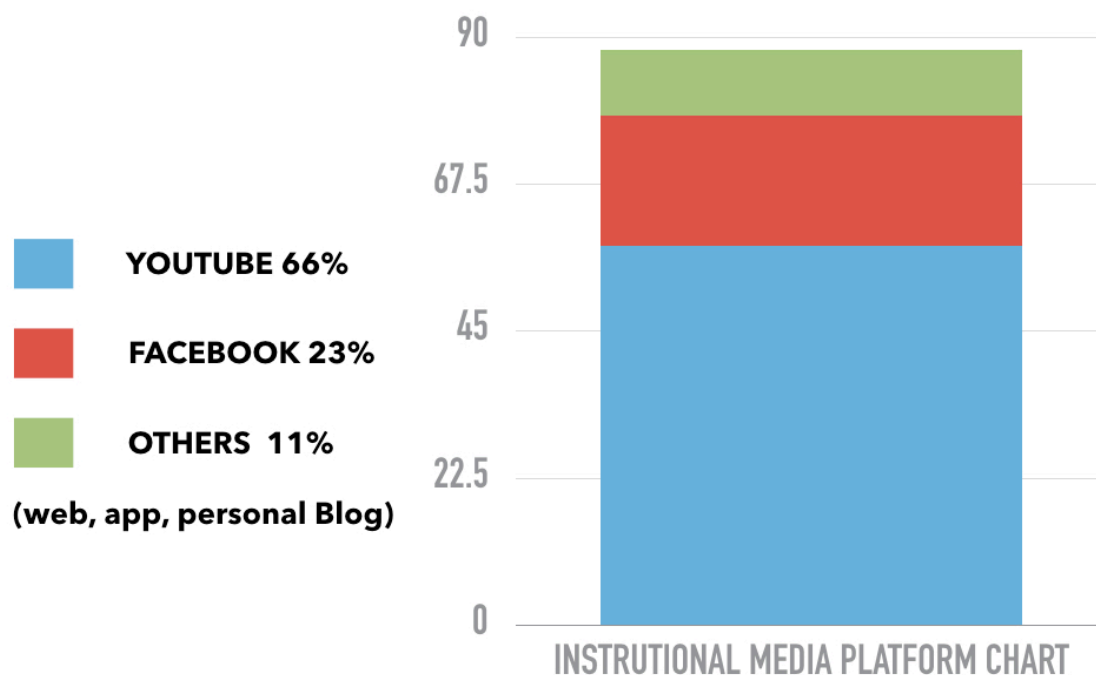


Figure 2: participant Educational Method Selection table

One participant explains that have prepared for the exam theory class. The ways that he prepared is reading concept through infographic on official Facebook post. The infographic represents the informative data along with drawing the relationship. Participant prepared for the theory exam by collecting information from different infographic photos on Facebook post. The infographic content increase students' attention which lead them to get start learning context. The down side of the infographic is mean to show only the relationship of simplistic contents, but it leads to more in-depth available resources which will finally improve particular skill eventually. 11% left still tend to use others source from online resources such as, websites, application, personal blog, or even through games. The reasons that participants study using resources on website or personal blog is for the need of deeper understanding, and instructor assignments. Resources on website are credible and profound, but it is unapproachable. Participants have high chance to not searching for it in the first place. It basically unattractive source. Only one people from the participant lists surprisingly prefer to study the assigned repertoire by using applications. The application collects profound data similar to website or personal blog, but participant said "it is really accessible". Most of music education application are in English. This maybe is one of reason that the application learning platform getting lower percent on the chart. The participant who use the application has really strong background on English study, so that explains why he is comfortable using it.

One parts of the interview is about fundamental analysis. There is only one participant that starts lesson skill sets by online educational resources. About 6 out of 7 participants are building basic fundamental skill by advice from guitar instructor. The

online resources or social media educational method are only need for reviewing or research more knowledge. Participants at the beginning level were not really searching for something really basic or unmotivated, but were looking resources that entertaining or things that increasing their motivation level.

Notes form performance assessment form indicates the following informative data. First, all of participants have mentioned all 5 categories of criterion. The most aspect participants write in common are techniques and tone production. None of participants mentions or says about music interpretation in PAF. "Interpretation is normally last aspect of music that I will think of" one of participants said.

Conclusion

This study is mostly researching about what learning method that 7 music student from Suan Sunandha Rajabhat university uses to accomplish assigned repertoire. The result from the interview is interesting. Each Student start to learn from the instructor most of the time. Teacher or the instructors give them both advise and individual content. Only one student that learn full-time by instructional online resources, and method books. The most visited online resources is YouTube. YouTube is the educational platform that get the highest number of all the lists up to about 66%. The advantage of it is serving video content knowledge. Video content are motivated and make them learn faster. There are many online platforms that provide video content too. Facebook had that features that also represent it through post or specific page. On Facebook, participants prefer to watch video more than reading or learning through Facebook post because brain are taking less power to process. Likewise, video is more exciting and motivating. The other kind of online educational methods are not really attracting student to access because those resources are too specific and difficult to use. It is appropriate only for specific situation.

The data in this research is valuable for the instructor or curriculum developer. The result will indicate that what is the best resources that will get the best out of Thailand 4.0 student.

Moreover, it maybe someday uses in Education business. For example, making educational contents that may sell some Educational course, which is always beneficial for the society. Thailand 4.0 music education research need to be continued. In further research, the prototype of classical guitar method of Thailand 4.0 music student is the topic of study that need to be concerned.

Acknowledgement

Suan Sunandha Rajabhat University
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Administration Factors Affecting Student Development in Thailand 4.0 in Faculty of Fine and Applied Arts, Suan Sunandha Rajabhat University

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

The objectives of this research were to study main idea of Thailand 4.0 for student developments and to study administration factors affecting student development in faculty of Fine and Applied Arts, Suan Sunandha Rajabhat University. This study was qualitative research, collecting data from 5 experts of Thailand 4.0, 15 lecturers of faculty of Fine and Applied Arts, Suan Sunandha Rajabhat University by in-depth interview and analyze data by content analysis. The research results were as follows: 1) The main idea of Thailand 4.0 for student development were the students to have knowledge, skills, perspective and value. Knowledge consist of Basic knowledge (self, family, community, society, language, mathematics), knowledge around the world, Socio-economic situation, Information Technology and the knowledge needed for a career. Skills consist of systematic thinking skills, effective communication skills, pre-planned thinking skills, critical thinking skills, interpersonal skills, the ability to live in society and environmentally safe. Perspectives consist of look the problem around, look at global issues and link them to the local level, understand the problems and forecasts to the future, participate in problems and find solutions to solve problems creatively. The values for a sustainable society are maintaining abundance of resources and ecosystems, socio-economic justice and peace of mind. 2) Administration factors affecting student development in faculty of Fine and Applied Arts, Suan Sunandha Rajabhat University are policy and vision of university and faculty, competency and leadership of dean, curriculum, teacher (technique of teaching, learning activities, ICT/Multi-Media, classroom management) facilities and learning resources.

Keywords: Administration factors, Student development, Thailand 4.0, Faculty of Fine and Applied Arts Suan Sunandha Rajabhat University.

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Introduction

Among the changes of information and technology, technological advances are changing rapidly. The education must adapt to keep up with these changes. Thailand has set a policy to develop Thailand into model Thailand 4.0, That aimed at Thais to break the trap of poverty. "Thailand 4.0" is the vision of Thailand's economic development policy or a model of economic development depend on the mission "stable, prosperous and sustainable" to drive reforms in various system to adjust the direction and the way developing country to prosperity cope with new and rapidly changing threats and opportunities in the 21st century. The need to adjust education for preparing people in the society are necessary in this changing society.

Suan Sunandha Rajabhat University is the one of Rajabhat University has been operating for more than 80 years, producing graduates according to the needs of the society in a wide variety of fields including science and technology, education, humanities and social sciences. industrial Technology Nursing Management, Logistics Management, Fine Arts etc.

Faculty of Fine and Applied Arts is the one of Faculty in Suan Sunandha Rajabhat University that teaches both Fine Arts and Applied Arts. There are more than 40 technical experts in this field, aiming to produce graduates who specialize in Music, Dance and Performing Arts, Painting, Sculpture Design, Communication Arts Design, Fashion Design, Crafts, etc. to create works to society.

Although the science of this faculty are responsive to mental needs, to create happiness in society. Most graduates students create jobs by themselves, but with the way of change that occurs, it is necessary to prepare graduate students to live happily in society, keep up with the changes that occur. For this reason, researchers are interested in studying the factors affecting student development in Thailand in faculty of Fine and Applied Arts, Suan Sunandha Rajabhat University for find a guideline for changing the curriculum and the teaching and learning process so that students are ready to step out into the society confidently and successfully.

Objectives

The objectives of this research were

- 1.To study main idea of Thailand 4.0 for student developments
- 2.To study administration actors affecting student development in faculty of Fine and Applied Arts, Suan Sunandha Rajabhat University

Literature Review

Thailand 4.0

Royal Thai Embassy, Washington D.C (<http://thaiembdc.org/thailand-4-0-2/>) presented that Thailand 4.0 is an economic model that aims to unlock the country from several economic challenges resulting from past economic development models which place emphasis on agriculture (Thailand 1.0), light industry (Thailand 2.0), and advanced industry (Thailand 3.0). These challenges include “a middle income trap”, “an inequality trap”, and “an imbalanced trap”.

Four Objectives of Thailand 4.0

1. **Economic Prosperity:** to create a value-based economy that is driven by innovation, technology and creativity. The model aims to increase Research and Development (“R&D”) expenditure to 4% of GDP, increase economic growth rate to full capacity rate of 5-6% within 5 years, and increase national income per capita from 5,470 USD in 2014 to 15,000 USD by 2032.

2. **Social Well-being:** to create a society that moves forward without leaving anyone behind (inclusive society) through realization of the full potential of all members of society. The goals are to reduce social disparity from 0.465 in 2013 to 0.36 in 2032, completely transform to social welfare system within 20 years and develop at least 20,000 households into “Smart Farmers” within 5 years.

3. **Raising Human Values:** to transform Thais into “Competent human beings in the 21st Century” and “Thais 4.0 in the first world. Measures under Thailand 4.0 will raise Thailand HDI from 0.722 to 0.8 or the top 50 countries within 10 years, ensure that at least 5 Thai universities are ranked amongst the world’s top 100 higher education institution within 20 years.

4. **Environmental Protection:** to become a livable society that possesses an economic system capable of adjusting to climate change and low carbon society. The targets are to develop at least 10 cities into the world’s most livable cities, reduce terrorism risk, and increase the proportion

Five Agendas for Thailand 4.0

Agenda 1: Prepare Thais 4.0 for Thailand becoming a first world nation

Agenda 2: Development of Technology Cluster and Future Industries

Agenda 3: Incubate Entrepreneurs and Develop Networks of Innovation-Driven Enterprise

Agenda 4: Strengthening the Internal Economy through the Mechanisms of 18 Provincial Clusters and 76 Provinces

Agenda 5: Integrating with ASEAN and Connecting Thailand to the Global Community

Thai Education 4.0

Teerakiet

(http://www.moe.go.th/moe/th/news/detail.php?NewsID=46211&Key=news_Teeraki at) Dr. Teerakiat Chareonsetthasil, Deputy Minister of Education gave a special lecture on "Thai Education 4.0 in the context of educational management for sustainable development" at the Teachers Council's Annual Conference on Education, Research and Innovation Sustainable on Sunday 28 August 2019 at Vayupak Convention Centre, Centara Hotels and Resorts Convention Centre.

He talk about preparing for Thailand education to Thailand 4.0, there are many factors to consider, in particular, we have a lot of people in the 1.0, 2.0, 3.0 system, so the change will be one step at a time to be sustainable. For example, the development of education in Singapore, the reform of education began in 1959. The Ministry of

Education of Singapore has set bilingual policy and professional skills for industrial economy. The development of educational capabilities and the establishment of a Thinking School, the main principle of education in Singapore is the use of English as a language of education, the use of science to learn things, the use of mathematics to develop cognitive / cognitive abilities, reasoning, and problem-oriented math curriculum and analytical thinking.

So the country is Thailand 4.0, everything must be planned to build the foundation and the environment. And it requires a lot of patience, because it will take a long time. Especially the innovation in driving the country, we have to come back to see what the production is innovative or just an invention, because innovation is really correct must be able to expand commercially.

For innovative approaches to education that will eventually lead to adoption, it must be admitted that most are at the university level, which is the source of good people. The best way to make children creative is to use a project that uses science and mathematics to address local development, such as solar cell power generation that will make children enjoy finding answers, prefer to study, prefer to practice then submit the contest. This will help to create pride for children.

Suan Sunandha Rajabhat University

Suan Sunandha Rajabhat University is the one of Rajabhat university in Bangkok is located at 1 U-Thong-Nok Road, Dusit District, Bangkok 10300 Thailand. The University campus is of a historic origin that was once a part of Dusit Palace, the Royal Compound of King Rama V. Long before, it served as Royal Garden and the residential compound for his visiting allies, it was named "Suan Sunandha". Suan Sunandha Rajabhat Institute became a University through a University Act signed by His Royal Highness King Rama IX on June 15, 2004.

There are 6 faculties in Suan Sunandha Rajabhat University consist of Faculty of Education, Faculty of Humanities and Social Sciences, Faculty of Science and Technology, Faculty of Management Science, Faculty of Industrial Technology and Faculty of Fine and Applied Arts.

Faculty of Fine and Applied Arts

Faculty of Arts Suan Sunandha Rajabhat University is set up under the Rajabhat University Act 2004, with the development from past to present for more than 30 years, from 1973 to the present.

The establishment of the Faculty of Fine Arts was a great success. With great support and encouragement from former presidents and vice presidents. From the time it was on March 1, 2005 has announced the establishment of the Faculty of Fine Arts in the Rajbhat University. The Faculty of Fine Arts has been officially established in Suan Sunandha Rajabhat University. It is the only one in 38 Rajabhat Universities nationwide, appointed by the University Council.

Now Faculty of Fine and Applied Arts have 7 branches such as Music Department, Thai Dramatic Arts, Performing Arts, Painting, Fashion Design, Creative Product Design and Visual Communication Design

Mission of Faculty of Fine and Applied Arts

1. Develop standards for educational management and production of art graduates that focus on knowledge, to be of high quality and meet the needs of the community and society. To live happily with just enough.
2. Research and development of knowledge in the field of fine arts, arts and local culture. Rattanakosin Art and Culture
3. Academic Services in Fine Arts Local culture And Rattanakosin Culture and Arts to the community and society at the highest level. By engaging with the community. Local and social
4. It is a learning center for conservation. Develop and disseminate local arts, art and culture. Rattanakosin Art and Culture

Student development

To prepare students to keep pace with the changing world, there are 3 important factors that are academic, personal and living in society.

1. Academic: students must study new knowledge, practice the skill, and creativity in their work
2. Personal: students must have personality, expression, presentation and develop system thinking
3. Living in society: students must study the second language, must have human relation, and work like a team

Roles of administrators

Administrators are an important role in supporting instructional activities that help students develop. There are 5 key roles of administrators. The five roles identified are the means by which values direct processes to foster empowerment. In other words, leaders cultivate institutional development, mentors facilitate employee development, managers ensure institutional integrity, deciders provide alignment, and builders expand the capacity of the students, the employees and the organization thus bringing us full circle to a new stage of development. Though differing job descriptions within the administrative structure will emphasize some roles more than others based on the responsibilities, all administrators are expected to have a level of proficiency in each of the distinct roles. (Rose Ann Findle, Carol Holmes, 2018)

1. Leaders Cultivate Institutional Development

Administrators are expected to set the direction for the institution as a whole or for their department as they align their work with that of the institution. In order to develop a vision that is grounded in that which can be projected about the future, this role requires strong skills in environmental scanning, listening to critical stakeholders, anticipating future conditions, and providing a mental model, that others find compelling.

2. Mentors Facilitate Employee Development

In knowledge and talent rich organizations, a key role of an administrator is to mobilize individual commitment of other employees via a mentoring relationship that requires a mindset of servant-leader. According to Greenleaf (2002), servant leadership implies that leaders primarily lead by serving others: employees, customers, and the community. Such service is realized through mentoring relationships that require good listening, honesty, empathy, and encouragement while challenging performance. Mentors set high standards of performance and provide ongoing assessment that leads to the professional and personal growth of the mentee. Mentors provide a strong perspective, are professionally accessible to share relevant experiences and are willing to take significant risks to support the right type of advocacy for the mentee.

3. Managers Ensure Institutional Integrity

Administrators strive to do things right themselves and assure that those responsible to them do so as well. Skills are applied to those things that require controls. there are three categories of things needing control: money (costs, information, and time), structure (systems, processes, and inventory), and physical resources (facilities and tools). Application of these skills in an effective and efficient manner leads to an institution's integrity, as there is evidence of responsible functioning.

4. Deciders Provide Alignment

Good administrators have a solid understanding In an increasingly complex environment, often fraught with competing stakeholder priorities, and usually compounded by limited resources, the ability to make sound decisions is crucial. If the course has been set through the visioning process and strategic planning, it is essential that decisions are made that result in alignment with priorities.

5. Builders Expand Capacity

The two skill sets most important to building both human and organizational capacity are those that pertain to the ability to be a good team member, and having the expertise and generosity of spirit to serve as consultant. Clearly most work cannot be done alone. Team membership has routinely come to be seen as one of the core competencies for graduates.

Objectives

The objective of this study were

1. To study main idea of Thailand 4.0 for student developments
2. To study administration factors affecting student development in faculty of Fine and Applied Arts, Suan Sunandha Rajabhat University

Methodology

This study was qualitative research. The tools used to collect data were interview forms. There are two groups of data collection, the first were 5 experts of Thailand 4.0 who studied and understood about Thailand 4.0 well and the second were 15 lecturers of faculty of Fine and Applied Arts, Suan Sunandha Rajabhat University who worked here more than 5 years and analyze data by content analysis.

Results

From agenda 1 to prepare Thais 4.0 for Thailand becoming a first world nation, it is the most important element in the development of Thailand 4.0 is Thai people to transform Thais into more competent human beings in the 21st century and develop Thais 4.0 as first world citizens through reform education system to prepare Thais for Thailand becoming a first world nation by transforming learning ecosystem to purposeful learning, generative learning, mindful learning, and result-based learning. These shifts will lead to changes in goals and administration of the education system, teachers' skills and teaching paradigm, curriculum and teaching/learning methods.

The idea of Thailand 4.0 for student developments, after changing about teachers' skills and teaching paradigm, curriculum and teaching/learning methods, students were developed in 4 parts : knowledge, skills, perspective and value.

First, about knowledge, the students must learn basic knowledge, such as self, family, community, society, language, mathematics. More than that the students must knew about knowledge around the world, Socio-economic situation InformationTechnology and special knowledge needed for a career. That is very important in the changing world especially in Thailand 4.0.

Second, skills are important too. The students must practice systematic thinking skills, effective communication skills, pre-planned thinking skills, critical thinking skills, interpersonal skills, the ability to live in society and environmentally safe.

Third is Perspectives consist of look the problem around, look at global issues and link them to the local level, understand the problems and forecasts to the future, participate in problems, and find solutions to solve problems creatively.

The last is values for a sustainable society are maintaining abundance of resources and ecosystems, socio-economic justice and peace of mind.

Administration factors affecting student development in faculty of Fine and Applied Arts, Suan Sunandha Rajabhat University are

1. Policy and Vision of university and faculty must be supported the government aims to develop the country in the direction of Thailand 4.0.
2. The competency and leadership of dean, dean must have leadership in the changing world and the ability to adapt proactively abreast of the situation. Dean must know about financial management, resource development, strategic planning, building human capacity, assessment, team building, coaching and external relations.
3. Curriculum need to be adapted to the current world situation. Teachers need advanced teaching techniques. This is a great way for students to learn quickly. Innovative in teaching and learning activity must change using ICT/Multi-Media in class. Including encouraging students to learn from direct experience. It is a way to develop students to learn new innovations for the results in rapid adaptation to the changes.
4. Modern learning resources, both government and private sectors, the students need to have the opportunity to experience direct occupation. It will help the students to enter the changing society happily.

Conclusion

The student development must have knowledge, skills, perspective and value. Knowledge consist of Basic knowledge, knowledge around the world, Socio-economic situation, information technology and the knowledge needed for a career. Skills consist of systematic thinking skills, effective communication skills, pre-planned thinking skills, critical thinking skills, interpersonal skills, the ability to live in society and environmentally safe. Perspectives consist of look the problem around, look at global issues and link them to the local level, understand the problems and forecasts to the future, participate in problems and find solutions to solve problems creatively. The values for a sustainable society are maintaining abundance of resources and ecosystems, socio-economic justice and peace of mind. Administration factors affecting student development in faculty of Fine and Applied Arts, Suan Sunandha Rajabhat University are policy and vision of university and faculty, competency and leadership of dean, curriculum, teacher, facilities and learning resources.

Acknowledgements

The research was conducted under the policy of Suan Sunandha Rajabhat University. The researcher would like to thanks to thanks Suan Sunandha Rajabhat University, the Music Department, the Educational Administration Department and more importantly, Assoc. Prof. Dr. Saieewan Dubpavasu and all of faculty members of the departments.

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Music Curriculum Supporting Music Occupation for Music Students of Suan Sunandha Rajabhat University in Thailand 4.0

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

The objective of this qualitative research was to study music occupation for music students in Thailand 4.0 and study music curriculum that support music occupation for music students in Thailand 4.0. The data were collected from interviews with university music teacher, musician and the person who are knowledgeable about Thailand 4.0 total of 15 persons and analyze data by content analysis. The research found that music occupation for music student in Thailand 4.0 is a musician who is knowledgeable about the use of technology to create the sound effect, create music by used the technology, being a musician back up, repair music instrument and music teacher. Music curriculum that support music occupation is the program allows students to create their own work, the subject that related to technology, sound engineering and music computer. The subject should be a set of knowledge that give students the freedom to study by interest and don't need to register for degree. The course is a training course and the students will be able to collect a set of subjects for their degree to avoid the loss of education.

Keywords: Music curriculum, Music occupation, Suan Sunandha Rajabhat University, Thailand 4.0

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Introduction

From the Government policy that develop country in the direction of Thailand 4.0. It is a meaningful as a policy vision that change old style of economic to economy that powered by innovative and change the process of country development by industrial to technology and creative. For example, agricultural will change from traditional to modern agricultural. The modern agriculture focuses on management and using the technology. Other than that, the modern agriculture has changing from the old service that have a relatively low value to the service that have a relatively high value and developing workers that have less skill to the worker that have knowledge and high skill. The model of Thailand 4.0 pursues Security, Prosperity and Sustainability.

Policy implementation Thailand 4.0 will impact on the education in the country. Education in Thailand 4.0 have a guide to creating students have the knowledge, ability and skill to application to access the technology and innovation. Improve student idea to high level. Improving student must improve by problem-based learning that is the best learning skill.

Education development under the frame of Thailand 4.0. Start by practicing the student to learn by themselves. The teacher changes from the teacher who focuses on teaching to be a coach who give the advice for the student when they have a problem. The instruction of integrated, associate knowledge with imagination and create skill that must to be, for example, working together, group working, creative thinking and good communication. Education in Thailand 4.0, student will find the knowledge by themselves from teaching materials in the from of media and digital. Focus on students have skill in searching and using information technology because the current time have many data, student must have ability to search and verify the accuracy data. Concluded that education in Thailand 4.0 will be a learning system that teach the student can bring the knowledge to the creative integration to develop innovation for support the social needs.

Music learning in Music Department in Suan Sunandha Rajabhat University develop from past and present. Begin ay B.E. 2516 to present. Music Department is a branch of Faculty of Fine and Applied Arts, Suan Sunandha Rajabhat University.

The Philosophy of Faculty of Fine and Applied Arts is Great work, Glorious Virtue and Take the Academic.

The Vision of Faculty of Fine and Applied Arts is a center of lifelong learning in the field of fine art and morality.

The mission of Faculty of Fine and Applied Arts have 4 missions consist of

1. Develop standards for educational management and production of art graduates that focus on knowledge, to be of high quality and meet the needs of the community and society. To live happily with just enough.
2. Research and development of knowledge in the field of fine arts, arts and local culture. Rattanakosin Art and Culture.

3. Academic services in Fine Art Local Culture and Rattanakosin Culture and Arts to the community and society at the highest level. By engaging with the community local and social.

4. It is a learning center for conservation. Develop and disseminate local arts, art and culture. Rattanakosin Art and Culture

The Faculty identity is an academic, expert in communication, proficient in thinking, have a great deal of public mind. The faculty uniqueness is a center for Fine Arts and Applied Arts.

Objective

1. To study music occupation for music students in Thailand 4.0
2. To study music curriculum that support music occupation for music students in Thailand 4.0

Methodology

This research is a qualitative research by using documentary research from analyze music curriculum, analyze the detail about Thailand 4.0 and in-depth interview 15 persons who teach music in the university, musician and expert person about Thailand 4.0

Results and Discussion

Music occupation for music student in Thailand 4.0 contains 4 careers

1. Musician knowledge about use of technology

Because of in the future when Thailand stepped into Thailand 4.0 system working or lifestyle have technology to get involve more

2. Musician who have a good skill in music

Because of in Thailand 4.0, a high level of skill in the field of work for develop the working that successful as the target.

3. Repair music instrument

The repair music instrument has long time but in Thailand 4.0, repair music instrument must change from the old style of repair to the new style that have high value. For example, change from repair the instrument that out of order or broken to modified the instrument that make instrument more efficiency that must use skill to make it more that make high value of the instrument.

4. Music Teacher

Music teacher must to change from the teacher who focuses on teaching to be a coach who give the advice for the student when they have a problem. The instruction of integrated, associate knowledge with imagination and create skill that must to be, for example, working together, group working, creative thinking and good communication.

Music curriculum that support music occupation contains of 3 groups

1. The Subject about Technology
2. The Subject about Sound Engineer
3. The subject about Music Computer

From the above that talking about Thailand 4.0. Showing about the technology more important in the future and the education curriculum must to improve the subject that use the technology more too.

Conclusion

The important thing that the interviewee mentions is in English. Because of If a student has English proficiency, it will strengthen more skills, as well as to develop many different skills. It may sometimes be in English if a student can understand that content can improve its skills. As well as having the opportunity to have been chosen to work more than those with less language capabilities.

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***The Role of Technology in Improving the Teaching and Learning Process at
Tadulako University, Indonesia***

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

The use of technology in language teaching is rapidly growing. Therefore, this study attempted to explore an in-depth analysis of the integration of technology in the classroom and its impact on student achievement. It applied the mixed-method which employed questionnaire for both teachers and students, and the interview. The questionnaire of teachers intended to find out their perception on technology involvement in the process of teaching and learning while questionnaire for students intended to analyze their opinion regarding the integration of technology in the classroom and the its impact on their learning achievement. Besides, this research employed semi-structured interview to confirm data on the questionnaire. The data have been analyzed descriptively. The results found that the effect of innovation demonstrates most intense when concentrated on particular, quantifiable instructive destinations, for example, enhanced literacy. In addition, understudies exhibit larger amounts of inspiration and commitment when utilizing innovation, which too adds to enhanced achievement. Trends in the classroom have gone from overhead projectors to creative projects, for example, PowerPoint and whiteboards. Those findings will contribute much information and references to the teachers, practitioners, and researchers themselves in involving technology in their classroom.

Keywords: Educational Technology, technology integration, ICT

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Introduction

In the era of globalized technological advances that have affected all aspects of human life, such in the fields of economics, politics, culture, art and even in the field of education, so that aspects of education must carry out positive innovations for the advancement of education at the university and school level, not only the innovation in the field of curriculum, infrastructure and facilities, but also comprehensive innovation by using information technology in teaching and learning activities (Suriaman, 2015)

The use of technology in education can change conventional learning to become unconventional. In the framework of Innovative University, universities must respond to the development of an increasingly sophisticated world of technology that provides a myriad of new and old knowledge. Learning at the university needs to use a series of electronic equipment that is able to work more effectively and efficiently. Even so, the role of the lecturer is still needed in the classroom; he is a designer, motivator, mentor, who of course as an individual must be respected (Salikin & Bin-Tahir, 2017).

Information and communication technology (ICT) is a necessity towards "Innovative University" because using ICT is expected to improve the quality of teaching and learning, increase productivity, efficiency and access, increase positive learning attitudes, professional development, and increase profile. These five things are both expectations and needs that form the basis of the need for the application of ICT at the University. Thus, it is expected that the university will experience changes that are in line with global demands but remain in line with its vision and mission which are correlated with the needs of the community and graduates.

Some of the previous studies recommended the use of technology in the language teaching and learning. Ranti (2013) ICT-based learning can enhance the students' learning achievement. It is in line with the Andikaningrum et al., (2014) statement that multimedia of e-book based learning can motivate the students' activity and achievement in learning. Besides, Tahir (2015) suggested the use of social media that is Yahoo Messenger as a media of teaching and Tahir & Aminah (2014) argued that Facebook is effective to increase the students' activeness in joining the teaching and learning process and also improve the students' learning achievement.

Based on the background, the researchers conducted a research concerning how to explore the appropriate of the ICT to be used in English learning. This study hopefully contribute to the recent use of ICT in learning as the information and reference for the lecturers, further researchers, and the researchers themselves to implement the media in teaching

Review of Literature

Many experts defined the technology in education. According to Simon (1983), technology is a rational discipline designed to ensure mastery and scientific application. According to Paul Saetiles in Andri,(2017), technology in addition to leading to machinery, technology includes processes, systems, management and mechanisms for human and non-human control. Understanding Educational

Technology Twentieth century includes the first projector's slide lantern, then the radio and then the live image. Whereas the 19th century down to fifteen shows that more technologies interpreted as whiteboards and books.

According to Davies (1978) in Hartley (2016) there are three kinds of educational technology, namely:

- a. Educational technology one refers to hardware such as projectors, laboratories, computers (CD ROM, LCD, TV, video and other electronic devices). This mechanical technology can automate the teaching and learning process with tools that transmit, amplify sound, distribute, record and reproduce material stimuli that reach a large number of listeners/students. So this one technology is effective and efficient.
- b. Educational technology two refers to "software" which emphasizes the importance of assistance to teaching. Especially in the curriculum, in instructional development, teaching methodology, and evaluation. So technology two provides the need to design a new or update the present, useful in learning experience Machines and mechanisms are seen as presentation or transmission instruments.
- c. Educational technology three, namely a combination of two technology approaches, namely "hardware and software". Technology education three, its main orientation is towards the system approach, and as a tool to increase the benefits of what is around. Educational technology three can be said to be a problem-solving approach, the emphasis is on an attractive diagnostic orientation. Of the three types of technology above, it can be said that educational technology in the real context is not only referring to hardware as it is commonly used as a true perception, but also includes software and a combination of both hardware and software.

Educational Technology as a tool to support the construction of knowledge: a) to represent students' ideas of understanding and trust, b) To organize production, multi-media as the basis of students' knowledge. Educational technology as a means of information to investigate knowledge that supports students: a) To access the information needed. b) For a comparison of perspectives, beliefs and world views. Educational technology is social media to support learning by speaking. a) To collaborate with others. b) To discuss, argue and build consensus between social members. Educational technology is an intellectual partner to support students. To help students articulate and present what they know. Educational technology can improve the quality of education. Educational technology can improve the effectiveness and efficiency of the teaching and learning process. Educational technology can facilitate achieving educational goals.

While the drawbacks of technology in education are; Teachers who cannot operate/control electronics will be left behind by students. Educational technology requires quality human resources to accelerate school innovation, while reality is lacking. Educational technology, both hardware and software requires expensive costs. Limitations of school infrastructure facilities will hamper educational innovation. The use of educational technology in the form of Hardware requires high control from teachers or parents, especially the internet and software. Students who do not have high motivation tend to fail.

Method

This study applied the mixed-method design that is combined both the quantitative and qualitative data. Mixed-method is an approach that combines or associates quantitative forms and qualitative forms. Mixed methods research is a research method that involves the use of two methods, namely quantitative research methods and qualitative methods in a single study or one study. This type of research is more complex when compared to other studies, not just collecting and analyzing two types of data, but also involves the functions of quantitative research and qualitative research so that overall is greater than the two studies. The use of these two research methods is considered to be more able to provide a more complete understanding of research issues or problems than the use of one of the research methods in between (Creswell, 2010).

The subjects of the study were ten lecturers and 159 students of Tadulako University, Indonesia which been selected randomly. The questionnaire used to collect the quantitative data while the interview employed to gain the qualitative data. The quantitative data have been analyzed using SPSS program and the qualitative data have been analyzed descriptively.

Results and Discussion

Data from the questionnaire of the lecturers' perception toward the use of technology in learning were then presented in a percentage. The percentage of the lecturers' perception scores can be seen in table 1 below.

Table 1 The Perceptions of Lecturer on the Importance of the ICT in teaching and learning

Classification	The Percentage of			
	Teaching Media	ICT	Internet	Blended Learning
1	2	3	4	5
Unimportant	0	0	0	0
Less Important	0	0	0	0
Important	3.7	31.4	37.1	2.5
Very Important	96.3	68.6	62.9	97.5
Total	100	100	100	100

Column 2 of the table 1 indicates that the lecturers in Tadulako University perceived that the teaching media is very important. The column 2 of the table clearly shows that more than 95% of the respondents stated that teaching media was very important. While there were only 3.7% of the respondent stated that the teaching media was important. There were none of the respondent either stated the unimportant or the less important of this dimension.

Column 3 of table 1 above shows the perception of lecturers towards the important of the ICT in teaching. Based on this column, it can be seen that the use of the ICT was also perceived as being very essential. Even though the percentage the respondents who stated that the ICT was very important was not as many as in teaching media, but still 68.6% of respondents who stated was the majority (more than two-third) of the

respondents. There were 31.4% of respondents who stated that the ICT was important and no respondents stated that this technology was neither unimportant nor less important.

Column 4 of table 1 shows the perception of lecturers toward the importance of the internet in teaching. Based on the column 4, it can be said that the internet was perceived as being very decisive. As there were 62.9% of the respondents affirmed that the use of internet in teaching was very important, while 37.1% of the respondents affirmed that the dimension of internet was important, and neither of the respondent affirmed that this dimension was unimportant nor less important.

Column 5 of table 1 indicates the perception of lecturers toward the importance of the Blended learning in teaching. Based on this column, it can be stated that the blended learning was perceived as being very vital. It was almost the entire respondents (97.5%) perceived that the dimension of the blended learning was very important and there were only a few (2.5%) of respondents perceived that the blended learning was important. None of the respondent either stated that the dimension was unimportant or less important.

Data from the questionnaire were then presented in percentage. The percentage score of the students' perception towards the use of ICT in teaching and learning can be seen in table 2 below.

Table 2 The Percentage of the Students' Perception towards the use of Technology teaching and learning

Classification	The Percentage of			
	Poor	Fair	Good	Excellent
1	2	3	4	5
Teaching media	0	43.51	56.49	0
ICT	0.43	51.73	47.84	0
Internet	0.3	66.9	32.8	0
Blended Learning	0	87.42	12.58	0
Total	0.73	249.56	149.71	0
Divided by	400	400	400	0
Timed by	100	100	100	0
The Percentage of the respondents	0.19	62.39	37.42	0

Table 2 indicates the percentage of the students' perception towards the use of technology in teaching. From the table, it can be seen that the use of technology in teaching in Tadulako University was fair. There were no respondent perceived that the use of technology was Excellent. The majority of the respondents (62.39%) claimed that the technology was fair, while 37.42% of the respondents claimed that the use of technology was good and only 0.19% of the respondents perceived that the use of technology were poor. It indicates that the use of technology such the teaching media, ICT, internet, and blended learning were important to use in teaching and learning. It is suggested by the interview to both lecturers and students who confirmed that the use of technology is urgent to apply in teaching and learning.

The results show that the use of technology in education can change conventional learning to become unconventional. In the framework of Innovative University, universities must respond to the development of an increasingly sophisticated world of technology that provides a myriad of new and old knowledge. Learning at the university needs to use a series of electronic equipment that is able to work more effectively and efficiently. Even so, the role of the lecturer is still needed in the classroom; he or she is a designer, motivator, mentor, who of course as an individual must be respected (Salikin & Bin-Tahir, 2017).

Conclusion

The lecturers and students of Tadulako University have positive perception towards the important of the technology such as teaching media, ICT, internet and blended learning in teaching and learning. Thus, the role of the lecturer is still needed in the classroom; he is a designer, motivator, and mentor which can improve the teaching and learning process with positive and high perception.

The results also found that the effect of innovation demonstrates most intense when concentrated on particular, quantifiable instructive destinations. In addition, understudies exhibit larger amounts of inspiration and commitment when utilizing innovation, which too adds to enhanced achievement. Trends in the classroom have gone from overhead projectors to creative projects, for example, Power Point, video, internet, and blended learning. Those findings will contribute much information and references to the teachers, practitioners, and researchers themselves in involving technology in their classroom.

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'I am a Mercenary Now' International Teachers as a Global Educational Precariat?

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

International teachers still remain an under-researched group in the field of international education (Bailey, 2015; Bunnell, 2016). However, recent studies (Baily, 2015; Burke, 2015; Cavendish, 2011; Poole, 2017, 2018; Savva, 2015, 2017) have started to focus on international teachers' cross-cultural teaching experiences. Rather than focusing on seemingly fixed characteristics, these studies show how teachers' experiences play a significant role in the construction of their professional identities in cross-cultural contexts. As part of this turn to the international teacher, Bunnell (2016) has proposed that international teachers should be understood as part of an international educational precariat, a term initially proposed by Guy Standing (2011). The purpose of this study is to substantiate Bunnell's thesis that international teachers are emerging as an educational precariat. It draws upon interview data from a larger study which explored the construction of international teacher identity in a Chinese bilingual school in Shanghai. In so doing, I build on Bunnell's work by offering empirical data to substantiate his claim, but also extend it by questioning the extent to which all international teachers can be said to be a part of a global educational precariat.

Keywords: International teachers; international education precariat; the precariat; China

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Introduction

International teachers still remain an under-researched group in the field of international education (Bailey, 2015; Bunnell, 2016). They have typically been defined from a personal perspective (Garton, 2000) or in terms of fixed character traits (Hardman, 2001). However, recent studies (Baily, 2015; Blyth, 2017; Burke, 2015; Cavendish, 2011; Poole, 2017, 2018; Savva, 2015, 2017) have highlighted the complexity of international teachers' lives. Rather than focusing on seemingly fixed characteristics, these studies show how teachers' experiences play a significant role in the construction of their professional identities in cross-cultural contexts. As part of this turn to the international teacher, Bunnell (2016, 2017) has proposed that international teachers should be understood as part of an international educational precariat, a term initially proposed by Guy Standing (2011).

This paper builds on Bunnell's international education precariat thesis (Bunnell, 2016) by utilising interview data from my doctoral research into international teachers' experiences in China. This paper also extends Bunnell's thesis by showing that international teachers do not necessarily form a class in and of themselves, but rather can be said to be in a state of precarity. In so doing, this paper addresses the paucity of studies on international teachers by offering an insight into three teachers' lives and their reasons for becoming international teachers and their experiences of working in international schools.

Literature review

The international education sector has seen a shift from an interpretation of international education as idealistic in nature to a post-idealistic phase, in which international education is understood as an industry, with stakeholders participating in it for pragmatic reasons (Brummitt and Keeling, 2013; Bunnell, 2014). As part of this turn, Bunnell (2016) has argued that international teachers should be seen as part of an emerging global class – an international teacher education precariat.

The precariat has been defined as class of individuals who find themselves without an 'anchor of stability' (Standing, 2011). This stability is said to be met in seven forms of labour related security, which include: labour market security, employment security, job security, work security, skill reproduction security, income security, and representation security. Members of the precariat occupy the margins of citizenship as 'urban nomads' or 'denizens' (Bunnell, 2016; Standing, 2011). Whilst full citizens have access to civil (equality before the law), cultural (entitlement to participate in the cultural life of the community), social (access to pension and health care), economic (equal entitlement to undertake income-earning activity) and political (equal right to vote) rights, the *denizen* is someone who has a more limited range of rights than citizens. Although anyone could potentially 'fall' into the precariat due to unforeseen economic reasons or even through choice, certain groups are more susceptible to precarity than others due to their marginal status. These groups include refugee and asylum seekers, illegal migrants, temporary and seasonal migrants, and long-term migrants (Standing, 2011). Based on the findings of this paper, international teachers can be said to belong to the latter group, long-term migrants.

Bunnell (2016) has extended Standing's thesis beyond the temporary or seasonal worker who typically characterise the precariat, by proposing that the growing numbers of teachers who choose to teach internationally are increasingly forming a sub-grouping of the precariat. Whilst international teaching does have its positive side, it is also characterised by a darker, more precarious reality (Halicioglu, 2015). In order to illustrate this thesis, Bunnell offers anecdotal evidence from analysis of anonymous postings on message boards, such as *internationalschoolsreview.com* (*ISR.com*), that highlights destructive leadership, nepotism and passport retention as recent evidence of an increasingly precarious international school workplace. He also draws upon real-life incidents, such as a Tibetan-Buddhist Chemistry teacher who was dismissed from his job for purportedly insulting Islam, in order to substantiate his thesis that international teachers are a sub-group of the precariat due to 'employment instability.' Recent practitioner-focused works (Blyth, 2017; Savva, 2015) also provide evidence to strengthen Bunnell's thesis. Blyth's autoethnography, for example, explores 'the teacher's position in an international school as subordinate and how [the teacher] is wronged on three counts; epistemically for being wrongfully mistrusted, ethically for being wrongfully excluded and ontologically for being wrongfully positioned as a lesser human being' (p.xv). My own doctoral research has also highlighted the 'darker' side of international education, such as the marginalisation of international teachers' identities, unfair dismissal, and a paucity of professional development and orientation for teaching internationally, all of which impact negatively on teachers' well-being and sense of self as a professional educator.

The increasing presence of precarity in the international education sector can be attributed to the transitory and transnational nature of international schools (Hayden, 2011). To quote Bunnell (2016), the notion of a transnational space 'implies that such institutions are often outside the national system yet at the same time nor do they operate within any discernible or organised international system' (p. 544). One colleague once summarised this situation more laconically as 'the wild west of international education'. Whilst the anecdotal and real-life evidence that forms part of Bunnell's argument does not prove conclusively that international teachers are part of an educational precariat, it certainly indicates that the subject warrants further investigation. Hence the point of this paper – to give credence to Bunnell's argument.

Methods

Semi-structured interviews were selected as the most appropriate method for eliciting data about how the participants articulated their experiences as international teachers. In contrast to quantitative forms of data collection, such as questionnaires, experiments, and surveys, interviews provide a level of depth and complexity that can allow researchers to gain access to respondents' inner worlds so they can experience the world as they do (Silverman, 2017). Interviews can also generate 'thick description' (Geertz, 1973) which can make participants' inner worlds more vivid for the researcher.

The participants were interviewed separately on two occasions, with interviews lasting between sixty to ninety minutes. All interviews were recorded on *Garage Band* (recording software) and later transcribed incorporating aspects of conversational analysis, such as paralinguistic features. Interview questions did not directly use the terms 'precariat' or 'precarity' but focused instead on eliciting rich

data about the participants' experiences of being international teachers in China. Interview data were analysed using a framework that synthesised Standing's (2011) and Bunnell's (2016) definitions of the precariat. Based on the literature review above, being a part of an international teacher education precariat creates:

- Uncertainty which can lead to a decline in psychological well-being;
- Limited or no representation in labour disputes;
- Limited opportunities to find employment in passport country which leads to teachers becoming global exiles;
- Liminal citizenry in the form of the denizen.

The framework was employed in order to initially identify narrative chunks that contained experiences of precarity. Once identified, the narratives were analysed using discourse analysis in order to bring into focus how the participants constructed their experiences of precarity.

Research context and participants

Participants were selected from two *Type C non-traditional international schools* in Shanghai China, with whom the author was affiliated. In the Chinese context, these types of schools, which are also referred to as 'internationalised schools' or 'bilingual schools' are often predominantly national, in that most of the curriculum is focused on delivering the National Curriculum with an international curriculum reserved for the final 3-4 years of high school (Poole, 2018). The first, WEST, was a recently opened for-profit bilingual school that claimed to offer an 'internationalised' curriculum that combined aspects of 'Chinese' and 'Western' approaches to learning. However, in practice the curriculum was blocked-out rather than integrated. For example, students, who were primarily host country nationals, followed the Chinese compulsory national curriculum during middle school and then transitioned to an international curriculum in the form of the IGCSE (International General Certificate of Secondary Education) and IBDP (International Baccalaureate Diploma Programme). Although the school had only been in operation for three years at the time of this study, it had expanded to include a second campus, and appeared to be increasing in prestige. However, the interview data indicated that the school had trouble in retaining expatriate teaching staff, due to a lack of transparency and a perceived inequality in hiring and remuneration procedures.

The second school, SOUTH, was a non-profit school that also catered primarily to host country nationals, although at the time of this study the school was pushing to recruit more 'international' students. The school was well-funded and resourced, and recently expanded to include a third campus. SOUTH adopted a more integrative approach to combining Chinese and Western education by offering the IGCSE and the IBDP alongside aspects of the Chinese national curriculum. Staff turnover was relatively low compared to WEST, with the interview data clearly indicating that teachers were generally content with their contracts and work-loads.

Findings

Tyron: 'I am a mercenary now'

Before becoming an international teacher, Tyron worked in the military police in South Africa as a physical therapist. It was during this time that he completed a Masters degree and a PhD in sport's science. After retiring from the police, he became a part-time teacher, and later pursued a post-doctorate position in Canada. Unable to find employment in his home country due to the complex sociopolitical consequences of Apartheid, such as labour laws like Affirmative Action, Tyron became '*unemployable in my own country*' which forced him into the global precariat – that is, into a state of permanent exile and uncertainty as an economic global migrant. In Tyron's own words:

I was actually immigrating to Canada, but that did not work out. I came to China because of practical reasons. I came because I had no work. And now I've been doing this for the last three years. And somebody would tell me 'it's kind of funny Tyron that you would go almost around the world to go to find a job' because I went to Canada from South Africa and then Canada to China.

Tyron laconically and prosaically states that '*I had no work*' whilst '*I had to do it*' conveys a sense of disempowerment and helplessness. The more utopian dream of becoming an academic and making a better life for himself and his family in Canada are replaced with a grittier and more pragmatic reality of having to find a job and continue making money in order to support his wife and three sons in South Africa.

After working in Tianjin for a year, Tyron moved to WEST, initially attracted by the prospect of helping to '*start this school from scratch*':

I wasn't very happy with Tianjin. And then I got this phone call from the WEST people telling me that they need a PE teacher and would I be interested in coming for an interview. It just sounded like Shanghai was going to be a lot more fun and a lot more modern so that's when I did the interview and they told me a week later that I got the job. I was pretty chuffed about it.

However, Tyron's initial enthusiasm soon turned to frustration. For example, he struggled to reconcile his beliefs about international education (as embodied in the attributes of the learner profile), with the demands of WEST's principal to construct a Chinese curriculum '*with a touch of international in it*'. This was partly due to the hierarchical structure of WEST, where instructions were issued like communiques with little or no explanation or justification – as Robert explained, '*there was this very strict pecking order*'. However, another issue was the fact that Tyron and Robert were precluded from understanding the organisational culture of WEST as a Chinese *Type C non-traditional international school* due to an unwillingness or unfamiliarity with Chinese culture and language. Data from a larger study found that another expatriate teacher, Sophie, had a more positive experience of working at WEST due to her ability, and willingness, to learn Chinese and understand Chinese culture. This suggests that cultural dissonance can lead to a loss of psychological well-being, thereby leading to a state of emotional precarity.

Tyron's narrative also highlights how being a global exile profoundly changed his teacher identity:

I sometimes feel like I'm a mercenary now, like a mercenary soldier. Whoever pays me well, I will go there. It doesn't matter where. I mean, I will go to Katmandu and Tibet or wherever. If they pay well, I will go there. I will go to Antarctica! That's how I see myself now.

The word 'now' functions as an adverb of time underscoring the extent to which Tyron's identity has changed in just over a year. In contrast to the more positive tone of the interview data collected at the beginning of his time at WEST, Tyron now presents himself as a '*mercenary*' as a way to underscore the lengths to which he will go in order to survive and provide for his family. The image of the globe-trotting international teacher is thrown into stark relief; while teaching overseas can be exciting for some, for others it can also be precarious and uncertain in nature. Recalling Standing's (2011) notion of the precariat, Tyron's existence as an international teacher is imposed rather than chosen, thereby leading to a loss of self-efficacy and agency.

Nora: 'You are just a visitor when you come home'

In contrast to Tyron, who became international teachers out of economic necessity, Nora chose to become an international teacher, having spent the best part of her teaching career in international schools outside of her passport country, the USA.

Nora's narrative repeatedly focuses on the ambivalent nature of international teaching, highlighting the advantages and disadvantages of an extended sojourn abroad, which runs like a *leit motif* through her narrative. Echoing Tyron and Robert's narratives, Nora initially felt excited to work at SOUTH, which she considered to be a relatively 'good' school due to its CIS accreditation. However, her initial enthusiasm had started to sour a year into her two-year contract:

You know, when I first came here, they sold me on it was new. That can be exciting too. But it didn't really feel like that when I actually got here. It didn't feel like I was involved or asked to contribute my experience from my last school. So it's just kind of a disconnect between what they sometimes say but what actually happens.

The verb 'sold' implies that Nora feels duped by the school, echoing Robert's narrative. Meanwhile, 'disconnect' accentuates the gap between what Nora expected SOUTH to be like and the reality she found. Her extensive international teaching experience and perception of the school as CIS accredited engendered certain expectations that resonated with her identity as an experienced teacher, but the school failed to live up to her expectations as it did not harness or valorise her experiences, thereby leading to the negation of her professional identity as an educator. The tension between idealism and reality also mirrors the changing nature of the international education landscape, which has rapidly changed from an idealistic to post-idealistic, where education as a passport to a top university is increasingly of more significance than making the world 'a better place' by promoting greater tolerance through intercultural understanding. Nora continued by explaining that:

As an international school teacher, you want to feel invested in where you are working. And you feel that if you have something to contribute and you're not given an opportunity to do that you want to start thinking about moving on.

Nora refers to herself as an 'international school teacher', signaling that the 'international' aspect of being a teacher is a fundamental part of her identity as an educator. The school's decision not to draw upon Nora's experiences results in her contemplating breaking her contract, perhaps in order to find a school that valorises her identity as an experienced international educator. However, the prospect of moving on to a new school and the security of being able to do that is also empowering:

But there is that certainty of 'I know I can find a job – I have enough qualifications and if I wait long enough I'll probably find a pretty good job. But you can't, you know, go playing games of looking for a job. At some point, you just need to decide I'm going to take a job. Here's the date: whatever month and whatever and I just need to have a decision made because there is all that paperwork and everything that goes into moving.

While high mobility is empowering, it is also precarious in nature. Nora also touches upon how being an international teacher 'on the circuit' has affected her sense of identity:

You still have your original citizenship, but you become further and further from that where you are just a visitor when you come home. And you can't fully adapt to another culture unless you just stayed there and learned everything about it and maybe married and entered into the society. But you are always going to be someone on the outskirts of what's going on.

The narrative chunk conveys a strong sense of liminality or permanent in-betweenness: Nora has yet to adapt to the local culture, but at the same time she also feels increasingly alienated from her passport country. The phrase '*you become further and further*' suggests that this distancing is only likely to increase the more time a teacher spends outside of their passport country. The metaphors '*entered*' and '*outskirts*' vividly convey cultural space in terms of geographical space, with Nora adopting the second person 'you' in order to imply that she considers herself to still be a cultural outsider in China (she mentioned that she felt more at home in her previous school in Europe). The term '*citizenship*' also brings to mind Standing's notion of the denizen. According to Nora, this permanent in-between lead to '*a little bit of stress*' as '*you don't have a base to depend on; you've got yourself.*'

Alice: 'For me, it's more of an adventure'

Whereas the previous narratives highlight the precarious or ambivalent nature of international teaching, Alice's narrative focuses on the positive aspects of being an international teacher. Alice was relatively new to the international teaching scene, having given up '*a full-time permanent long-standing position in a very prestigious school [in Australia] where I'd been for twenty-one years*' of her own volition in order to teach in China:

It was most definitely a choice. And I guess too I have security behind me in terms of experience, qualifications, finance. Like I'm not a new teacher who is trying to save for their wedding or save for their first home. So for me, it's more of an adventure.

Words like *'definitely'* and *'choice'* convey a clear sense of agency, with Alice presenting herself as being in control of her destiny. She is empowered due to her experiences, qualifications, and financial security, all of which explain why her narrative focuses on the more positive side of international teaching. The removal of financial considerations means that she is able to appreciate her international sojourn as more of an *'adventure'* rather than an *'exile'*. She draws upon the discourse of the globe-trotting international teacher in order to differentiate herself from the majority of international teachers, who find themselves teaching internationally due to forces beyond their control. Alice also offers an alternative perspective on age and precarity. Whereas Robert equated being older with more pragmatic, economic concerns and being younger with wanting to have an *'adventure'*, Alice inverts this distinction by presenting younger teachers as motivated by the need to save.

Alice also goes on to cite self-efficacy as another factor that leads to a feeling of security:

One of things that gives me comfort is that prior to this position maybe I was offered three other positions over the course of six months. So, that is security. But I guess I feel like I'm confident in my abilities.

The ability to choose from a number of jobs empowers Alice. The word *'comfort'* resonates with other words like *'security'* and *'confident'* thereby creating what I term discursive consonance. However, the word *'comfort'* implies that her current situation is perhaps not quite as she expected it to be. Alice would subsequently go on to leave SOUTH and China, moving to teach in another international school in South-east Asia. Interestingly, Alice's identity as a teacher is not connected to her cross-cultural experiences, as was the case with Nora, but rather with her perceived pedagogical abilities. When asked if she considered herself to be an international teacher, Alice was adamant that she was *'a teacher that happens to be working in China.'* She went on to explain that:

There's kind of a prestige, perhaps, amongst teachers that teach outside of their home country. When they talk about the schools that they've been in. So *'this is only your first international school?'* (whispers) *'Ah, okay, yeah.'* And that seems to be a fairly defining descriptor of whether you are an international teacher or not.

Once again, Alice distances herself from being an international teacher by referring to this group using the collective *'they'*. Rather, she presents herself a teacher who teaches internationally. From her perspective as a *'national'* teacher who teaches in an *'international'* school, there is a kind of snobbery (prestige) that goes with being an experienced international teacher, as revealed by the use of dialogue in which Alice's inexperience is met with surprise (use of the interrogative form) and disapproval (the anti-intensifier *'only'* and the lowering of the voice into a whisper). For Alice, the international teaching experience may bring a certain amount of cultural or social capital (prestige), but it is economic capital and teaching experience that brings true

security. Overall, Alice's narrative is striking in its absence of precarity, suggesting that financial security and the ability to freely choose where a teacher works are significant factors in whether or not a teacher perceives their international teaching career as secure or precarious.

Conclusion

The findings add to the growing literature on international teachers and international teachers as an educational precariat by showing that precarity is a complex phenomenon. Its exploration in educational research involves antithetical ontological perspectives: on the one hand, the situation of precarity can be said to exist 'out there' in the world as structure, and therefore has empirical warrant. On the other hand, precarity is also a construction – it is constituted by an individual's experiences and the meanings they impose on those experiences. Standing (2011) and Bunnell (2016) have approached the topic of the precariat from a more positivist stance. However, the findings of this paper reveal that teachers tended to narrate the 'darker' side of international education in terms of a situation or condition of precarity. Therefore, this paper adds to the literature by making a distinction between the precariat as a class and precarity as a situation or condition, primarily focusing on the latter and showing that teachers' understanding of precarity is connected to their experiences and perception of financial security.

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The Influence of Teacher's Role, Autonomous Learning Method and Student's Engagement on Student's Learning Outcomes in Vocational High School in Jakarta, Indonesia

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

To create the quality of human resources and achievers, the learner is required to have a good learning outcome. Learning outcome is the highest benchmark that person achieves after a learning activity during a given time. Learning outcome is not only determined by one's intelligence capabilities but also by the other factors. Sometimes, the learning process cannot achieve a maximum result because of the absence of appropriate teacher's role. This study aims at investigating (1) the influence of Teacher's role on English students' learning outcome (2) the influence of Autonomous Learning Method on English students' learning outcome (3) the influence of Student's engagement on the students' learning outcome? (4) simultaneously effect between Teacher's role, Autonomous Learning Method and Student's engagement on English students' learning outcome students of class? To answer the formulation of the problems above, this study was conducted with quantitative. A descriptive research design was conducted with population of 120 people and sample of 92 people. Sample were randomly selected proportional by applying formula of Slovin. Collecting data in this research used a questionnaire as the instrument. The result of descriptive analysis shows that the teacher's role has a significant impact on students' learning outcome of 70 % , while the Autonomous Learning Method had an influence of 71 % , whereas the students' engagement provided 71 % . The overall findings refers that those three three independent variables, namely teacher's role, autonomous learning method and student's engagement contributed an impact on students' learning outcome of 79,90 % . while, the remaining 20,1 % was caused by external variables.

Keywords: students' learning outcome, influence, autonomous learning, students' engagement, learning method

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Introduction

Improving the quality of national education is a necessity to align Indonesia with other countries. These needs will be met if the education process is able to produce reliable human resources. The phenomenon is certainly a responsibility of many parties, especially teacher in the world of education. The teacher is an intellectual profession that demands comprehensive competencies, competencies and abilities. Current conditions have not shown the maximum expectation so it is still needed a variety of efforts and appropriate strategies to improve children's learning outcomes. There are so many factors that can affect the achievement of children in school, one of which is the factor of self-learning methods that are increasingly developed, where the method of learning is centered on the students. In addition, the activeness of students which is very necessary in the learning process takes place to improve the creativity and independence of students while learning in the classroom.

Education is one of the efforts to deliver students to the process of maturity in various aspects of life. Education is a process of teaching that aims thoroughly, either in the form of knowledge transformation, appreciation and the formation of attitudes or behavior. In line with the national education objectives contained in Law no. 20 Year 2003 on SISDIKNAS (National Education System), that education aims to develop the potential of learners to become human beings who believe and piety to God Almighty, have a noble, healthy, knowledgeable, capable creative, independent and become citizens of a democratic and to be responsible.

Education is basically an effort to provide certain knowledge, insight, skill, and expertise to individuals to develop themselves so as to be able to face any changes that occur. Many factors cause the emergence of learning problems. These factors include internal factors and external factors. Internal factors are factors that arise from within students, such as the level of intelligence and personality. While external factors are factors that arise from outside the student self, such as teacher role factors, teaching methods and student activeness.

Education within the scope of the family is the first and main educational institution. The core family members, the elderly and other members of the family who first teach the child the knowledge of God as the one God, the experience of human interaction, and the obligation to develop responsibility, responsibility for oneself as a religious being, responsible As a student, is responsible as a social creature that lives in a society and is responsible as a citizen, and is responsible as a child against parents and others.

Because of the many factors that affect student learning outcomes, and the limited time, energy and cost, the researcher will limit the scope of the research on 4 (four) variables to be more focused and conclude the results of research closer to the research objectives. The variables that will be met include the role of teachers, independent learning methods, student activeness, and the results of learning English students. The research object is the students of Vocational High School in Jakarta. Based on the background and limitations of problems that have been identified then the authors formulate related to the research or thesis that will be prepared by the author as follows:

1. Is there any influence from teacher role to learning result?

2. Is there any influence of the independent learning method to the students' learning outcomes?
3. Is there any influence of students' activeness toward learning outcomes of English students ?
4. What is the factor of teacher's role, independent learning method, and student activeness simultaneously toward English student learning result?

Literature Review

Learning

Educational experts propose a different understanding between one another, but always refers to the same principle that everyone who is doing the learning process will experience a change in him. Some experts in the world of education provide a definition of learning among them is Wittig (1981) in his psychology of Learning which defines learning as, "Any relatively permanent change in an organism's behavioral repertoire comes as a result of experience."

Which means that learning is a relatively settled change that occurs in all sorts or whole behaviors of an organism as a result of experience. In this sense there is a word change which means change or change, which means that someone is changed when experiencing the process of learning, will experience the changes that make it necessary or require a good ability of the knowledge, skills and attitude to face or overcome the surrounding environment.

Learning outcomes

Learning process culminates in student learning outcomes or student performance. As a result then with the performance, the learning process stopped temporarily. And there was an assessment. With the assessment in question is the determination until something is considered valuable, qualified, or valuable. The size of something of value, worth, or quality comes from others. Teachers are key learners. Teachers design learning, implement learning and assess learning outcomes.

To be called learning, then the change must be relatively steady, must be the end of a long period of time. How long that time period lasts is difficult to determine with certainty, but that change should be the end of a month or years. This means that we must exclude behavioral changes caused by motivation, fatigue, adaptation, sharpness of attention or sensitivity, usually only temporarily. Behavior that changes due to learning concerning various aspects of personality, both physical and psychological, such as changes in understanding, solving a problem / thinking, skills, skills, habits, or attitudes.

Independent Learning Method

The paradigm shift in the learning process that was centered on the teacher becomes student-centered learning (Student Centered Learning) is expected to encourage students to be actively involved in the learning process. In the SCL process, students have the opportunity and facilities to learn independently, and ultimately can improve the quality of students. Innovative learning with the method of Student Centered Learning has a diversity of learning models that require the active participation of students.

Student activity

Active students are students who are intellectually and emotionally involved in learning activities. According to Amir (2009), active students are students who are involved continuously both physically and mentally in learning. According to Balcikanli (2010), Active students are students who are physically, psychologically, intellectually and emotionally involved continuously in the learning process. According to Benson (2001), the four conclusions can be concluded that the active students are the students who are involved continuously both physically, psychologically, intellectually and emotionally that form the process of compiling the subject matter received.

The activity of the students in the learning process is not only the involvement in physical form such as sitting around, doing things, but also in the form of process of analysis, analogy, comparing, appreciation, all of which are students' involvement in psychic and emotion (Brown, 2001).

Research Hypothesis

The hypothesis proposed by researchers in this research is a temporary estimate of the research problem formulation. Based on the theoretical review, literature review and thinking framework, furthermore the researcher wanted to test the hypothesis concerning the influence of teacher's role, the independent learning method and the students' activity toward the learning result of the students grade XI IPA SMA. The hypothesis in this study are:

1. Allegedly there is influence of teacher role to learning result of student.
2. Allegedly there is influence of independent learning method to English student learning outcomes.
3. Allegedly there is influence of student activeness to learning result of student.
4. Allegedly there is influence of teacher role, independent learning method and student activeness simultaneously to result of learning English student.

Methodology

The method used in this research is quantitative research method, where the measurement of quantitative data and objective statistics through scientific calculation comes from respondents as samples are asked to answer a number of questions. This research is also designed using casual design to analyze the relationship or influence between one variable with other variables, (Umar, 2011). In this research the design is used to test the influence of 4 independent variables namely, the role of teacher (X1), independent learning method (X2), and student active (X3) to one dependent variable that is the result of learning English (Y). Population is a generalization area consisting of: object / subject that has certain qualities and characteristics that are set by researchers to study and then in conclusion (Sugiyono, 2011). So the population is not just people, but also other objects and objects. Population is also not just the number of objects / subjects studied, but includes all characteristics / properties possessed by the subject or object. The population in this study includes students in Vocational High School in Jakarta. Total Population is 120 students and the number of samples as 90 students are calculated by the Slovin formula (Umar, 2003).

Results and Discussion

Validity Test

Validity Test Results Criteria used in this study is to compare the value of r arithmetic and r table. If r arithmetic $>$ r table then an item can be considered valid. R value table can be obtained by df (degree of freedom) = $n - k$, where n is the number of samples, and k is the number of grains statement. The level of significance or Alpha (α) used is 0.05. All the variables in this study have passed the validity test.

Reliability Test Results

One of the conditions for the test results of a test can be believed is that the test has adequate reliability. Reliability comes from the word reliability to what extent the results of a measurement can be trusted. The belief of the measurement results if in several times the implementation of measurements on the same subject group obtained relatively similar results, as long as the aspects measured in the subject have not changed (Suseno, 2013). In each study, there are often considerable measurement errors. One method of calculating reliability is the method developed by Cronbach, the Alpha Cronbach coefficient (α). In this study the coefficient is obtained from data processing using SPSS version 21.0. According to Kaplan and Scuzzo reliability coefficients of $>$ 0.7. An instrument is said to be reliable if the respondent's answer to the research instrument is consistent or stable.

Normality test

Inferential statistical analysis (good regression / correlation model) must meet several requirements, in addition to data must be interval scale, also requires data to be normally distributed (Sugiyono, 2010). For that the data need to be tested normality. Normality test of each variable is done with the intention to know whether the questionnaire or data distribution of each variable does not deviate from the characteristics of data that will be normally distributed. Normality testing is done using SPSS V.21 computer program. Test Kolmogorov-Smirnov. By criterion if probability value or significant less than 0.05 data is not normally distributed.

Multicollinearity Test

Multicollinearity is a condition in which one or more independent variables are correlated with other independent variables, or in other words a free variable is a linear function of other independent variables. To determine whether there is a problem multicollinearity, Marquadt method can be used (Ghozali, 2011), by looking at the value of Variance Inflation Factor (VIF). The results in the following table:

Table 1. Multicollinearity Test Results

Independent Variable	VIF	Keterangan
Teacher's role	4,981	There's no multicollinearity
Autonomous learning method	4,530	There's no multicollinearity
Student's Active	3,699	There's no multicollinearity

Heteroscedasticity Test Results

According to Ghozali (2011) the heteroscedasticity test aims to test whether in the regression model there is a residual variance inequality from one observation to another. If the variance of the residual one observation to another observation remains, then it is called homoscedasticity and if different it is called heteroskedatisitas. Due to the occurrence of heteroscedasticity, any change in the dependent variable causes the error (residual) also changes in line or increase or decrease. In other words the consequence if the dependent variable increases then the error will also increase.

Hypothesis test

Table 2. Result test

Variable	Hypothesis	Coefficient	T count (Partial)	F count (Simultaneous)	R2	Adjusted R Square	Conclusion
Teacher's role (X1)	Ho : $\beta_1 = 0$ H1 : $\beta_1 \neq 0$	0,326	15,522	118,7 15	0,732	0,729	Ho : refused H1 : accepted
Autonomous Learning Method (X2)	Ho : $\beta_1 = 0$ H1 : $\beta_1 \neq 0$	0,276	14,807		0,714	0,710	Ho : refused H1 : accepted
Student's Active (X3)	Ho : $\beta_1 = 0$ H1 : $\beta_1 \neq 0$	0,328	14,674		0,710	0,707	Ho : refused H1 : accepted
Teacher's role (X1), Autonomous learning method (X2), Student's Active (X3)	Ho : $\beta_{1,2,3} = 0$ H1 : $\beta_{1,2,3} \neq 0$				0,805	0,799	Ho : refused H1 : accepted

1. Discussion The first hypothesis

To test the first hypothesis stating that there is influence of teacher role to learning result of student is done partial regression test between technological variables with learning result variable which produce calculation where coefficient determination 0,732 and value t count equal to 15,522 at significant level 1% greater than t-table value so Ho is rejected and H1 accepted.

the model of regression equation as follows:

$$Y = 25,508 + 0,855X1$$

The model explains that every 100% change in the teacher role variables (XI) will positively affect the change in student learning outcomes (Y) of 85.5 %, With a constant value of 25.508.

From the analysis of aggression, it was found that teacher role variables have positive and significant influence on the learning result of Vocational High School students in Jakarta. This can be shown from the magnitude of regression coefficient marked positive is 0.326. This means that if the role of teachers improved, it will result in

increased student learning English results with the assumption of other factors are constant.

2. Discussion The second hypothesis

To test the second hypothesis stating that there is a positive influence of independent learning methods on the results of students' learning conducted partial regression test between independent learning method variables with learning result variable that produces calculations where the coefficient of determination 0.714 and the t count of 14,807 At a significant level of 1% greater than the t table value thus Ho rejected and H1 accepted.

The model of regression equation as follows:

$$Y = 37,393 + 0,805X_2$$

The model explains that every 100% change in the variable of independent learning method (X₂) will positively affect the change of student learning result (Y) by 80,5%, with constant value equal to 37,393.

From the analysis of aggression, it was found that the variable of independent self-learning method had positive and significant influence on the learning result of Vocational High School students in Jakarta. This can be shown from the magnitude of regression coefficient marked positive is 0.276. This means that if the positive self-learning method is improved, it will result in increased student learning English results with the assumption of other factors are constant.

3. Discussion The third hypothesis

To test the third hypothesis stating that there is a positive student activity influence on the result of learning English Vocational High School students in Jakarta done partial regression test between environmental variables with learning result variable that produces calculation where the coefficient of determination 0, 710 and the value of t count 14.674 at a significant level of 1% greater than the t table value thus Ho rejected and H1 accepted.

The model of regression equation as follows:

$$Y = 62,069 + 0,825X_3$$

The model explains that every 100% change in Student Activity variable (X₃) will positively influence to the change of student learning result (Y) equal to 82,5%, with constant value equal to 62,069.

From the analysis of aggression, it was found that the positive student activeness variable had a positive and significant influence on the students' learning outcomes of Vocational High School students in Jakarta. This can be shown from the magnitude of regression coefficient marked positive is 0.328. This means that if the activity of positive students is improved, it will result in increased student learning outcomes with the assumption of other factors are constant.

4. Discussion Fourth hypothesis

From F test known that simultaneously teacher role variable, independent learning method and student activeness influence student english learning result. This means that if the role of teachers, independent learning methods and student activeness is improved simultaneously then significantly will be able to improve students' learning outcomes Vocational High School students in Jakarta.

Furthermore, the extent to which the influence of the role of teachers, independent learning methods and student activeness affect student learning English results can be known from the adjusted R square (R²) of 0.799. This figure shows approximately that 79.90% students learning English Vocational High School students in Jakarta can be explained by teacher role variables, independent learning methods and student activeness. While 20.1% is influenced by other factors.

Thus the final discussion of the results of this study where the first hypothesis to the fourth that states that there is influence of the role of teachers, independent learning methods and student activeness of English students learning outcomes Vocational High School students in Jakarta, both partially and simultaneously been tested.

Multiple regression

Multiple linear regression analysis is used to determine whether the independent variable The influence of teacher role, independent learning method and student activeness simultaneously have an effect on to result of learning as dependent variable. Using SPSS 21.0 is obtained as follows:

Table 4.19

Multiple Analysis Results

From the table above can be formulated model of multiple regression equation obtained from result of analysis as follows:

$$Y = 29.342 + 0.326 X1 + 0.276 X2 + 0.328 X3$$

The model explains that simultaneously variable of independent variable The influence of teacher role, independent learning method and student activeness simultaneously have an effect on to learning result of english language. The amount of influence of the dependent variable on the dependent variable is indicated by each coefficient value of the independent variable. With the constant value of 29,342, the variable use of teacher role (X1) with coefficient 0,326 means that every 100% change on variable of teacher role (X1) will positively influence to change of student learning result variable (Y) equal to 32.6%. While the coefficient of independent learning method (X2) is 0.276 which means that if the variable of self-learning method (X2) changed by 100%, it will bring about 27,5% change to the learning result. Similarly, the student activeness variable (X3) which has a coefficient of 0.328 which means that the student activity change of 100% will affect 32.8% on student learning outcomes.

Conclusion

Based on the results of analysis and research and hypothesis testing can be taken as follows:

- Descriptive analysis results show that the role of teachers give a significant effect on the results of learning English Vocational High School students in Jakarta of 73.2%.
- Descriptive analysis results show that the independent learning method gives a significant effect on the learning outcomes of students in Vocational High School students in Jakarta of 71.4%.
- Descriptive analysis results show that students 'activity influences the students' learning outcomes of Vocational High School students in Jakarta of 71.0%.
- The results of the whole analysis show that simultaneously the three independent variables are the role of teachers, independent learning methods and student activeness to give effect to the learning outcomes of students in Vocational High School students in Jakarta for 79.9%. The remaining 20.1% is caused by other variables not involved in this research.

Suggestion

With the influence of the role of teachers, independent learning methods and student activeness of Learning Outcomes english language, then some suggestions that can be given include:

- For students need improvement and positive use for the role of teachers because appropriate teacher role can improve learning outcomes. Students should strive to adjust and know the appropriate role of teachers in the classroom while learning takes place.
- The importance of self-learning methods for the implementation of teaching and learning process in this case is of course on the supervision of teachers, because we know that science is not only obtained from books alone, but through the role of teachers and independent learning methods are interesting, children will be more enthusiasm to learn .
- The importance of providing a child's direction to do the best, always giving more support and attention to the child. And provide opportunities / involving students activeness in determining the learning that will take place in the class. Because this can stimulate and stimulate children always think clearly and positively.
- Need for cooperation between teachers, parents and community, in order to create a comfortable atmosphere for learning children. Because the learning process does not only happen at school, but in the environment where the child is located. Therefore we must work together to create a conducive, positive atmosphere.

Recommendation

Based on the results of the above research then some related recommendations that can the authors convey in this study are:

- Given the role of teachers influence the students' English learning outcomes, then the role of teachers in the field of education is maintained and applied as a source to increase knowledge.
- Given the independent learning method influences the student's learning outcomes, let us as a member of education direct the children and guide them so that the child always has a positive thinking, perspective on something and we direct and give examples in the application. So automatically the child will behave well in the act.
- Given the activity of students influence the student learning outcomes, it is necessary cooperation between parents, teachers and the community to always involve students in determining decisions in the learning process so that students will feel themselves needed and important, stimulate them to be interested in learning.

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The Significance and Strategy of Innovative Learning in the Age of Intelligence

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

Knowledge has been common interest of mankind in intelligent era, it's complex and changeable, and has various value orientation, we can get it by lots of ways. The fact means more attention needs to be paid to participation and holistic practices of innovative learning. Participation is a kind of social activity, representing care and resonance in emotion. Only out of concern for human development, can we fulfill the responsibility of solving human problems, truly trigger the motivation of innovation, and then turn the motivation into efforts. Integrity means the ability of cooperation and problem-solving, is the main purpose of innovative learning. Innovative learning with the characteristics of participation and integrity, needs government to change education view and knowledge-based view, and adjust curriculum politics and teacher training system to create an inclusive learning system. It also needs teachers to reform their educational ideas and teaching methods and strengthen the training of education technology to improve students' capability of innovation learning, at last achieving sustainable development of mankind.

Keywords: The Age of Intelligence, Innovative Learning, Participation, Integrity

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Introduction

Since the Club of Rome first mentioned “innovative learning” in the report called Knowledge was boundless in 1979, innovative learning has been an important target of educational reformation and development all over the world, and affects the whole educational research and decision making. However in the process of realizing innovative learning, people pay more attention to the anticipation of innovative learning for future problem discoveries and solutions, but ignore the participatory feature of it. Emphasis more on independence of innovative learning than integrity. Currently, it has been the age of intelligence, and the way of knowledge recognition and acquisition has changed greatly, how to realize the participation and integrity of innovative learning is extremely urgent.

1.The significance of participation and integrity in innovative learning is emphasized in the intelligent age

Human learning mainly consists of two types: sustaining learning and innovative learning. The former is an essential way for every society to run well and remain stable. However, in order to survive in the long term and deal with various changes more smoothly, innovative learning is also needed. Especially in the era of intelligence, the core of human resource is innovation ability. It is because intelligent promotion brings changes to production mode. At first, producing depends on abundant manpower, followed by ample funds, then technology intensive. At present, it is the innovative application of professional knowledge, which becomes the connotation of current human resource. Therefore, it is particularly important to get the ability of innovative learning, especially enhance the ability from the perspective of participation and integrity.

1.1Challenges to learning in the age of intelligence

Nowadays, every second there are knowledge and information changing, only by learning to adapt to changes can one have autonomy, and learn how to learn innovatively is the vital step to deal with the changing world.

1.1.1Complex and changeable resources of knowledge

It is of great importance to gain knowledge in the process of learning, and the change of way to deliver and obtain knowledge pose an direct influence on the knowledge acquisition. In an era of intelligence, it is inevitable for us to acquire knowledge in a more and more fragment manner. Chinese scholar Liu Tiefang held the key is, “how we seek for a path to the completion in the fragment of knowledge acquisition to integrate it into the growth of our life, and to make it to be the pursuit of knowledge and truth, and to make it be open, thus arousing the sustainability of the growth of life. Once education has become the process to seek for the conclusive knowledge and end, the gradualness of life growth will terminate and conform to the existing knowledge and conclusion. Knowledge is the limit of individual life, so that individual life is being divided in various imbue ment of knowledge and individual life cannot be complete in the pursuit of higher knowledge. Only when gaining knowledge features a sustainable openness to higher matters can this process be open-minded to the integrity of individual development. As such, knowledge

acquisition should not have an end but to uphold a possibility to the next moment and to the future. Then, the individual that is obtaining knowledge can keep its integrity and turn to completion.”^[1]

1.1.2 The diverse value orientation of knowledge

Now, people who can participate in network all are spokesmen of the intelligent era. Thus, everyone or a certain group can present their value judgement on the internet. Seriously, the era of intelligence is an era of “truth-rebuilding”. This truth may be true or may be “false truth” which guided by a kind of value judgement. However, due to the rapid update of information, new events will arise before you make a judgement of something, which brings challenges to education. Education is an activity to teach people to seek for truth and kindness, and teach young people how to keep original intention with holding one’s own opinion tightly.

1.1.3 The various ways of knowledge acquisition

In ancient times , the younger generation gained knowledge from the older ones by word of mouth. After written language was created, we made it another carrier of knowledge acquisition. In the era of intelligence, it is the media language that helps spread knowledge. In terms of education, teachers started with nothing but teaching orally, the condition has changed a lot now, there are countless methods of knowledge acquisition in school, such as Computer-assisted teaching, E-bags, E-learning, Cloud computing, Internet+, Internet thinking, Ubiquitous learning, micro class, MOOC, Flipped learning, Flipped class, smart class, Maker education and so on, not to mention daily studying. Various ways to obtain knowledge challenged learning, so we have to think about two questions in the process of learning--what kind of style is suitable for myself and which one can spread and develop my knowledge. At the same time, how to mix different kinds of studying modes together needs innovation of learning method.

1.2 Participation and integrity are the core concepts of innovative learning

In the age of intelligence, knowledge has become a common interest of human beings. We can no longer study knowledge changelessly. Therefore, more attention should be paid to the participatory and holistic characteristics of innovative learning. Participation is a kind of social activity, which reflects a kind of concern and understanding. Only out of concern for human development, can we fulfill the responsibility of solving human problems, truly trigger the motivation of innovation, and then turn the motivation into efforts. Integrity is the main purpose of innovative learning, which means the ability to cooperate and solve problems.

1.2.1 Participation is the essential feature of innovative learning

The Club of Rome believes that anticipation and participation are two key characteristics of innovative learning. "Anticipations are not limited in various kinds of desirable trends to foresee, to choose or avoid catastrophic trends, but also create new choices". It is a mental activity, may be there is disharmony. Therefore, participation, as a social activity, is needed to balance different anticipations. In a sense, participation is the essential characteristic of innovative learning, making it

totally different from sustainable learning. When we participate in activities personally to help human develop better and then we can make some innovation, which is a process of struggling creation.

1.2.2 Integrity is the ultimate goal of innovative learning

The Club of Rome held the opinion that autonomy and integrity is the main purpose of innovative learning. In fact, people pay too much attention to autonomy of innovative learning but neglect the integrity, which does not reject autonomy, on the contrary to serve autonomy better. Integrity means that "access to wide relationships, cooperation for common purposes, connection with others, understanding of larger systems, seeing individuals as a whole as part of them" and means the ability to understand issues and how they relate to each other and connect with each other." The Club of Rome believes that global issues will increasingly encourage these natures of integrity: the concept of mutual respect, self-discipline, common interests and the ability to abandon selfishness. These essences are the foundation of world.

2.The essence of innovative learning

2.1Participation and integrity is beneficial to developing studying interest

In the book "Learning To Be", The UNESCO points out that, scientific and technical revolution is the first true revolution, which not only gives a new meaning of knowledge and training but also provides people with lots of new knowledge and methods in thinking and behavior. It put forward challenge to education directly: how to keep the balance between sense and sensibility. American scholar, John Dewey gave an example in his book "Democracy and Education": A man at some distance is waving his arms wildly. One has only to preserve an attitude of detached indifference, and the motions of the other person will be on the level of any remote physical change which we happen to note. If we have no concern or interest, the waving of the arms is as meaningless to us as the gyrations of the arms of windmill. But if the interest is aroused, we begin to participate.^[2] After taking part in, we have our own judgement of the whole surroundings, and then practice will happen with care and interest. In a word, without participation, we can't create or discover at all.

2.2Participation and integrity can help students develop their inclusiveness

The fusion of different knowledge is increasingly frequent, which needs us to get a better understanding of them with tolerance through innovative learning. Thus, "Relevant learning must reflect how different culture and groups define the elements of a dignified life. We have to admit there are different standards of life's quality, therefore, there are different definitions of necessary knowledge." The UNESCO emphasizes that mainstream educational thoughts of utilitarianism should accept other definitions of human's welfare, and focus on education as a part of human's common interest, which means we should listen to the silencers' heart when others are all going after happiness. The diversity within great treasure is able to inspire everyone.

2.3 participation and holistic practices is benefit for culturing students responsibility

Scientific technology brought from intelligent era is a double-edged sword, on one side, it expanded the way people understanding and acquiring the knowledge, on the other side, it also contributed diversification and complex to knowledge, people becoming the producers and disseminator. If lack of the responsibility for worldwide development, excessive selfish will be easily formed, narrowly focus on self-interest, neglect to pay attention to the global environment and the future development. The Club of Rome has pointed out in the 1970s that "it is the key point to re-determinate the direction from the progress of all people and the understanding of their own heart and responsibilities human should bear".^[3] As the UNESCO report states, "the aim of human development is to perfect their own; Make their personality rich and colorful, expression way complex and diverse; Make him as a person, a member of a family and society, a citizen and producer, a technical inventor and a creative idealist to take on different responsibilities."^[4]

Innovative learning of participatory and holistic practices helps foster a sense that people care about the world, others and take responsibility for themselves.

2.4 Participation and holistic practices are benefit for culturing students' practical abilities

Bernstein says "Participation is not just about discourse and discussion, it's about practice and a practice must have output."^[5] Participatory innovative learning places more emphasis on the output of the results after knowledge and innovation in practice, which is also the inevitable requirement of innovativeness. Only through participatory innovative learning that we produce innovative results is the essence of learning. Learning should not be just matter of one personal, but also a social experience which requires others involving, and learning through discussion and debate with peers and teachers.

3. Conclusion: strategy of consciousness training from participation and holistic innovative learning

Previous education is to absorb the wisdom of predecessors, but education of intelligence era should be the wisdom of pioneer. Innovative learning needs to fresh current education concept, curriculum concept and teacher-student relationship.

3.1 set up innovative education concept

In 2015, UNESCO emphasized in report of Education Reflection that the new education concept should include training students to learn critical thinking, independent judgment and debate. The country, government, teachers and whole society should realize innovative literacy is the core of human capital, and also the foundation of international competitiveness. Innovative learning is the main way of current learning and safeguard of future happy life. Thus we all need to establish innovative educational concept, through innovative teaching strategy to culture innovative talents, which not only can promote the international competitiveness, also play an important role in positive function of education. Based on this principle,

establish the innovative education concept is the first step to change the traditional examination-oriented concept.

3.2 Set up diverse curriculum concept

At the intelligence era, knowledge is diversified, and curriculum resources are abundant. In order to cultivate talents with innovative and integrated ideas, the curriculum setting and content should respect its diversity. In Education Reflection, UNESCO proposes to establish a humanistic curriculum concept, put the curriculum on the base of cross-cultural education, and admit social diversity, in the meantime, keep the balance of diversity and universal values. This requires the course policy coordinating with the course interest subject, legalize the course framework when setting up, and establish processing of education goals policy dialogue which must be universally involved and inclusive. Course policy and course content must be guided by the principles of social and economic justice, equality and environmental responsibility, which are the pillars of sustainable development. Intelligent technology will not replace schools or teachers. All the teacher has to do is to become a guide, start from childhood and traverse through the whole learning path to achieve development and progress by constantly expanding knowledge base. Critical pedagogy holds that it is necessary to reposition the textbook knowledge as an explorable subject, as a learning process rather than an end point. Such transformation allows students to question their own life experience, and develop their critical thinking (Freire, 1990).

3.3 Set up democratic teacher-student relationship

UNESCO report Learn to Live pointed out that, in addition to the problems of form and method, we should fundamentally re-evaluate the teacher-student relationship, the traditional cornerstone of education, especially when it becomes into rulers and ruled. The rulers and ruled relationship became entrenched by the advantage of one party's age, knowledge and supreme authority, and the inferior and submissive position of the other. So to achieve education democracy, we need to fundamentally change the duty of teacher, which is should not just be a knowledge giver, but be a consultant, an exchange participant, a person who helps find contradictory arguments. If the relationship between teachers and students does not develop follow this way, it won't be truly democratic education.

The democratic teacher-student relationship helps to promote the innovative teaching of teachers and learning of students. The past relationship overemphasized the dignity, authority of teachers, but the democracy of teachers and students suggested eliminating the authority of teachers. When authority disappears, teachers and students are in the same position to explore knowledge, and teaching is no longer one-way indoctrination, but two-way dialogue (Freire, 1998). This kind of dialogue enables both teachers and students to explore the multiple meanings of textbook knowledge from various perspectives. To have this function, the classroom must be defined as either democracy and public sphere (Aronowitz and Giroux, 1991) or culture BBS (Shor, 1996). Based on the above principles, innovative teaching does not directly tell students answers, but asks them to think, discuss and express with open questions. Through the communication and sharing with teachers and their peers, each student can understand and explore the multiple meanings of textbook

knowledge based on their own experience, and enhance their understanding of the world and interest in learning, develop their innovative consciousness and thinking.

Acknowledgements

First of all, I would like to thank conference committee for providing me with the chance of attending the conference. Secondly, I would like to thank people who provide me with suggestions in the process of writing this paper.

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Web-Based Science Learning as Innovative Instruction

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

There are so many mediums of technology, which is radically redefined to obtain communication and change the view of teaching and learning. The widespread use of the World Wide Web (www) extended the capacity of the different educational institutions involved in training to extend the possibilities of e-learning. There are a lot of challenging points in the dynamic and challenging field of e-learning. The use of the internet to bridge the digital divide is one of the challenges which are experienced by different educational institutions in the country. This study aimed to determine the possibility of web-based learning in teaching science subjects specifically in the Senior High School. Innovative instruction applied three (3) different teaching approaches namely: Inquiry-based, Problem-based, and Project-based. Benefits of this approaches have been cited by numerous proponents which include greater depth of understanding of concepts, broader knowledge base, improved communication and interpersonal/social skills, enhanced leadership skills, increased creativity, and improved writing skills. Most of the extent of utilization of web-based learning on this study along the different approaches in teaching science is highly effective. All remaining variables are noted to be effective. Improvement of the posttest result was noted using the web-based instruction. The scores of the students in all approaches are normally distributed. A significant difference in the pretest and posttest results along the different approaches was noted. Also, it was found out that there is a significant relationship between the post-test result and the different approaches that rejected the null hypothesis.

Keywords: Web-based Learning, Innovative Instruction, Science Learning, Earth Science

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Introduction

Since 1990's web-based education has become an extremely significant branch of educational technology. Pulsen (2003) adopted the concepts of Keegan (1995) that a web-based education is characterized by the separation of teachers and learners, the influence of an educational organization, the web technologies presenting educational content, and the provision of the two-way communication via the internet. Online learning can be considered as one of the struggling terms to define which was cited by Oblinger (2005). Meanwhile, Lowenthal et al. (2009) defines it as a reference technological medium or context with which it is used.

According to Campbell (2007), maturing educational technology had identified important issues like the academic technology profession moves to an "Instruction 2.0". Enumerated issues are: (1) establishing and supporting a culture of evidence; (2) demonstrating improvement of learning; (3) translating learning research into practice; (4) selecting appropriate models and strategies for e-learning; (5) providing tools to meet growing student expectations; (6) providing professional development and support to new audiences; (7) sharing content, applications, and application development; (8) protecting institutional data; (9) addressing emerging ethical challenges; and (10) understanding the evolving role of academic technologists. This key technology-related teaching and learning issues must be addressed to maintain the continuity of development in transforming the academic technology.

In the educational policy research series of the UNESCO, which was conducted by Bangkok Office of Asia and Pacific Regional Bureau for Education, it was indicated on the mapping of the content areas taught at the lower secondary level that 9 out of 15 countries excluding the Philippines include technology as one of the prescribed subjects in their curriculum.

In the Philippines, online learning and delivery of instructional content are associated with support services. The use of the internet to bridge the digital divide is one of the challenges which is experienced by different educational institutions in the country. Furthermore, it is the mechanism which is being used in ensuring the quality education in e-learning in an extensively detailed manner.

This research determined the use of web-based learning in the field of teaching science subjects specifically Earth Science Unit I for Grade 11 learners in the senior high school. Respondents are the four (4) science teachers and the one hundred twenty (120) Grade 11 students enrolled in Academic Track in Urdaneta City National High School, Urdaneta City, Pangasinan, Philippines.

A thirty (30) items pretest and posttest will be administered. This study is delimited to Earth Science and does not include Physical Science, Physics, Chemistry, and other components of science subject.

This study aims to answer the extent of utilization of web-based learning in teaching science subjects specifically earth science which one of the core subjects in the senior high school curriculum along the different approaches namely; inquiry-based, problem-based, and project-based.

The sub-questions of this study include (1) level of academic performance of the learners taught using the web-based instruction in the areas of inquiry-based, problem-based, and project-based, regarding the pretest and posttest scores mean, median, skewness, kurtosis, and standard deviation. The researcher also looked at the (2) the significant difference in the academic performance of the learners in the pretest and posttest along the different instructional approaches, and (3) the significant relationship between the post-test result and the instructional approaches used by the teachers namely: Inquiry-based; Problem-based; and Project-based.

The study's research design consisted of the distribution of checklists to the four (4) senior high school teachers at Urdaneta City National High School, while the pretest and posttest were administered to the one hundred eleven (111) senior high school students who are currently taking earth science.

Table 1
Profile of the Teacher-Respondents
N=4

Profile Variables	Frequency	Percentage
Sex		
Male	2	50
Female	2	50
Age		
21-30 y.o.	1	25
31-40 y.o.	0	0
41-50 y.o.	3	75
51-60 y.o.	0	0
61 and Above	0	0
Civil Status		
Single	1	25
Married	3	75
Widow	0	0
Separated	0	0
Status of Appointment		
Permanent	3	75
Provisionary	1	25
Academic Rank		
Teacher I	0	0
Teacher II	2	50
Teacher III	2	50
Master Teacher I	0	0
Master Teacher II	0	0
Highest Educational Attainment		
BSE/BSEED	0	0
With MA Units	4	100
MA Degree Holder	0	0
With Ph.D./Ed.D. Units	0	0
Ph.D./Ed.D. Holder	0	0
No. of Years Teaching Science Subject		
Science 7	0	0
Science 8	0	0
Science 9	0	0
Science 10	0	0
No. of Relevant Trainings and Seminars Attended		
International Level	0	0
National Level	0	0
Regional Level	4	100
Provincial Level	0	0
Division Level	4	100
School Level	4	100

It could be seen in Table number 1 that there are equal numbers of male and female teachers who are teaching earth science in the Urdaneta City National High School (Senior High School). The bracket of 41-50 years old teacher has the highest percentage (75%) compared to the (25%) on the age bracket of 21-30 years old. Three (3) out four (4) respondent teachers are married. Meanwhile, the same percentage is observable for teachers who have a permanent appointment (75%) and provisional (25%). The teacher-respondents are equipped with seminars and training from regional (100%), school division (100%), and school (100%). As cited by Galloway (1998), the instructor guides students to the relevant information rather than obliging the students to search for information. With this, it is necessary for the teachers to

have additional knowledge and skills in instructing the learners by any means. Also, Alfonso (2016), stated that today's generation identifies problems in translating research and studies that enables learning as to learner-centered, flexible, distributed, collaborative, integrative, innovative, and creative. These characteristics were promoted and included on the different seminars and training attended by the teachers for the senior high school before and during teaching the respective subjects.

Table 2
Profile of the Student-Respondents'
N=111

Profile Variables	Frequency	Percentage
Age		
16 and Below	0	0
17-18	102	91.89
19-20	9	8.11
21 and Above	0	0
Sex		
Male	44	39.64
Female	67	60.36
General Average		
80 and Below	14	12.61
81-85	56	50.45
86-90	29	26.13
91 and Above	12	10.81
No. of Siblings		
0	6	5.41
1	36	32.44
2	59	53.15
3	5	4.50
4 and Above	5	4.50
Parents' Occupation		
Teacher	18	16.22
Engineer	3	2.70
Helper	57	51.35
Vendor	25	22.52
Driver	8	7.21
Parents' Highest Educational Attainment		
Elementary Level	0	0
High School Level	41	36.94
Technical-Vocational	0	0
Bachelors Degree Holder	58	52.25
With MA Units	12	10.81
Masters Degree Holder	0	0
With Ed.D./Ph.D. Units	0	0
Doctors Degree Holder	0	0
Family Monthly Income		
5,000- below	12	10.81
5,001-10,000	31	27.93
10,001-15,000	28	25.23
15,000-20,000	19	17.12
20,001-Above	21	18.92

As shown in Table number 2, most of the student-respondents are in the age bracket of 17-18 years old (91.89%) and 19-20 years old (8.11%). Females (60.36%) are more than males (39.64%). Most of the learners from the group have an average rating ranging from 81-85% (50.45%) and 86-90% (26.13%). As cited by Alfonso (2016), to be able to work in different contexts, learners are produced to have the ability to seek new information from different sources, translate information into applicable knowledge, and communicate the knowledge in various forms and situations that address the challenges of the education in the 21st century.

There are 53.15% among the student-respondents with two (2) siblings, 32.44% with one (1) sibling, while the others three (3) siblings (4.50%) and 4 and above (4.50%).

Their parents are helpers (51.35%), vendor (22.52%), teacher (16.22%), driver (7.21%), and engineer (2.70%). It could also be seen on the table that 52.25% of their parents are bachelors degree holder, 36.94% are high school graduate and remaining 10.81% are with masters degree units. The bracket of P5,001-10,000 in the family monthly income has the highest percentage of 27.93%, followed by P10,001-15,000 (25.23%), P20,001 and above (18.91%), P15,001-20,000 (17.12%), and P5,000 and below (10.81%).

Table 3
Extent of Perception on the Use of Web-Based Learning in
Teaching Science Subject along Inquiry-Based Approach

	WM	TE
Using the web-based learning as instructional innovation, I...		
1. determine the ability level of students' performance and capabilities, <u>prior to learning</u> and past experienced learning, etc.	4.00	Highly Effective
2. survey students' interest by asking students open-ended questions with learning preference.	4.25	Highly Effective
3. plan activities that <u>suits</u> the learner.	5.00	Highly Effective
4. give direct instruction to the learner.	5.00	Highly Effective
5. process information gathered from the learner.	4.00	Effective
6. identify <u>instructional</u> activities of the learner.	4.25	Highly Effective
7. interact as <u>variety</u> of media to explore and wonder.	4.00	Effective
8. respond to text by jotting or drawing questions, connections, and reactions	3.75	Effective
9. engage in <u>deeper</u> reading and researching (e.g. books, articles, websites, videos, etc.)	3.75	Effective
10. reflect upon and articulate the learning and cooperative process	4.25	Highly Effective
OVERALL	4.23	Highly Effective

Mean Range	Literal Value	Descriptive Equivalent	Transmuted Equivalent
4.20-5.00	A	Always	Highly effective
3.40-4.19	B	Often	Effective
2.60-3.39	C	Sometimes	Moderately Effective
1.80-2.59	D	Seldom	Slightly Effective
1.00-1.79	E	Never	Not Effective

Table 3 presents the extent of perception on the use of web-based learning in teaching science along the inquiry-based approach. Based on the given statements, 7 out of 10 resulted to be “Highly Effective,” while the remaining falls under the transmuted equivalent of “Effective.” As cited by Newman et al. (2004), this kind of approach in teaching relied on the teachers’ recognition about the importance of presenting problems to learners that will change their current conceptual understanding for they are forced to reconcile anomalous thinking and new understanding.

Table 4
Extent of Perception on the Use of Web-Based Learning in Teaching Science Subject along Problem-Based Approach

	WM	TE
Using the web-based learning as instructional innovation, I...		
1. simulate useful knowledge that can add learning to the learning with fellow learner	4.50	Highly Effective
2. give more exercises with simulators to the learners	4.50	Highly Effective
3. <u>improve</u> the familiarization of the learners with the concept of the topics.	5.00	Highly Effective
4. instruct by means of useful learning strategy	4.75	Highly Effective
5. <u>let</u> the students themselves resolve the problems that are given to them.	4.00	Effective
6. <u>give</u> more significance to the meaning, applicability and relevance to the learning materials for better understanding of the subjects.	4.75	Highly Effective
7. <u>encourage</u> self-directed learning by confronting students with problems and stimulates the development of deep learning.	4.25	Highly Effective
8. provide semi-realistic experience	4.75	Highly Effective
9. <u>develop</u> the students key skills relevant to the performance standard.	4.25	Highly Effective
10. develop decision making	4.50	Highly Effective
OVERALL	4.53	Highly Effective

Mean Range	Literal Value	Descriptive Equivalent	Transmuted Equivalent
4.20-5.00	A	Always	Highly effective
3.40-4.19	B	Often	Effective
2.60-3.39	C	Sometimes	Moderately Effective
1.80-2.59	D	Seldom	Slightly Effective
1.00-1.79	E	Never	Not Effective

Table 4 presents the extent of perception on the use of web-based learning in teaching science along the problem-based approach. Based on the given statements, 9 out of 10 resulted in being “Highly Effective,” and the remaining statement falls under “Effective.” As cited in the study conducted by Hmelo-Silver (2004) that suggest the learners’ experiences of solving problems can be learned through content and thinking strategies which can develop decision making and key skills relevant to the performance standard. In addition, the exploratory study conducted by Sengel (2005) states that problem-based learning provides qualitative and quantitative outputs on the integration of a specific online information system into the science curriculum by using authentic task in a class setting similar to simulation of useful knowledge that can add learning to the learning with fellow learner that resulted to 4.50. As cited by Marmara et al. (2007), it was then determined that the passively affected by the implementation of problem-based active learning model is the students’ academic achievement and their attitudes towards the science course. It was found out that the application of problem-based active learning model affects students’ conceptual development positively and keeps their misconceptions at the lowest level.

Table 5
Extent of Perception on the Use of Web-Based Learning in Teaching Science Subject along Project-Based Approach

	WM	TD
Using the web-based learning as instructional innovation, I...		
1. import knowledge and skills to the learners derived from standards and key concepts of the subject.	4.50	Highly Effective
2. develop learners critical thinking/ problem solving, collaboration, and communication skills.	4.50	Highly Effective
3. encourage learners to good questions regarding the processes.	4.25	Highly Effective
4. organize task around a driving project.	4.00	Effective
5. establish a need to know understand concepts that lead the learners to identified questions beginning with an entry event that generates interest and curiosity up to the last.	4.50	Highly Effective
6. allow the learners to make some choices about the products to be created, how they work, and how they use their time.	5.00	Highly Effective
7. Incorporate revision and reflection to the learners for feedback.	4.25	Highly Effective
8. include a public audience, students present their work to other people, beyond their classmates and teacher.	4.00	Effective
9. deem peer assessment that can encourage the students to be more engage with material.	4.25	Highly Effective
10. benefit of deeply studying marking criteria which will be identified by the students.	4.25	Highly Effective
OVERALL	4.35	Highly Effective

Mean Range	Literal Value	Descriptive Equivalent	Transmuted Equivalent
4.20-5.00	A	Always	Highly effective
3.40-4.19	B	Often	Effective
2.60-3.39	C	Sometimes	Moderately Effective
1.80-2.59	D	Seldom	Slightly Effective
1.00-1.79	E	Never	Not Effective

Table 5 presents the extent of perception on the use of web-based learning in teaching science along the project-based approach. Based on the given statements, 8 out of 10 have a transmuted equivalent of “Highly Effective,” while 2 out of 10, were “Effective.” According to Markham (2011), this approach allows the learners learn knowledge and elements of the core curriculum, it doesn’t only integrates knowing and doing, but also apply what they have learned in solving authentic problems and produces results that matter. Learners take advantage of digital tools to produces high-quality collaborative products which reward intangible assets such as drive, passion, creativity, empathy, and resiliency.

Table 6
Summary of Extent of Utilization on the Use of Web-Based Learning in Teaching Science Subject

Instructional Approaches	OWM	DE
Inquiry-Based	4.23	Highly Effective
Problem-Based	4.52	Highly Effective
Project-Based	4.35	Highly Effective
OWM	4.36	Highly Effective

Table 6 shows the overall weighted mean of the three (3) instructional approaches which are: Inquiry-based (4.23), of Problem-based (4.52), and Project-based (4.35) with the descriptive equivalent of “highly effective.”

Table 7
Level of Academic Performance of the Learners Using the Web-Based Instruction

Variables	Mean	Median	Standard Deviation	Skewness	Kurtosis
Inquiry-Based					
Pretest	4.87	5	0.82	0.24	-1.48
Posttest	9.00	9	0.86	0.00	-1.67
Problem-Based					
Pretest	4.40	4	1.06	0.14	-1.18
Posttest	9.03	9	0.73	-0.04	-1.11
Project-Based					
Pretest	4.40	4	1.10	0.08	-1.31
Posttest	6.95	7	0.80	0.08	-1.44
Overall					
Pretest	13.67	14	1.74	0.17	-0.63
Posttest	23.44	24	3.26	-0.91	-0.44

Table 7 shows the mean, median, standard deviation, skewness and kurtosis of the pretest and posttest result of the learners in earth science before and after using the web-based instruction for the subject. It is shown that in the inquiry-based pretest have the mean of 4.87 and posttest with 9.00, problem-based pretest has 4.40 and posttest with 9.03, and project-based pretest with 4.40 and posttest with 6.95. It is also observable that the median scores along the different approach's pretest and posttest are near the mean of the scores from the pretest and posttest. The standard deviation of the inquiry-based posttest result 0.86 is higher than the pretest 0.82, while in the problem-based posttest 0.73 than the pretest of 1.06, and on the project-based posttest with 0.80 than the pre-test with 1.10. Blumenfeld & Krajcik (2006) cite studies by Marx et al., 2004, Rivet &Krajcki, 2004 and William & Linn, 2003 state that "research has demonstrated that students in project-based learning classrooms get higher scores than students in the traditional classroom."

In the skewness of the pretest and posttest results, the inquiry-based questions resulted to 0.24(pretest) and 0.00 (posttest) that indicates almost same result on the scores of the learners, while in the problem-based pretest with 0.14 and posttest with -0.04 skewness indicates improvement on the scores, and on the project-based pretest and

posttest with 0.08 that also indicates same scores. On the presented kurtosis, the value of the kurtosis of the pretest and posttest result is near zero (0) then the distribution of the scores is normal, which is visible on the table that the overall kurtosis of the pretest result is -0.63 and posttest of -0.44, therefore the scores of the students in all approaches are normally distributed. Olson (2002) mentioned that the use of web-based instruction recognizes the importance of evaluating its effect on students' outcome when the mode of instruction increases. Comparison of the results with the conventional classroom instruction resulted to "better." However, major differences were noted in technology and presentation rather than instructional content that can obscure the true relationship between the outcomes of the web-based instruction.

Table 8

Significant Difference in the Academic Performance of the Learners in the Pretest and Posttest along the Different Instructional Approaches

Variable	t-value	Sig (p-value)	Interpretation	Decision
Inquiry-Based	-36.482	0.00	Significant	Reject Ho
Problem-Based	-37.981	0.00	Significant	Reject Ho
Project-Based	-19.827	0.00	Significant	Reject Ho
Over-all	-28.809	0.00	Significant	Reject Ho

Tables 8 shows that there is a significant difference in the pretest and posttest results along the different approaches that rejected the null hypothesis. These results presented that there were improvements on the scores of the learners from the pretest to posttest examination. This is parallel to the statement of Punie and Cabrera(2006), an environment supported by Information Communication Technologies (ICT) maybe even possible to imagine when looking at the current widespread diffusion and use of ICT in modern societies, especially the so-called "digital generation." Also, Collins (2006), stated that "Technology provides us with powerful tools to try out different designs, so that instead of theories of education, we may begin to develop a science of education. But it couldn't be an analytic science like physics or psychology, etc.; rather it must be a design science more like aeronautics or artificial intelligence.

Table 9

Significant Relationship Between the Post Test Result and the Instructional Approaches Used by the Teachers

Variable	r	Sig. (p-value)	Interpretation	Decision
Inquiry-Based	-0.115	0.003	Significant	Reject Ho
Problem-Based	0.033	0.000	Significant	Reject Ho
Project-Based	0.082	0.004	Significant	Reject Ho
Overall	0.126	0.000	Significant	Reject Ho

Table 9 shows that there is a significant relationship between the post-test result and the different approaches that rejected the null hypothesis. This means that inquiry-based, problem-based and project-based approaches affect the posttest scores of the learners. Science and technology are now well recognized with multi-disciplinary pursuits essentials for the advancement of knowledge and applications. In connection, Seng (2009) mentioned that education is all about equipping people with the cognitive and socio-emotional skills that are highly adaptable in fast-changing environments.

The need for new science arts of learning is futuristic with problem-based learning. Understanding its perspective as well as the innovative design can take part in its innovated environment.

Summary

The main problem sought to determine the possibility of a web-based instruction possibility of web-based learning in the Science, Technology, Engineering, and Mathematics (STEM) Strand in the K to 12 programs of the Department of Education in teaching science subjects.

Specific problem #1 focused on the (1a) profile of the teacher-respondent namely: sex, age, civil status, status of appointment, academic rank, highest educational attainment, science subject taught, number of years teaching science subjects, and number of relevant training and seminar attended, (1b) profile of the student-respondent namely: age, sex, general percentage average in the previous grade level, number of siblings in the family, parents occupation, parents highest educational attainment, and monthly income of the family.

Specific problem #2 determined the extent of utilization of the web-based learning in teaching science subjects along the following instructional approaches: Inquiry-based, Problem-based, and Project-based.

Specific problem #3 determined the level of academic performance of the learners taught using the web-based instruction in the areas of inquiry-based, problem-based, and project-based regarding pretest and posttest scores mean, median, skewness, kurtosis, and standard deviation.

Specific problem #4 determined the significant difference in the academic performance of the learners in the pretest and posttest along the different instructional approaches.

Specific problem #5 determined the significant relationship between the post-test result and the instructional approaches used by the teachers namely: Inquiry-based, Problem-based, and Project-based.

Salient Findings

The following are the salient findings of the study:

Finding #1a. There are equal numbers of male and female teachers who are teaching earth science in the Urdaneta City National High School (Senior High School). The bracket of 41-50 years old teacher has the highest percentage (75%) compared to the (25%) on the age bracket of 21-30 years old. Three (3) out four (4) respondent teachers are married. Meanwhile, the same percentage is observable for teachers who have a permanent appointment (75%) and provisional (25%). There were two (2) teachers with Teacher II position and two (2) with Teacher III position. All of the teacher-respondents have units in their respective master's degree, but without teaching, experiences and are equipped with seminars and training from regional (100%), school division (100%), and school (100%).

Finding #1b. Most of the student-respondents are in the age bracket of 17-18 years old (91.89%) and 19-20 years old (8.11%). Females (60.36%) are more than males (39.64%). Most of the learners from the group have an average rating ranging from 81-85% (50.45%) and 86-90% (26.13%). There are 53.15% among the student-respondents with two (2) siblings, 32.44% with one (1) sibling, while the others three (3) siblings (4.50%) and 4 and above (4.50%). Their parents are helpers (51.35%), vendor (22.52%), teacher (16.22%), driver (7.21%), and engineer (2.70%). There are 52.25% of parents with a bachelors degree, 36.94% who graduated in high school and remaining 10.81% are with masters degree units. The bracket of P5,001-10,000 in the family monthly income has the highest percentage of 27.93%, followed by P10,001-15,000 (25.23%), P20,001 and above (18.91%), P15,001-20,000 (17.12%), and P5,000 and below (10.81%).

Finding #2. Based on the given statements in the inquiry-based approach, 7 out of 10 resulted to be “Highly Effective,” while the remaining falls under the transmuted equivalent of “Effective.” On the other hand, the problem-based approach has 9 out of 10 which is transmuted to be “Highly Effective,” and the remaining statement falls under “Effective.” Lastly, the project-based approach has 8 out of 10 have a transmuted equivalent of “Highly Effective,” while 2 out of 10, were “Effective.”

Finding #3.the inquiry-based pretest have the mean of 4.87 and posttest with 9.00, problem-based pretest has 4.40 and posttest with 9.03, and project-based pretest with 4.40 and posttest with 6.95. The standard deviation of the inquiry-based posttest result 0.86 is greater than the pretest 0.82, while in the problem-based posttest 0.73 than the pretest of 1.06, and on the project-based post-test with 0.80 than the pre-test with 1.10. In the skewness of the pretest and posttest results, the inquiry-based questions resulted to 0.24(pretest) and 0.00 (posttest) that indicates almost same result on the scores of the learners, while in the problem-based pretest with 0.14 and posttest with -0.04 skewness indicates improvement on the scores, and on the project-based pretest and posttest with 0.08 that also indicates same scores. On the presented kurtosis, the value of the kurtosis of the pretest and posttest result is near zero (0) then the distribution of the scores is normal, which is visible on the table that the overall kurtosis of the pretest result is -0.63 and posttest of -0.44, therefore the scores of the students in all approaches are normally distributed.

Finding #4. There is a significant difference in the pretest and posttest results along the different approaches with the following t-value: Inquiry-based (-36.482), Project-based (-37.981), and Project-based (-19.827) that rejected the null hypothesis. These results presented that there were improvements on the scores of the learners from the pretest to posttest examination.

Finding #5. There is a significant relationship between the post-test result and the different approaches that rejected the null hypothesis. The following p-value was noted: Inquiry-based (0.003), Problem-based (0.000), and Project-based (0.004).

Conclusions

The following are the conclusions drawn from the salient findings:

1. The teacher-respondents are qualified to teach because of their current enrolment to their respective master's degree and engagement to different seminars and training in the regional, division, and school level. The student-respondents are equipped with enough knowledge which is observable on the percentage of their general average. Also, most of the parents of the student-respondents are with bachelor's degree that could be a basis that they were assisted at home.
2. Most of the extent of utilization of web-based learning along the different approaches in teaching science is highly effective. All remaining variables are noted to be effective.
3. Improvement of the posttest result was noted using the web-based instruction. The scores of the students in all approaches are normally distributed.
4. There is a significant difference in the pretest and posttest results along the different approaches that rejected the null hypothesis. These results presented that there were improvements on the scores of the learners from the pretest to posttest examination.
5. There is a significant relationship between the post-test result and the different approaches that rejected the null hypothesis. Inquiry-based, problem-based and project-based approaches affect the posttest scores of the learners.

Recommendations

Based on the findings and conclusions presented, the following recommendations are suggested.

1. Continuous seminars and training for the senior high school teachers should be maintained to equip them with knowledge in the field of teaching.
2. The researcher recommends that the used of web-based learning materials should be used with the different approaches namely: Inquiry-based, Problem-based, and Project-based in teaching earth science.
3. While the researcher found out the improvement of the learners score on the posttest result of examination for earth science, it is still recommended to develop different instructional materials that can aid in the development of knowledge and skills of the senior high school's students to prepare them to the higher educational institution standards
4. It is also recommended that the future researchers of this study will try to develop another innovated instructional tool with another teaching approach that will increase the competencies of the learners to the digital world.

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***Investigation of Grammatical Instruction on Pragmatics of Thai EFL Learners:
A Case of 1st Year English-Major Students***

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

Investigation of Grammatical Instruction on Pragmatics of Thai EFL Learners: A Case of 1st Year English-Major Students of Nakhon Phanom University, Thailand aims to investigate whether the grammatical instruction affects pragmatic acquisition of Thai EFL learners' scores, and to examine what types of the request speech act influence pragmatic acquisition of Thai EFL learners are. The samples are 31 students, categorized by the purposive sampling studying in the English Major at the Faculty of Liberal Arts and Science, Nakhon Phanom University. The instruments are the pretest and posttest of Discourse Completion Test (DCT), grammatical tasks, exercises, role-plays, and interviews. Statistics used in the research conduct is t-test. The results reveals that the posttest scores ($Mean = 6.39, SD = 2.33$) were significantly higher than the pretest scores ($Mean = 3.16, SD = 1.85$), indicated by $t(30) = 8.05, p < .05, d = 1.53$. The grammatical instruction used in pragmatics was effective, and the students were able to effectively improve their pragmatic acquisition ability. There are 12 types of speech acts frequently used by learners. The three most frequency used by Thai EFL learners are Attention-getter accounting for 30.28 %, Softeners accounting for 20.80 %, and Emphasis of Importance accounting for 15.90 % . The three least frequency used by Thai EFL learners are Intensifier accounting for 0.91%, Hesitators accounting for 0.31%, and Disarmers accounting for 0.31%. Pragmatic acquisition on speech act should be taught as a topic in courses and in the curriculum for longitudinal study.

Keywords: Pragmatics, Grammatical Instruction, Speech Act

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Introduction

Pragmatics have been continuously studied and developed to enhance EFL learners for decades. In reality, the uses of pragmatics are still unsuccessful in pedagogies particularly in the countries where language learners use English as a foreign language. There are several approaches based on pragmatic transfers proposed for L1 to acquire L2 properly and successfully in different ways: pragmatic transferability, pragmatic transfer development, relationship between L1 pragmatic transfer and L2 proficiency, pragmatic awareness on L1 acquiring L2, etc. Though the wide-ranged findings are found by many researchers worldwide, the longitudinal studies have constantly been conducted so as to fulfil the proper frameworks as well as methods of teaching pragmatics suitably for Second Language Acquisition. According to the previous studies, some theory approached by many researchers mentioned above, pragmatics transfer is still examined around the global. Learners should acquire the proper L2 by instructors when learners utter their conversation with native speakers. Other scholars like Harling (2001) suggested that the large effect of intensity of interaction on L2 pragmatic development is obvious when learners were given more chances to access the target expression, they are familiar with those expression. In addition, to enhance learners to learn the right ways of transferring the language appropriately, there are also other aspects influencing pragmatic acquisition of learners. Kasper and Rose (2002) stated that learners use pragmatic functions in L2 before acquisition of linguistic forms for recognition in the correlation between grammar and pragmatics. However, grammatical structure is one important feature which mainly affects how EFL learners acquire pragmatics properly and nearly in the real contexts of the native speaks. Takahashi (2017) indicated that learners who have enough grammatical knowledge tend to notice the target forms in the input and use bi-clausal form in the posttest performance. Some studies of pragmatic awareness have failed to explore how grammar interacts with various other ID factors and how these factors are concerned in the form-function analysis of the input overall.

Among the EFL learners of Nakhon Phanom educational institutions, private and public sectors, pragmatics have not primarily been put in the pedagogies overall. Consequently, learners themselves have lacked the knowledge on how to deal with the different persons and situations by using the accurate words in the social contexts—the suitable ways to utter with the persons who are at the lower, equal, and higher status. The improper communication uttered by between EFL learners to NSs, or even by Thai EFL learners and Thai instructors is probably caused by lack of language knowledge, sociocultural background, cross-cultural linguistics, etc. These have still occurred not only in pedagogies but in daily life conversations. Moreover, according to the previous class project of the SLA course in the first semester of academic year 2017 on the investigate pragmatic transfer in Thai EFL learners, the results revealed that the first year English-major students were not able to transfer L1 to L2 completely, mainly because of two factors: their L2 socio-cultural background, and grammatical structure.

Subsequently, the researcher is interested in investigating how grammatical structure instruction enhances EFL learners on pragmatic transfer in the case of the requesting speech acts.

Hypothesis

- 1). The grammatical instruction affects the scores of Thai EFL learners.
- 2). There are various types of the request speech act produced by Thai EFL learners.

Research questions

1. Does the grammatical instruction affect pragmatics of Thai EFL learners' scores?
2. What type of the request speech act influences pragmatics of Thai EFL learners?

Definitions

1. **Pragmatics:** Pragmatics are widely defined as comprehensible, problematic, conventional and sociocultural definitions (Kasper, 1998). Kasper and Rose, (2002) also pointed out that pragmatics are as the study of language use produced by the perspectives of users' utterances when they make the communication with others, they face with constraints in language use in social interaction as well as in the communication act.
2. **Speech acts:** Speech acts are what the users utter in a daily life conversation. They are not only the primary sentences when the users utter to another person but the utterances used to make communication in the various forms of requests, warnings, invitations, promises, apologies, predictions, etc. (Stanford Encyclopedia of Philosophy, 2007)
3. **Request:** Requests are identified as possibly face frightening acts (Brown and Levinson, 1987). It is a close relationship between the politeness degree and the indirectness degree of requests to suggest the speakers to require face work from the listeners (Butler, 1988). For the literature reviews, the study will described in the literature reviews.

Literature reviews

The Investigation of Grammatical Instruction on Pragmatics of Thai EFL Learners: A Case of the 1st Year English-Major Students of Nakhon Phanom University is concerned with four relevant issues reviewed as follows: 1) definitions of pragmatics, interlanguage pragmatics and pragmatic transfer, 2) pragmatic transfer in language proficiency, 3) pragmalinguistic awareness, and 4) effect of instruction on learners' Pragmatics awareness.

I. Definitions of Pragmatics, Interlanguage Pragmatics and Pragmatic Transfer

Pragmatic normally is the way that learners transfer their L1 into the target language properly. In other words, it is the Concepts, widely defined as comprehensible, problematic, conventional and sociocultural (Kasper, 1998). Interlanguage pragmatics are the production and comprehension of non-native speakers toward pragmatics— to look at how L1 learners acquire the L2 learners which is related to knowledge on language transfer. In addition, interlanguage pragmatics plays an important role for both instructors and learners, especially speech act intercultural misunderstanding because of L1 background towards the sociocultural norm, and convention in the target language (Takahshi, 1996).

Besides, pragmatic transfer is the sociolinguistic transfer that is the way of learners on transferring L1 sociocultural competence in the contexts of cross-linguistic influence, discourse analysis transfer —transfer of conventional features (Kasper, 1998). From another different study, interlanguage pragmatics, and pragmatic transfer are also defined as the influence, applied by learner's pragmatic knowledge of language and cultures rather than the comprehension of L2, L2 pragmatic learning as well as production (Kasper, 1992).

To sum up, pragmatics, interlanguage pragmatics and pragmatic transfer are related to second language acquisition among L2 on interference and avoidance language that is to embody the learners' competency of what the L2 is transferred or what is not transferred. In other words, it is the language influence of positive (facilitators) and negative (errors) transfer. Pragmatic transfer also involves an influence of L1 on acquiring L2 based on the various contexts of pragmatic knowledge, sociocultural, intercultural communication, and socio-linguistics as well as discourse analysis transfer.

II. Pragmatic Transfer in Language Proficiency

Pragmatic Transfer has been found in many periods for developing language proficiency of L1 to acquire L2 under particular frameworks and methods designed. In terms of language proficiency, pragmatics is necessary for learners due to the fact they inevitably interact with native speakers through their utterances; therefore, the appropriate and polite words performed by learners are the important issue in communicating successfully and avoiding confusion between the speakers and listeners. The materials and methods used to reinforce learners were developed continuously due to the misunderstanding of communication between L2 and native speakers when learners need to transfer NL or L1 to L2. In other words, there is the failure of L2 on language transfer as Thomas (1983) argued that students are overlooked by teachers to criticize impoliteness words when communicating with others. The example of negative pragmatic transfer is shown below when Japanese learned needed to express gratitude in English to a native speaker:

English Speaker: Look what I've got for you! (maybe a gift)

Japanese: Oh! I'm sorry (*thank* you does not sound sincere enough in Japanese)

English speaker: Why sorry?

Another example of Patricia (1998) states in the incorporation language of how L1 shows the negative outcomes of sociopragmatic transfer from L2 to L1 on expressing gratitude in American English using the words, *thank you*. The Puerto Rico informant living in the US for several years when she described *thank you* as the feeling of when she felt hurt and angry her father after she said "thank you" while the father was taking care of his grandchild.

As it can clearly be seen that pragmalinguistics and sociolinguistics consist of both similar and different aspects among learners when they need to transfer their native and target language. In the role of teacher, Patricia (1998) indicates that students should be assisted to be aware of and enhance pragmatic knowledge in order to transfer the suitable pragmalinguistics and sociopragmatic use in the target language.

Apart from pragmalinguistics and sociopragmatic use in the target language, after the researcher came across the literature review, there are diverse pragmatic transfer studies used for reinforcing learners' L2 proficiency proposed. The studies reviewed can be divided into two following main themes.

1). Pragmatic Transferability in Speech Act

Speech act is broadly approached to examine the language transfer in L1 to equivalent L2. There are many research conducts designed in interlanguage to the target language.

Takahashi (1996) studied on the problematic transferability by investigating Japanese EFL in Tokyo to examine about a Japanese request strategy that is more transferable when the L1 request strategy is perceived as more appropriate and its L2 equivalent is perceived in the same degree of contextual appropriateness. Besides, to study a Japanese request strategy is less transferable when the L1 request strategy is perceived as less appropriate. In addition, its L2 equivalent is perceived for conveying a different degree of contextual appropriateness. The findings found that the students' pragmatic competency was not similar to the native speakers'; moreover, the learners tended to use "Would you please" when encountering a L2 high-imposition situation. They were gentle enough to the various degrees of imposition in their transferability decisions.

The niche of this study found that the sample group is only male which might tend to invalidate the testing the imposition aspect. Moreover, Takahashi also pointed out that the effectiveness of formal instruction on IL pragmatic competency development should be further studied because of the instructional effects on the acquisition of morphosyntax which will be comprehensive for pragmatics.

Another situation on language proficiency so as to aid learners in bettering the pragmatic performances in EFL and to contribute knowledge on ILP behavior of the Algerian learners of English as a Foreign Language as Dendenne (2014) examined on transfer in interlanguage requests performed by Algerian EFL, to know the production of pragmalinguistics and sociopragmatic transfers presenting in EFL learners' production, and other features that characterize ILP of Algerian EFL learners. The results revealed that the Core Request, maintaining a higher level of directness using simple imperatives perhaps sound rude for NSs. Asking help from a stranger may be perceived as an invasion of the stranger's territory, signifying on rudeness. In pedagogy, teaching the speech act and request require concern about the teaching material, explicit instruction, and the effort on performing the speech. The pedagogical method suggested to enhance learners on understanding pragmatic comprehension is to spend more years of teaching is a better chance for teachers on acquiring knowledge.

Based on the situation of an awareness of cultural background of people in terms of socio-cultural context on communicating effectively and the investigation between native speakers and EFL learners' recognition of the speech act, Alemi and Khanlarzadeh (2016) indicated that in the pragmatic assessment of request speech act of Iranian EFL learners, the results showed that there are nine conditions as well as six request situations noted by raters in the pragmalinguistic and language socio-pragmatic components. Under these criteria of NNESRs, politeness, conversers' relationship, style and register, and explanation have an abundant significance.

Speech acts are also taught through various skills such as speaking, listening and writing. In writing, it is complicated for EFL learners to produce their speech acts suitably because of the diverse elements of writing to communicate with NSs. Devecia and Hmidaa (2017) stated that in the request speech act in emails done by Arab university students in the UAE, that the native English speakers and Arab learners of English were somewhat significant in discourse structure, strategy type, modified. Email teaching through the conventional context affected the competency of students' pragmatics in terms of academic feature.

Learners are enabled to transfer their native social and cultural rules into the target language, to achieve appropriate language behavior as Jiemin Bu (2012) examined the relationship between L1 Pragmatic and L2 Proficiency by focusing on understanding the social and cultural rules which constrain the target language and L1 pragmatic transfer on decreasing and increasing of L2 proficiency in forms of direct strategies, lexical and phrasal downgrades, imperatives and grounders. It is found that relationship found between L1 and pragmatic transfer and L2 proficiency of the other request strategies, internal modifiers and external modifiers are not clear. High proficiency L2 learners could have less occurrence of transferring their native language pragmatic customs, since they have not enough background knowledge of L2.

2) Pragmatic Development in Speech Act

Among the pragmatics acquisition, pragmatic development in EFL has been commonly focused on. Wijayanont et. al (2013) studied Pragmatic Development in a Foreign Setting by Indonesian learners of English: Evidence from Non Pedagogical Intervention by investigating pragmatic development in non-pedagogical intervention setting of Indonesian learners of English L2 pragmatic aspects versus independent implicit learning. This study focuses on investigating the development of direct and indirect strategies of complaint. It is indicated that the pattern of development was complicated for each individual. Indirect strategies were used in less than half of the participants' strategies. L2 pragmatics are able to develop in a foreign country setting, and the pedagogical interference should be done; otherwise the development is not able take place in all language learners.

Apart from speech act studies used in pragmatic transfer a get Language Culture Instruction and Pragmatic Comprehension Development in Malaysia to investigate the issue of the relationship between attitudes toward incorporating target language culture into classroom instruction and the development of pragmatic comprehension. It is revealed that positive attitude toward learning target language affects to a higher level of pragmatic comprehension. To aid of foreign language course books and the instruction of foreign language classroom instruction based on cultural information is suggested for further study.

Speech act production doesn't only concern the instruction that mainly occurs cognitive process. Nevertheless, there are few studies that proposed this assumption. Consequently, Eva Alcon Soler et. al (2010) explore the effect of instruction on learners' pragmatic awareness from speech acts of learners by focusing on refusals under the two hypotheses: learners' awareness of pragmalinguistics and

sociopragmatics. It is suggested that pedagogical instruction influences the distinguishing of learners' awareness of refusals.

As it can clearly be seen, pragmatic transfer in speech act reviewed above, the request strategy in form of indirect speech and core request are often used to transfer L1 to L2. However, studying on multimedia design should be added as further tools to learn ridiculous types of speech act which are from the learners' backgrounds. Moreover, the additional foreign language classroom instruction of the target language should be discussed through cultural knowledge. Teachers themselves are required to be more trained on pragmatics for learners' empowerment.

III. Pragmalinguistic Awareness

Pragmalinguistic awareness has broadly been found from the previous studies on pragmatic investigations. Takahashi (2005) examined pragmatic linguistic awareness to explore whether it is related to motivation or proficiency in the Japanese EFL learners' pragmalinguistics awareness of L2 implicit input process and the learners' awareness of the target features whether it is relevant to motivation and proficiency. Japanese EFL learners tend to emphasize on discourse markers and idiomatic expression rather than complicated request head act. For instructional settings, the colloquial English is less possible to do than the discourse markers. Students should be persuaded to be in the in-input environment of EFL classroom. Based on Takahashi (2012; 2013; 2014; 2015) initially tried to explore the effects of motivation and listening proficiency as variables of individual differences (ID) on pragmatic awareness and the complicated request form learning. She also examined the integrated grammatical development with obvious pragmatic competence supported by Kasper & Rose (2002), it was found there are two standard of studies prepared for interpreting relationship between grammar and pragmatics. Later on, Takahashi (2012) investigate the effect of the ID variables on learners' awareness by using bi-clausal request form, the listening proficiency variables are two of the four motivation subscales and the pragmatic awareness of the target forms.

In addition, Takahashi (2017) has conducted Pragmatics-Grammar Interface in Pragmalinguistic Awareness and Learning by investigating the possibility and degree of grammatical knowledge of Japanese EFL learners for the awareness of target bi-clausal request forms which is prepared in the implicit input and their learning of the complicated form. Learners who have enough grammar knowledge tend to notice the target forms in the input and use bi-clausal form in the posttest performance. For the various ID factors: motivation and listening proficiency can be brought to the in-depth analysis of form function mapping toward autonomous learning.

Pragmalinguistic awareness is related to the learner's motivation especially basic motivation, therefore, to increase the chances of pragmatic feature observation based on the implicit criteria, the learners' motivation should be motivated in various ways. Some studies of pragmatic awareness has failed to explore how grammar interacts with various other ID factors and how these factors are concerned in the form-function analysis of the input overall (Takahashi, 2017).

IV. Effect of Instruction on Learners' Pragmatic Awareness

Interlanguage pragmatics have been focused on the scope of language pedagogy, suggestion are produced for techniques and activities to develop learners' pragmatic awareness on speech acts. Speech acts are still used to approach EFL learners. There are various techniques used to raise learners' awareness, like TV series strategies, films to explore the refusal teaching at the discourse level are effective as information a and teaching at the discourse level is operative as learners' awareness of refusals (Soler & Pitarch, 2010).

As scholars' investigate the effects of instruction on learners there are two main advantages of pragmatic pedagogies on learners' attention and consciousness of pragmlinguistic and sociopragmatic topics based on the refusal speech act. They are 1) the planning of teaching actions perhaps work on pragmatic instruction in the context of EFL should prepare learners for audio pragmatic input, and 2) being aware of various pragmatic meaning comprehension to work with pragmatic consciousness raising tasks. Another is an instruction refusal speech act at the level of discourse probably assist to help learners for learning speaking skills indirectly like turn-taking or negotiation methods; hence, instructors should not ignore bringing the speech acts through pragmatic instruction (Soler and Pitarch, 2010).

As pragmatic concepts mentioned above, there are different gaps and limitations on longitudinal and experimental studies, and the same number of participants should be controlled equally. Interviews of the learners should be of one method to test their attitudes towards pragmatic comprehension across L2 culture. Moreover, awareness of pragmatic grammatical knowledge is important for an experiment study based on learners' backgrounds should be concerned. The class project was investigated on pragmatic transfers of the first-year students of English major in Nakhon Phanom University in the first semester of academic year 2017, and found that students have encountered low L1 proficiency and lack of L2 socio-cultural background knowledge as well as grammatical knowledge. Thus, to fill the gap, the researcher is interested in enhancing EFL learners to acquire proper ways of transferring the L1 into L2 in the diverse situations appropriately.

Methodology

The study of The Investigation of Grammatical Instruction on Pragmatics of Thai EFL Learners: A Case of the 1st Year-English-major Students of Nakhon Phanom University aims to address the following two hypothesis.

- 1). The grammatical instruction affects the scores of Thai EFL learners.
- 2). There are various types of the request speech act produced by Thai EFL learners.

These lead to the two following research questions:

1. Does the grammatical instruction affect pragmatics of Thai EFL learners' scores?
2. What type of the request speech act influences pragmatics of Thai EFL learners?

Therefore, respond to the above two research questions, the study will focus on the class project based on the research methodology described below.

Participants

The participants in this study were the undergraduate students. They were from the two groups of the first year Thai EFL students studying in the English major of the first semester in the academic year 2017 at the Faculty of Liberal Arts and Sciences, Nakhon Phanom University. These participants were 4 males and 27 females from 31 of 35 from the two classes, aging from 17-19 years old. The 4 students of 35 who participated in the first week of doing the pretest were finally cut out of the whole sample group due to their not showing up to be tested in the second week. All participants were classified by the purposive sampling which they have various English proficiency skills.

Instruments

The instruments used in this study were the pretest and the posttest of Discourse Completion Test (DCT) consisting of 10 items of Thai requesting situations and 10 items of English requesting situations. The 10 situations of the posttest were different from the pretest. The materials used after teaching comprised the 16 types of the request speech act adapted from Blum-Kalka et al, (1989) and Alcon, (2005), model verbs, grammatical comprehension tasks, Thai and English email writing tasks. There were two pragmatically equivalent versions of the DCT, one in English and the other one in Thai. Both pretest and posttest of English were edited by the American native instructor in order to make sure that these versions were reasonable situations and accurate structures. These ten situations were then given to students, divided based on the social class categorized in the table below.

Test	Social status			Total situations)
	Lower	Equal	Higher	
Pretest	2	4	4	10
Posttest	1	4	5	10

Figure 1: Size of Imposition

Frameworks

The unit of analysis requests in the discourse completion test questionnaire provided consists of speech act which is called requested semantic formulas among the utterances or sequences of utterances. From this study, the coding scheme of requested semantic formulas is mostly based on the coding scheme of request from CCSARP developed by Blum-Kulka et al, (1989) and Alco, (2005). The requested semantic formulas are divided into two categories: request strategies, internal modifiers and external modifiers as indicated below.

Modification Devices				
Type	Subtype		Example	
Request strategies	Want statement		-I want you to help me my homework.	
	Hedge performatives		- I would like to ask you to wash the dishes.	
Internal Modification	Openers		-Do you think you could open the window? -Would you mind opening the window?	
	Softeners	Understatement	-Could you open the window for a moment?	
		Downtoner	-Could you possibly open the window?	
		Hedge	-Could you kind of open the window?	
		Intensifiers	-You really must open the window.	
			-I'm sure you wouldn't mind opening the window?	
		Filters	Hesitators	-I er, erm, er- I wonder if you could open the window.
			Cajolers	-You know, you see, I mean
			Appealers	-OK?, Right?, yeah
			Attention-getter	-Excuse me...; Hello...;Look...; Tom...; Mr. Edwards...; father... ..
	External Modification	Preparator		May I ask you a favor...?...Could you open the window?
		Emphasis of Importance		Please clean it up. Don't forget.
Grounders			It seems it's quite hot here... Could you open the window?	
Disarmers			I hate botherin you, but could you open the window?	
Expanders			Would you mind opening the window? ...Once again, could you open the window?	
Promise of reward			Could you open the window?...if you open it, I promise to bring you to the cinema.	
Please			Would you mind opening the window, please?	

Figure 2: The Coding Scheme of Request Strategies of New Taxonomy adapted from Bulm-Kulka et al. (1989) and Alco, (2005)

Procedures

The study spent 4 weeks of conduct for the 31 first year English-major students. First, the posttest of 10 Thai and 10 English situations were administrated to 31 students in the first week. The request speech act models were taught through the 16 taxonomy including the model verbs in the second week. Then in the third week and the fourth week, students were given the grammatical comprehension tasks, pragmatic Thai and English tasks, pragmatic email writing, random role-play and random interview, and finally the posttest in the same day.

Data collection

One group from two classes of the first year students was collected by purposive sampling. In this study, within one group of the research conduct, the researcher divided students into three groups so as to order the tasks used – to examine whether the material order instruction affected the scores of students. The materials order was designed as the diagrams below.

Group 1 = Pretest → teaching → Exercise 1a → Exercise 1b → Exercise 2 → Email writing → posttest

Group 2 = Pretest → teaching → Email writing → Exercise 2 → Exercise 1a → Exercise 1b → posttest

Group 3 = Pretest → teaching → Exercise 2 → Exercise 1a → Exercise 1b → Email writing → posttest

Data analysis

The data collected for this study were analyzed according to models of the request speech act. The two American-native speakers and Thai instructor are the inter-raters for giving the model pattern based on the scores of 0 and 1. 0 means students were able to produce pragmatics incorrectly based on grammatical context and speech act model, whereas 1 means students were able to produce pragmatics accurately or nearly accurately, based on the speech act model and grammatical context.

To check the frequency of the request speech act produced by learners, coding was done in order to group the category of speech act that occurred for the research conduct. Statistics of t-test and One-way Anova were brought to analyze data. The results of the study will be described in the results and discussions.

Results and Discussions

The study of the Investigation of Grammatical Instruction on Pragmatics of Thai EFL Learners: A Case of 1st Year English-Major Students of Nakhon Phanom University aims to two address research questions: Does the grammatical instruction affect pragmatics of Thai EFL learners' scores? and What type of the request speech act influences pragmatics of Thai EFL learners?

The DCT posttest used in this study consists of 10 situations of English ranging from the lower, equal and higher social status when the learners uttered with waiters, peers, strangers instructors, doctor, and mother. They were classified into 1 situation

involving lower social status, 4 situations involving equal status, and 5 situations involving higher status of the addressee. Therefore, to respond to RQ1: Does grammatical instruction affect pragmatics of Thai EFL learners' scores? in the Paired Samples Test, the results showed as below.

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Posttest	6.39	31	2.333	.419
	Pretest	3.16	31	1.846	.331

Paired Samples Test

		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
Pair 1	Posttest - Pretest	3.226	2.232	.401	2.407	4.044	8.048	30	.000

Figure 3: The Paired Sample T-test

The results revealed that the posttest scores (*Mean* = 6.39, *SD* = 2.33) were significantly higher than the pretest scores (*Mean* = 3.16, *SD* = 1.85), indicated by $t(31) = 8.05$, $p < .05$, $d = 1.53$. That means, the grammatical instruction used in pragmatics was effective, and the teacher could effectively improve their learners' skills.

Effect size: Cohen's $d = 1.53536465$

Therefore, to reply to the first research question, it is stated that grammatical instruction affects scores of Thai EFL learners.

After the researcher tested the hypothesis that the grammatical instruction affects the scores of Thai EFL learners, it was found that learners improved their learning as the scores of between the pretest and the posttest according to the paired samples t-test. However, the scores of the pretest and the posttest could not identified that instruction affects the learners' score level; therefore, the researcher tested the hypothesis by using one-way anova in order to compare the teaching method through material order pedagogy. It indicated that the material order did not affect the posttest scores of learners. When looking at an individual material task used in between and within groups shown in one-way anova table below, it indicated that there were not significantly different. That means the material order did not affect the learners' posttest scores.

Oneway

[DataSet1] D:\UBRU\data P Koy.sav

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Ex.1a	Between Groups	28.774	2	14.387	2.085	.143
	Within Groups	193.162	28	6.899		
	Total	221.935	30			
Ex.1b	Between Groups	9.102	2	4.551	.475	.627
	Within Groups	268.317	28	9.583		
	Total	277.419	30			
Ex.2	Between Groups	.297	2	.148	.103	.903
	Within Groups	40.413	28	1.443		
	Total	40.710	30			
Email	Between Groups	9.209	2	4.604	2.472	.103
	Within Groups	52.146	28	1.862		
	Total	61.355	30			
Total	Between Groups	84.835	2	42.418	1.219	.311
	Within Groups	974.584	28	34.807		
	Total	1059.419	30			

ONEWAY Posttest BY Methods
/MISSING ANALYSIS.

Figure 4: Material Order

Thus, there were other factors involved in the influencing the learner acquisition such as lexical use, word recognition, sentence construction, etc. involved. These were brought to the second hypothesis that is there are other factors influencing learners on pragmatic acquisition. Hence, to find the answer of the second research question. RQ2: What type of the request speech act influences pragmatics of Thai EFL learners?

The results revealed that students were able to produce pragmatics of the request speech act differently. There were 327 frequencies used by students classified by 12 types. The three frequently used by Thai EFL learners are ATG (Attention-getter) accounting for 30.28 % (99 times), SOF (Softeners) accounting for 20.80 % (68 times), and IOI (Emphasis of Importance) accounting for 15.90 % (52 times) respectively. Whereas the three least frequently used by Thai EFL learners are INT (Intensifier) accounting for 0.91% (3 times), HST (Hesitators) accounting for 0.31% (1 time), and DAM (Disarmers) accounting for 0.31% (1 time) respectively.

Coding	Type	Frequency	Percent
1. ATG	Attention-getter	99	30.28
2. SOF	Softeners	68	20.80
3. EOI	Emphasis of Importance	52	15.90
4. HP	Hedged performance	32	9.79
5. PRP	Preparator	21	6.42
6. OPN	Openers	20	6.11
7. TIT	Time Intensifiers	14	4.28
8. MRL	Moralizing	11	3.36
9. POR	Promise of reward	5	1.52
10. INT	Intensifiers	3	0.91
11. HST	Hesitators	1	.31
12. DAM	Disarmers	1	.31
		327	100

Figure 5: Type of Frequency for Request Speech Act

For the conclusion of the study will be describe in the conclusion.

Conclusion

This study explored the Grammatical Instruction on Pragmatics of Thai EFL learners of 1st Year English-Major Students of Nakhon Phanom University by the two hypotheses: 1) The grammatical instruction affect pragmatics of Thai EFL learners' scores and 2) there are various types of the request speech act influences pragmatics of Thai EFL learners.

The findings of the study showed that Thai EFL learners obtained the higher scores after learning through the grammatical instruction on pragmatics. There are 12 types of speech acts frequently used by learners: Attention-Getter, Softeners, Emphasis of Importance, Hedged Performance, Preparator, Openers, Time Intensifiers, Moralizing, Promise of Rewards, Intensifier, Hesitators, and Disarmers.

Limitations

Some week during the conduct, the researcher could not find sufficient time to meet participants as often as the researcher needed. Instead, the researcher had to find the leisure time after their normal classes to conduct the study. Consequently, the participants did not more concentration to participate this study. The learners did the Thai pragmatic version before the English ones given; thus, some looked at what they had written in Thai before then they did the English version. This perhaps caused them to recognize their L1 context to transfer L2 for the ones. In addition, the four-week research period as not adequate to enhance pragmatic acquisition among EFL learners because they could not recognize all patterns of the request speech act as well as grammatical structure acquisition. More importantly, in terms of size of imposition and social status, the comparable situations between the pretest and the posttest must be the same amount so as to make the study more reliable, valid and accurate.

Recommendations

Before doing the posttest, students were randomized to make the role-play after they finished pragmatic acquisition, and about 80 % of them randomized could do orally well. The sentences which students always used while producing pragmatics were: could you please....?, would you like...?, would you mind....?, would you please....?, May I...?, Excuse me, where theis, and please give me..., and would like...

For interviews, students need approximately four months to comprehend pragmatic acquisition, instead of only one month. They could perceive that the request speech act is essential to their daily life when they dealt with the diverse persons in different situations. They were able to pick up the polite request in every day conversation. They gained more ways and be more confident to ask the native speakers more. They need to learn individual pragmatics with instructors, particularly with native speakers. They also obtained more vocabularies, idioms, grammar for pragmatics. For the email pragmatic learning 2-3 sessions of learning will be good for students to comprehend the contents very well. To be more effective on pragmatic acquisition, students are required to learn through the real environments, like going out-door, and

via various materials such as Youtube videos, movies, unreal situations, and socio-cultural pragmatics in the longitudinal study.

Implications

Pragmatic acquisition of the request speech act is an implication for pedagogy. It should be added as one of the topics in the listening and speaking courses and integrated with other courses in the English curriculum in the future. For further study, the researcher will extend the scope of study pragmatics by comparing the international students among EFL learners: Thais, Laotians, and Vietnamese based on the Quasi Experimental research which will be conducted in the research. The next time the research is conducted, the study will classify the samples and the teaching strategies more effectively in order to accomplish students' pragmatic acquisition more efficiently.

Acknowledgements

This study would not be successful without a very kindness of my lecturer, Asst. Prof. Dr. Angkana Thongpoon Phattanasorn, currently works as the chair of Apply Linguistic Program at Faculty of Humanities and Social Sciences, Khon Kaen University who suggested and commented before and after the research conduct. Besides, I would like to thanks Ms. Wittika Thangchan, a lecturer of Department of Hospitality and Event Management, Faculty of Business Administration and Accountancy, Khon Kaen University for data analysis suggestion. Lastly, I would like to thanks Mr. Lloyd Wagner, a US proof reader for this research article.

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Comparison of the Learning Curve and Adaptive Behavior from Kids to Adults who Create Mobile-Apps and Little Robots Using Block-Programming

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

Block programming presents an interactive and very simple way to learn to program, today block programming applications allow you to develop and program the electronic hardware components such as sensors and motors, whose relationship between hardware, software and mobile applications are fundamental in this technological age. In this article we present a study on how much the speed of learning differs and how much information retention capacity children, adolescents and adults have in the same conditions of learning, environment, tools and teaching system with the topic of creating robots through simulation of electronic circuits. In addition, the manipulation of electronic components such as sensors, motors and Bluetooth is presented.

Keywords: Learning, Education, Robotics, Kids, Teenagers, Adults, Programing languages, Block Programming

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Introduction

In the context of Peru, the education methodology is not enough to complete a certain level of knowledge. Our target study subjects are people between the ages of 9 and 45, because is the 57.232% of the total population (information was collected from [1]). Kids (6-9 years old) have more easily way to learn and play with new tools [2], Teens (10-12 years old) and Juniors (13-17 years old) have the same capacity to learn, but they have another distractions that causes a little reduction in the learning curve for new things [3].

Adults (from 18 years old and on) have a different way to learn things about technology, some of them have experience working with computers but others do not use computers in daily life. We have approximately 100 children, 100 teens, 100 junior and 100 adults, each group is divided into a group of 25 people with the same curriculum, the same materials, the same teachers and the same 16 lessons (each lasts 3 hours a day).

Currently, in Perú we have a lot of devices distributed in all families, adults, teens and kids. Is very common see a kid with a tablet or mobile phone at 8 years old playing games or using social networks (with parental control like facebook) or watching videos about youtubers (gamers with minecraft channels, fornite, etc).

In this context, we have technology in our hands every day any time, but in education until this time, schools separate technology for the classrooms, schools don't use technology to teach and don't teach how to use technology responsibly. So, this create a disorder in the generation gap between people who use technology only for play games and those who do not use technology to improve techniques or methodologies to teach or learn new things.

In other words we have population that explode technology in any another aspect except in education and our consequence is that schools don't teach programming at early ages, our young people learn computer concepts or how to programming in the university at age between 20 and 22 years old. We try to break the gap through free courses of computational thinking and algorithm design concepts hidden in courses called "Robotics for everyone" or "game development for everyone" using different methodologies describe in the present work, preparing people of all ages to a better understand of computer concepts and improve computer skills.

For this situation with help of our universities we organize a course that involves learning computer science concepts to develop simple programs using C and python language and build robots with Arduino board.

For that, we measure how fast is the adaptive behavior of our students and how fast increase the understanding of these concepts. We hide the concept of Computational Thinking inside of "how to teach computer science using block programming" because computational thinking is the way that any person can interpret the world in a computer and how can extrapolate these concepts to real world. So while we teach about how interpret computer science concepts, we teach how is computational thinking works in our lives [4].

Definitions and techniques

We need to understand important concepts those we use in our research, those concepts are very useful when we try to measure and expose about the progress or difficulties of the students while they are learning new things with enhanced methods through technology. We use Learning Curve to define how they understand new concepts and Adaptive Behavior to define performance and attitude against new concepts.

Learning Curve

We introduce the concept of Learning Curve as the representation how to increases the learning based on experience. also, measuring if the student solve problems better than before times.

Adaptive Behavior

We introduce the concept of Adaptive Behavior as how students accept or reject new concepts. Also, we know that adults, kids and teens have different ways to learn and understand things. The adaptive behavior is notorious when in the learning process they can use examples based on computer science concepts or make jokes with computers or with some new concepts than they never used before.

Script Language

Script Language is a technique used to explain concepts in an very short time with simple examples, script languages are defined as a normal conversation with specific questions, the answers could be any but in all of these answers, there is a concept hidden inside.

Metaphors

Metaphors is used to complete the understanding of the concepts givins another examples based on the previous one, metaphors is very commonly used in the daily activity, in any situation because is the most easy way to explain new things. we use metaphors to exaplin computer science concepts with common examples.

Mind maps

Mind maps is a technique based in drawing a map based on a brain storming with connected ideas like a graph \cite{mind_map_ref}. We use Mind maps to teach about mathematics concepts, programming concepts and algorithm design concepts \cite{teach_mindmaps_programming}.

Block Programming

Block Programming is a technique to encapsule code programming in a simple sentence and the way to programming is just joining the blocks following a flow diagram or main idea. In this research we try to test how efficient is teach computer science concepts and examples using block programming in a first steps and how fast our students can improve skills programming to jump from blocks to code in simple programs like programming sensors or programming games, in this work we encourage to our students and our readers to practice to

thinking in blocks \cite{thinking_blocks} and think how easy could be the learning for future generations topics like IoT or Data Science or Machine Learning with blocks, that research field or develop is part of challenges to learn and understand block programming and how you can add new libraries into a sequence of blocks \cite{challenge_blocks}.

Methodology

We started the classes with the empirical methodology based on Metaphors [5] because or students are novices in the five stage of learning programming skills: novice, advanced beginner, competence, proficiency, and expert [6]. That means, we teach using example of different simple situations in the real life to explain what can we do to interact and which solutions we provide to solve daily problems.

For difference age we use different methodology, as we mentioned above, there is a different way of understanding and retention of information in all of these ages.

Learning Computer Science Concepts

To introduce computer science concepts, we starts with the main question "what is an algorithm?". To answer that question, we use first technique called script language used in kids [2] in all ages.

At first time adults and Teens understood very fast, kids and tweens take a time to understand the aim of that examples. We use different asks in different ages, simple questions to explain that an algorithm is inside in any situation and in any action.

- ***Script language for kids***

(Q): "If you want to go to the bathroom, what should you need to say? How do clean your desk?"

- ***Script language for tweens***

(Q): "Have you ever play a game in your computer?, do you hear about PSP or XBOX?, Do you know what Mario Kart is it?"

- ***Script language for teens***

(Q): "Do you know how to solve a linear equation?, Which rules do you need to follow when you play foot ball?, Have your ever play guitar?"

- ***Script language for adults***

(T): "Have you ever developed something?, do you hear about Programming languages?, Do you know what Software means?"

These questions look different but in the background they are very similar. In all categories, they answered "Yes!" and then explained how it works with a sequence of steps. You can see how many time it takes for them.

Implementing a mini Robot

In this section we introduce as the goal of the course the implementation of two mini robots called Otto and Kyo (See Fig. 1). In this part, we use all methodologies to explain about electronic components, the mathematical fundamentals and how they should to program the sensors.

To implement and programming these robots, their movements and their sensors we use Block programming and C language (with the concepts explained above) for this part we use the online platform to simulate the component programming. To programming Otto we use the platform BitBloq and to programming Kyo we use the platform Tinkercad.

At this time, we measure how fast they understand basic electronic concepts and components description and how fast they can imagine a solution to programming using blocks.

We starts with script language then with metaphors and finally with mind maps to get a solution for the problem of how should we programming these mini robots. But in thi part we focus on programming skills and how they can translate their mind maps into a program (blocks or programming language).

We note that there is a improving in programming speed after they understand the logic following in the mind map previously drawn.

Results

As definition of learning curve, we need to verify if the average time of learning in previous works in kids [2] and teens [3] is correct in all new concepts and for computer science we need to add mathematic, physics and electronic components concepts. So we teach and refor this topics with different methodologies, using the formula below we approximate the average time to learning and we compare with the real average time get from the students.

We note that our average time in some cases is a bit less than the approximate time and also is less than the average time mentioned in previous works.

Measuring the learning curve

As definition of learning curve, we need to verify if the average time of learning in previous works in kids \cite{learn_kids_ref} and teens \cite{learn_teens_ref} is correct in all new concepts and for computer science we need to add mathematic, physics and electronic components concepts. So we teach and refor this topics with different methodologies, using the formula below we approximate the average time to learning and we compare with the real average time get from the students.

We note that our average time in some cases is a bit less than the approximate time and also is less than the average time mentioned in previous works.

Where:

K: Number of hours used to understand the first unit (or task).

\square : Number of hours to understand the \square unit.

x: Number of the unit.

b: Percent of learning.

So, we have this tables with respective approximations. We take the K value from the first part in script languages in Table I we take b from [7] and x is equal to 4, because is the 4th unit.

TABLE I. TABLE OF AVERAGE TIME TO DESCRIBE AND SOLVE.

How many time takes to learn a new concept with examples ?			
Category	Time to describe the problem	Average Time to solve	Previous work time
Kids	55-65 min	66.486 min	68.64 min
Tweens	52-56 min	57.365 min	56.49 min
Teens	42-52 min	50.934 min	51.32 min
Adults	25-41 min	42.163 min	40.89 min

Conclusion

This work introduces the different adaptive behavior with different methodologies in the learning speed of kids, tweens, teens and adults. We note that tweens and teens have more ability to understand new concepts using games as metaphors. Adults have a strong learning speed to understand new concepts based on past experience. From kids to juniors, they present a fast learning speed, but they forget concepts in a little period of time.

Table I shows the results of manage the learning curve after all the tasks and show us that learning time don't depend of an specific topic, depends of the methodology applied to teach that.

Acknowledgments

This work was supported by grant 234-2015-FONDECYT (Master Program) from CienciActiva of the National Council for Science, Technology and Technological Innovation (CONCYTEC-PERU).

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Kinesthetic Perception, Physical Activity and on-Task Behavior in Thematic Learning

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

Objective: To investigate associations between kinesthetic perception, physical activity and on-task behavior in thematic learning, and evaluate how they correlate to academic performance in math, reading and science. **Methods:** This study included 25 children (age: 6-7 years, 14 girls). Kinesthetic perception was evaluated in space-visuomotor task accuracy test (kinesthetic perception test and measurement). Level of physical activity was estimated from the daily activity during normal school activity using pedometer and both relation with On-task behavior in thematic learning was investigated with standard test of completion tasks and cognitive tests, in math, reading and science. **Results:** Kinesthetic perception was associated with better performance in tests of completed tasks and academic performance ($P < 0.003$), whereas physical activity was associated with better-sustained completion tasks ($P < 0.038$) and academic performance ($P < 0.047$). Kinesthetic perception and physical activity were all associated with better performance in cognitive tests (math, reading and science). The results expose that on the whole the academic performance was significantly correlated with physical activity and kinesthetic perception. **Conclusions:** The data demonstrate that kinesthetic perception and physical activity are positively correlated with on-task behavior in thematic learning and with academic performance in math and reading. Future interventions should investigate associations between kinesthetic perception, physical activity and on task behavior in academic performance to expound the causation of these associations

Keywords: Kinesthetic Perception, physical activity, on-task behavior

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Introduction

Teachers have responsibility to provide their student the beneficial learning experiences. Teachers should note all factors and variables that effect students learning and suit student's need in the classroom and learning. Comprises the formula for engaging students to be more active in movement during lesson and facing problem that students are continually being faced with mostly sitting in their seats during classroom. Some various strategies to engaging student in physical activity, unfortunately they do not physically stimulate students through movement interactions.

The association between kinesthetic perception, physical activity, and academic achievement has been studied in recent years. Some studies showing that active and fit children tend to perform cognitive test better than not active and lower fit children. Physical activity improves and contributes to quality of life, mental health, and the ability to accomplish physical task demands. Low level of physical activity can predispose children to obesity

Prior studies have found positive associations between kinesthetic perception and physical activity in academic performance, recent studies have also documented positive associations between physical activity and academic performance. Further, it emphasizes a potential positive role of physical activity in preschool children, children and preadolescence and suggests that motor skills development is positively related to learning process at school. Other studies on aerobic fitness in children found positive associations with performance in academic performance. The investigation to the associations between children perceptual abilities (visual perception, auditory perception, kinesthetic perception and tactile perception) and the academic performance reveal that a significant percentage of the sample academic under-achievers scored low in the three perceptual channels – visual, auditory and kinesthetic. On an average one fourth of the children were poor in these perceptual areas. Tactile perception was the only area where only a few children faced problems. (1).

Off-task and on-task behavior during learning in class, has an association with academic performance. There are three type of off-task behavior, including motor-OTM, verbal-OTV and passive-OTP. Off-Task Motor (OTM) is the behavior of children during lesson, instead of working on assigned task, the student is out of seat, constant and noticeable fidgeting, playing with objects and/or other children, making inappropriate gestures, acting silly, hitting, biting, or throwing things, fighting with others, etc. While off-task verbal (OTV) is the behavior of children in class, instead of working on assigned task, the student is calling out, talking to someone when prohibited, making noises, etc. And off-task passive (OTP) is when instead of working on assigned task, the student is looking around, daydreaming, looking out window, skipping school, coming to class late, delaying starting assigned task, etc.

On-Task Behavior is the behavior when student or children are: Looking at teacher when giving lesson, directions and/or instructions (L); b. Participating in class discussion (P); Working on seat work (S); and Working cooperatively on cooperative project (C)

We found no previously study focused on concurrent assessment of kinesthetic perception, physical activity and on-task behavior with academic performance for cohort children and it is the aim of this study to investigate the potential associations between kinesthetic perception and physical activity with academic performance in children.

The research study then: If physical activity and kinesthetic perception affected on-task behavior therefore student with high physical activity level and level of kinesthetic perception will reach high performance in completion of task.

Definition of term: For the purposes of this study, several terms are used in conjunction to its methods, results, and past research. Physical activity in this instance refers to the physical movement of students' bodies, where they are up and moving about the classroom setting. This term is specifically used in contrast to direct instruction teaching methods. Physical activity should not be confused with physical education, which refers to the supplemental class students attend in a given amount of time throughout the school week to receive the instruction of a separate physical education teacher.

On-task behavior is used as a measure of students' levels of task completion. When students are considered to be fully on-task, they are completely focused on the given assignment that the teacher has provided and are not influenced by any sort of distraction within the classroom setting. In contrast, when students are considered to be off-task they are giving into distractions around them or are in turn becoming an interruption themselves. Off-task behavior may be categorized into three separate categories: motor, verbal and passive. Students' movement within their workspace that results in their concentration being averted from the given task at hand categorizes off-task motor.

Similarly, off-task verbal behavior describes incidences when students use verbal language that results in their focus moving away from being on-task. Off-task passive behavior occurs when students are not moving physically or talking verbally but is still not actively participating to the extent that their concentration is clearly on the given task.

Physical activity is defined as any bodily movement produced by skeletal muscles that result in energy expenditure and several elements of physical activity have been identified. . The amount of energy required to accomplish an activity can be

measured in kilojoules (kJ) or kilocalories (kcal); 4.184 kJ is essentially equivalent to 1kcal. Technically, the kJ is preferred because it is a measure of energy expenditure; Expressed as a rate (kcal per unit time), the amount of energy expended by each person is a continuous variable, ranging from low to high. The total amount of caloric expenditure associated with physical activity is determined by the amount of muscle mass-producing bodily movements and the intensity, duration, and frequency of muscular contractions. Everyone performs physical activity in order to sustain life; however, the amount is largely subject to personal choice and may vary considerably from person to person as well as for a given person over time. The most common units of time used to refer to kcals spent in physical activity are the week and the day. Physical activity during monthly, seasonal, or yearly periods may also be examined to establish the stability of physical activity for longer time periods.

Physical activity can be categorized in a variety of ways. A commonly used approach is to segment physical activity on the basis of the identifiable portions of daily life during which the activity occurs. The simplest categorization identifies the physical activity that occurs while sleeping, at work, and at leisure. A simple formula can be used to express the caloric contribution of each category to the total energy expenditure due to physical activity. For this research purposes, Physical Activity Level will measure using some test. The **physical activity level (PAL)** is a way to express a person's daily physical activity as a number, and is used to estimate a person's total energy expenditure. In combination with the basal metabolic rate, it can be used to compute the amount of food energy a person needs to consume in order to maintain a particular lifestyle.

Thematic learning is the selecting and highlighting of a theme through an instructional unit or module, course, multiple courses. It is often interdisciplinary, highlighting the relationship of knowledge across academic disciplines and everyday life. Themes can be topics or take the form of overarching questions. Thematic learning is closely related to interdisciplinary or integrated instruction, topic-, project- or phenomenon-based learning.

The conjunction and interaction between all variables can be described in this following figure:

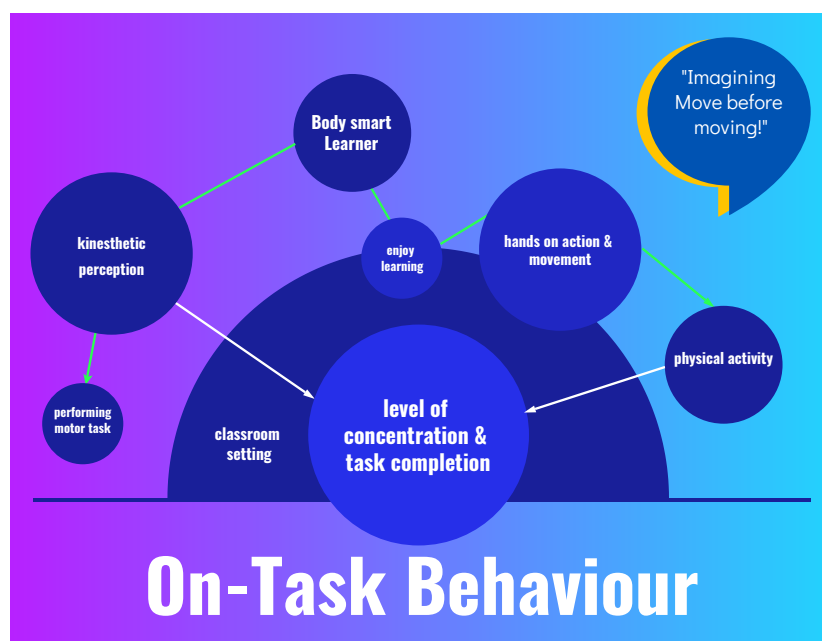


Figure 1: The Kinesthetic perception-physical activity and On-Task Behavior Model

Level of physical activity was estimated from the daily activity during normal school activity using pedometer and both relation with On-task behavior in thematic learning was investigated with standard test of completion tasks and cognitive tests, in math, reading and science.

Conclusion

The results of the study indicate that: (1) There is a relationship physical activity and on-task behavior; (2) There is a relationship kinesthetic perception and on-task behavior; (3) Both Physical activity and kinesthetic perception are related to on-task behavior in completing math, reading and science test. Kinesthetic perception was associated with better performance in tests of completed tasks and academic performance ($P < 0.003$), whereas physical activity was associated with better-sustained completion tasks ($P < 0.038$) and academic performance ($P < 0.047$). Kinesthetic perception and physical activity were all associated with better performance in cognitive tests (math, reading and science).

The results expose that on the thematic learning academic performance was significantly correlated with physical activity. Reading and science both were significantly associated not only with one another but also with perceptual areas. Instead, mathematics was found to be significantly correlated with kinesthetic perception. Conclusions: The data demonstrate that kinesthetic perception and physical activity are positively correlated with on-task behavior in thematic learning and with academic performance in math and reading. Future interventions should investigate associations between kinesthetic perception, physical activity and on task behavior in academic performance to expound the causation of these associations

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***Nutritional Information Media for Elementary School Children:
A Literature Review***

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

This study aims to review researches on media formats applied for educating school children about nutrition. This is an introductory research for determining suitable media for nutritional information provision of elementary school children in Indonesia. The data is collected from database of Scopus, Indonesian Scientific Journal Database (ISJD), Pubmed and Google scholar. This research answers some following research questions: (1) What kinds of media for conveying nutritional information to elementary school children? (2) How is the effectiveness of those media? The study showed that there are 15 kinds of media for conveying nutritional information. Then we explored whether the media has effectiveness as increasing knowledge, motivation, awareness, changing attitude and/or changing behavior. The practical implication of this research is conducting further research by measuring empirically appropriate media for educating elementary school children on nutrition in Indonesia.

Keywords: nutritional information, elementary school children, information media

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Introduction

Reported by Unicef (2018a) that almost half of children death is caused by malnutrition. It is contributing to the number of child mortality about 3 million worldwide per year. In developing countries children is the most susceptible community group suffering nutritional problems. For example, one of three children, who are stunted in the period of 2011-2017, is occurred in Southeast Asia (Indonesia, Philippines, Vietnam, Cambodia, and Lao), South Asia (India, Pakistan, Nepal, Bangladesh, and Bhutan) and most countries in Africa. Meanwhile, giving optimal feeding to children is essential for survival, growth and development (Unicef, 2018b). However, in some developing countries are not up to a half children benefit such as in Southeast Asia (Indonesia, Vietnam, Cambodia, and Lao), South Asia (India, Pakistan, Nepal, Bangladesh, and Bhutan), and most countries in Africa. Furthermore, Iodine (Unicef, 2018c) and Vitamin A (Unicef, 2018d) deficiency are major causes in childhood illnesses in developing countries such as in some countries in Africa. Indonesia Ministry of National Development Planning and United nations Children's fund, (2017) reported that 8.4 million or 37 per cent Indonesian children are stunted and suffer from chronic malnutrition. The children who suffers stunted includes children from the wealthiest households. Meanwhile, one of ten children is acutely malnutrition. Pahlevi and Indarjo (2012) reported that the most of elementary schoolchildren (58%) in a school in Semarang, the sixth biggest cities in Indonesia has malnutrition status. Meanwhile, almost a half of school kids in the district of Bolaang Mongondow Utara suffers anemia (Arifin et al., 2013).

The low level of nutritional knowledge of elementary school kids in Indonesia is assumed as a reason of inadequate nutrition intake. Conveying nutritional knowledge to parents and also schoolchildren could prevent malnutrition through improving their awareness, attitudes, and behaviors. De Castro Barbosa et al. (2016) argued that since elementary school students tend to consume unhealthy foods for breakfast and lunch, nutritional knowledge should be delivered continuously and integrated into the academic program, therefore the behavior for eating healthy food especially in school will be achieved. Additionally, Ghaffari et al. (2017) showed that the suitable design and program in nutritional education will improve awareness, attitudes, and behaviors of students. Likewise, Verawati et al. (2016) reported that based on Anova test to student kids, nutritional education provided influence their attitudes to nutrition intake. Soheila et al. (2016) also conveyed that nutritional education is useful to improve nutritional knowledge, attitude and performance of primary school students. Furthermore, tailored nutritional education for elementary-school students is effective in changing student behaviors. In the meantime, the research result in Indonesia showed that conveying nutritional knowledge to student influence the awareness but not the behavior (Yulia et al., 2018).

Using media in educating nutrition knowledge would be more interesting and ease to be understood by student kids. Rohmah et al. (2016) conveyed that demonstration media in nutritional education for elementary school kids should be employed to make them more interested in the material. Various media has already studied for nutritional education among others are poster (Fitriana et al. 2015), leaflet (Fitriana et al., 2015), comic (Hamida et al. 2012)(Nugroho, 2018), games (Mellecker et al 2013), images (Lobo & Martins, 2014), messages (Lee et al., 2017), booklet (Zulaekah,

2012), etc. To date no paper reviews various types of media to convey information about nutrition to school children.

Based on several reasons aforesaid this research aims to identify the kinds and effectiveness of the media applied to improve nutritional knowledge of elementary school kids. The questions that would be answered are (1) What kinds of media applied for nutritional information provision for elementary school children? (2) How effective is the media? This paper outputs are the list of media and their effectiveness for nutritional learning of elementary students. The output would be useful for the media development for educating nutritional knowledge to schoolchildren in Indonesia. The implication of this research is should be comparing among media to find the most or the combination of appropriate media. In the future an empirical study to find media of choice is conducted.

Methods

Data Sources and Searches

Scopus, Indonesian Scientific Journal Database (ISJD), Google Scholar and Pubmed were searched for relevant English language studies. The search included a various combination of search terms: “nutritional education”, “elementary”, and “media”, then followed by searching each kind of media.

Study Selection

The lead author reviewed to determine whether the articles was suitable to the criteria: (1) published at last 10 years (2) written in English; and (3) reported on the subject of nutritional education media for elementary student. The studies with the subject were not elementary student or student at the age of 6 to 13, and not measuring media for educating food and nutrition were excluded. We found 15 kinds of media, which is showed in Table 1.

Results and Discussion

Various media for educating nutrition of elementary school children

Table 1 below provides 15 kinds of media for nutritional education of the elementary school children.

Table 1. The list of media and sources

No	Media name	Sources
1.	Recall tool	(Torres, 2017)
2.	Application on smartphone	(Lee et al., 2017)(Yang et al., 2017)
3.	Poster	(Fitriana et al., 2015)
4.	Leaflet	(Fitriana et al., 2015)
5.	Game in class/room	(Katz et al., 2014)(Gambir & Nopriantini, 2018)(Joyner et al., 2017)(Jones et al., 2014)
6.	Game in computer	(Mellecker et al., 2013)(Morgan et al., 2014)(Rosi et al., 2015)(Sharma et al., 2015)(Baranowski et al., 2011)(Cullen et al., 2016)
7.	Combination between game in computer and story immersion	(Wang et al., 2017)
8.	Garden	(McAleese & Rankin, 2007)(Hutchinson et al., 2015)(Davis, Martinez, Spruijt-Metz, & Gatto, 2016)(Parmer et al., 2009)(Heim, Stang, & Ireland, 2009)(Bontrager et al., 2014)(P. Morgan et al., 2010)
9.	Video	(Gaspar et al., 2016)
10.	Booklet	(Zulaekah, 2012)
11.	Online Comic	(Thompson et al., 2013)
12.	Printed Comic	(Hamida et al., 2012; Hartono, Wilujeng, & Andarini, 2015; Nugroho, 2018; Widajanti, Suryawati, & Sugihantono, 2019)(Leung et al., 2014)
13.	Game board	(Gunawan et al 2017)(Torre et al., 2016)
14.	Card	(Wahyuningsih et al 2015)(Torre et al., 2016)(Lakshman et al., 2010)
15.	Salad bar	(Ohri-Vachaspati, P et al., 2016)

The effectiveness of the media

The effectiveness of the media based on recent study is following:

1. Recall tool

The tool is a collecting information aid about 24-hour food and nutrition practices of students. Then teacher uses the information as discussing materials with student aged 8–12 years at the classroom. Researcher had not explored the effectiveness of the tool.

2. Application on smartphone

Both researchers had not tested the effectiveness of the media. Lee et al. (2017) was developing a platform, which was consisted of main features of six levels of food items (namely, vegetables, fruits, sugar-sweetened beverages, fast food and instant food, and snacks) and behavioral change stages (namely, pre-contemplation, contemplation, preparation, action, and nutrition information contents) in the form of Trans-Theoretical Messages (TTM). Meanwhile, Yang et al., (2017) built a mobile platform system called HAPPY ME to prevent childhood obesity.

3. **Poster**

Poster is used as a media aid at a lecture 45-60 min about nutrition in a class with fifth grade students aged 10-12 years old. Respondents liked poster because the text size, which is bigger than text of leaflet and multimedia (Fitriana et al., 2015). Respondents accept poster as a media for providing information about nutrition. Based on quasi experiment technique result poster was assumed effective to educate children about the important of breakfast and improve attitude as well as practice of children to have breakfast.
4. **Leaflet**

Leaflet also is applied as a media aid to educate fifth grade students aged 10-12 years during lecture 45-60 min. Comparing to poster and multimedia, this media has benefit could be carried easily and read at any time. The research finding showed that leaflet was better compared to poster and multimedia in educating nutrition and increase breakfast habit in children (Fitriana et al., 2015).
5. **Game in class/room**

Educating nutrition through gaming in class/room increased knowledge and changed behavior of schoolkids. Four researchers developed a different game. Katz et al., (2014) created a game called nutrition detective, which has objective to increase the food-label literacy skills of children. Meanwhile, Gambir & Nopriantini (2018) created a smart ball game and counselling to improve knowledge, habit, nutritional value information, and arrangement of breakfast food. Afterwards, Jones et al. (2014) then developed by Joyner et al. (2017) created Fit game to improve food and veggie consumption of elementary school children. The game consists of various activities in class/room.
6. **Game in computer**

Based on research, game in computer could increase knowledge and change attitude as well as behavior of children regarding healthy food. Mellecker et al (2013) tested computerized nutritional games, which utilizing feet to control mouse functions on a foot gaming pad. Meanwhile, Morgan et al. (2014) created Avatar, then children could change the body size of Avatar to match their perceived ideal and healthy appearance. Then, Rosi et al. (2015), Sharma et al. (2015), Baranowski et al. (2011), and Cullen et al. (2016) improved children's eating habits through an edutainment technological platform.
7. **Combination between game in computer and story immersion**

Further, Wang et al. (2017) tested the effectiveness of the combination between computerized nutritional game and story immersion. They showed that the media improved the motivation of Chinese children to Diet and Physical Activity.
8. **Gardens**

Research finding showed that gardening at school increase knowledge and change behavior of the elementary students in consuming healthy food. McAleese & Rankin (2007) developed some activities of gardening such as weeding, planting, watering, and harvesting during at least 12-weeks period, as well as programs such as a salsa making workshop, class cookbook, "add a veggie to lunch day", herb drying, and food experiences to improve fruits and veggies consumption of children. Meanwhile, Davis et al. (2016) developed 12-week nutrition, cooking,

and gardening trial, called LA Sprouts program and Bontrager et al. (2014) created program of Wisconsin Farm to School (F2S) to increase students' fruit and vegetable intake. All programs showed that school gardens yielded positive impact. However, Hutchinson et al. (2015) argued it was required specialists to run impactful program. Nevertheless, Parmer et al. (2009), Heim et al. (2009), and Morgan et al. (2010) showed that school gardens was an effective media to increase fruit and vegetable knowledge and behavior change among children.

9. Film Video

Gaspar et al. (2016) developed a serial of videos for lessoning about nutrition and cooking. The media had not tested yet for the effectiveness.

10. Booklet

Media could improve the nutrition knowledge of students when booklet applied along lecture and discussions session about nutrition (Zulaekah, 2012).

11. Online Comic

Thompson et al. (2013) created online obesity prevention program consisted of an animated and interactive comic for reducing obesity risk among girls. The media was still in development process.

12. Printed Comic

Applying a cross sectional research Widajanti et al (2019) argued that comic increase the knowledge of children attitude about food and nutrition. Meanwhile, based on quasy experiment Nugroho (2018) and Hamida et al (2012) conveyed that comic improve the knowledge of schoolkids. Additionally, comic does not influence the behavior of children (Nugroho, 2018). In the meantime, comparing between lecture and comic (Hartono et al., 2015) showed that both media increase the nutritional knowledge of school kids and there is no significant difference between two media. Likewise, Leung et al. (2014) reported that manga comic can promote fruit intake of minority urban youth in New York city.

13. Board Games

(Gunawan et al., 2017) explained that this media increased the motivation of students to learn and consume various kinds of fish. Meanwhile, Torre et al. (2016) applied board games to promote physical activity to overcome obesity and overweight in children.

14. Card

Wahyuningsih et al. (2015) argued that card was a media that is able to increase significantly the nutritional knowledge of studentkids. This opinion was supported by Torre et al., (2016) with GiochiAMO program which include media of card and Lakshman et al. (2010) with their 'Top Grub' card game.

15. Salad Bars

Ohri-Vachaspati et al. (2016) studied that growing number of schools in US applied salad bars as a program to offer a variety of fruits and vegetables to students. Salad bars become a media to improve fruits and vegetables consumption of students.

Based on the description aforesaid, the effectiveness of media is summarized in Table 2.

Table 2. Summary of the effectiveness of the media

No	Media name	No test	Increasing knowledge	Increasing motivation	Increasing Awareness	Changing Attitude	Changing Behavior
1.	Recall tool	√					
2.	Application on smartphone	√					
3.	Poster		√				
4.	Leaflet		√				√
5.	Game in class/room		√				√
6.	Game in computer		√			√	√
7.	Combination between Game in computer and story immersion			√			
8.	Garden		√				√
9.	Video	√					
10.	Booklet		√				
11.	Online comic	√					
12.	Printed comic		√		√	√	
13.	Game board	√					
14.	Card		√				
15.	Salad Bar	√					

Conclusion

Media selection to educate student kids becomes a critical issue, since there are various media and their effectiveness. Most media have level of effectiveness in increasing knowledge of school children. Only a few media such as leaflet, game in computer, game in class/room and garden are claimed to be able to change behavior of children to food and nutrition. Meanwhile, the media that studied by many researchers are printed comic, game online, and garden. In the future, it is required to study the media of choice to educate children kids about healthy food and nutrition.

Acknowledgement

We would like to thank “Kementrian Riset, Teknologi dan Pendidikan Tinggi (Ristekdikti)” and “Lembaga Ilmu Pengetahuan Indonesia (LIPI)”, that enabled us to presenting this paper on ACE 2018.

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Instructional Scaffolding Through Zap the Gap Approach: Bridging Academic Achievement in Science for Students-at-Risk

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

Student learning gaps result in today's most serious education challenges - retention and dropouts. This learning gap passed to the next grade become significant, often unsolvable problems that cause teachers to intervene more. This action research was designed to determine the effectivity of instructional scaffolding through Zap the Gap materials in the improvement of academic achievement in Science for students-at-risk. Fifty-five (55) selected grade 6 students were selected and were divided into two groups, the experimental group which used the zap the gap approach in retaining Science concepts in preparation for the National Achievement Test and control group used the reviewer in NAT Science 6. Based on the results, there was no significant difference in the experimental and control group of the selected grade 6 students of Tunasan Elementary school. This means that pupils from both groups had the same understanding of the lesson before the lesson was taught. But after the zap the gap approach was taught, it showed significant difference. This means that the experimental group which used the Zap the Gap Intervention was effective in creating instructional scaffolding and mastery learning which successfully addressed the learning gaps in science concepts.

Keywords: instructional scaffolding technique, learning gap, academic achievement, student-at-risk, mastery learning, teaching and learning skills

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Introduction

Learning gaps result in today's most serious education challenges... retention and dropouts. They lower student achievement in school, on assessments and in life. They undermine our education system by turning learning into a struggle.

A learning gap is formed when a student fails to learn and apply what is expected at a specific point in time and at a specific level of proficiency. Gaps can be identified by comparing learning objectives against learning achievement - the "plan" versus the "actual." The specificity of the comparison determines the usefulness of the information. Student learning gaps passed to the next grade become significant, often unsolvable problems that cause teachers to intervene more.

Based on the results of the 1st and 2nd grading period, It was found out that 18% or 55 out of 303 grade 6 students of Tunasan Elementary School have difficulty in retaining science concepts. These are also the students at risk of retaining, dropping out or may stop schooling.

Many of these students had difficulty in retaining science concepts or fails to learn a specific skill. Understanding gaps, how they impact, how they form, and how they can be illuminated is critical to student success. By minimizing the learning gaps students carry with them, teachers have a good opportunity to succeed in transferring the planned skills and concepts without gaps.

This is where instructional scaffolding needed to support learning. Instructional scaffolding is a process through which a teacher adds supports for students in order to enhance learning and aid in the mastery of tasks. Larkin, M. (2002) coined the term and defined scaffolding as assistance from experts that enables children to achieve what is beyond their ability to accomplish independently. Originally, Alibali (2006) suggests that as student's progress through a task, the teacher use a variety of scaffolds to accommodate students' different levels of knowledge which emphasizes the teacher's role as a more knowledgeable learner to help learners to solve problem-oriented tasks. Lange (2002) states that there are two major steps involved in instructional scaffolding: (1) "development of instructional plans to lead the students from what they already know to a deep understanding of new material," and (2) "execution of the plans, wherein the instructor provides support to the students at every step of the learning process."

According to the study of Kim, M. And Hanaffin, M. (2011), researchers have examined the use and impact of scaffolds in mathematics, science, and reading, comparatively little research has focused on scaffolding learning in real-world, everyday classroom settings. They examined two key constructs (problem solving and scaffolding) and propose a framework that includes essential dimensions to be considered when teachers scaffold student problem solving in technology-rich classes. They then investigated issues related to peer-, teacher-, and technology-enhanced scaffolds, and conclude by examining implications for research.

This action research was designed to determine the effectivity of instructional scaffolding through Zap the Gap approach in the improvement of academic

achievement in Science for students at-risk. Specifically, the study sought to address whether instructional scaffolding through the use of Zap the Gap approach have positive improvement in the learning gaps in Science.

The purpose of this study was to assess the effectivity of instructional scaffolding through Zap the Gap materials in the improvement of academic achievement in Science for selected Grade Six Pupils.

Specifically, this study attempted to answer the following questions:

1. What is the results of academic performance of the experimental and control group in the following:
 - 1.1 Pre-Test
 - 1.2 Post Test
2. What significant difference that exists between the pretest and post test results of the experimental and control group?
3. How would you compare the improvement of academic achievement in Science when the experimental group were grouped according to their level of mastery:
 - 3.1 Beginning mastery
 - 3.2 Approaching mastery
 - 3.3 High degree of mastery
4. How effective are the zap the gap materials in creating instructional scaffolding based from the gained scores?

The null hypothesis stated below was tested using a pretest and post-test on determining the effectivity of instructional scaffolding through Zap the Gap materials in the improvement of academic achievement in Science for selected Grade Six Pupils: Pupils in the experimental group will have no significant change in their pretest and posttest using zap the gap materials at the .05 level of significance.

Fifty-five (55) selected grade 6 students who were identified as at-risk were selected based on their knowledge level as to beginning knowledge, approaching mastery, or high degree of mastery. The students were divided into two groups, the experimental and control group. First, both groups were pretested to determine their level of knowledge. The result of the pre-assessment was used as a guide in making the Zap the Gap intervention.

In the intervention stage, each stage has given simultaneous activity to determine their learning pace. Series of worksheet were given and data were noted.

For the final stage, the researcher monitored and analyzed the trend and analysis of the results between the pre-test and posttest. Data analysis of the results was taken where the difference between the Mean Percentage score is calculated and evaluated.

Descriptive statistics such as MPS and standard deviation were used to analyze the data. T-test of paired samples was used to find the significant difference.

The following were the research instruments used in the study:

Pretest and Post Test were used to assess the level of cognitive ability of students before and after the intervention.

Zap the Gap materials were used during the intervention. Zap the Gaps are referred to exterminating the learning gaps and to fill the holes created by these gaps. A gap is being the difference between where students currently are in their education level and where they should be; to determine a child's learning gap teachers and students should both perform and assess a variety of ongoing task. They were grouped according to their students' knowledge level as to beginning knowledge, approaching mastery, or high degree of mastery.

Table 1. Zap the Gap Materials

Module No.	Topic/Title	Objectives	Grade Level Expectation	Code
1	Human Reproductive System and Their Functions	Describe the structure and function of the human reproductive system	Grade 5	SSLT-IIa-1
2	The Respiratory System and their function	Explain how the respiratory system works.	Grade 4	S4LT-IIa-b-1
3	The Urinary System and their function	Identify parts of the urinary system and their function.	Grade 4	S4LT-IIa-b-1
4	Kinds of Vertebrates	Classify vertebrate into: mammals, birds, reptiles, amphibians or fishes.	Grade 3	S3LT-IIc-d-5
5	Animal Adaptations	Describe characteristics that enable animals to survive in an environment.	Grade 4	S4LT-IIc-d-5
6	Kinds of Plants	Describe characteristics of different kinds of plants.	Grade 5	SSLT-IIg-7
7	Physical and Chemical Change	Differentiate physical from chemical changes/processes by giving examples.	Grade 5	SFMT-Ic-d-2
8	Planets in the Solar System	Describe the distinctive characteristics of planets in the solar system.	Grade 5	BEC
9	The Nervous System and their functions	Identify major parts of the nervous system and their functions.	Grade 6	BEC

10	Circulatory System and their functions	Identify major parts of the circulatory system and their functions.	Grade 6	BEC
11	Energy Forms & their Uses	Identify energy forms and their uses.	Grade 3 Grade 4 Grade 5	S3FE-IIIi-j-3 SFPE-IIIc-3 S4FE-IIIf-g-4
12	Motion	Identify factors that affect the motion of an object	Grade 3	S3FE-IIIc-d-2
13	Earth's Interior Layers	Describe characteristics of the earth's interior layers	Grade 6	BEC
14	Characteristics of Stars	Describe characteristics of stars and how group of stars are useful to people	Grade 6	BEC
15	Theories about the Origin of the Universe	Differentiate the different theories about the Universe.	Grade 6	BEC

This paper adheres to the ethical standards for protection of human subjects of the American Psychological Association (2010). Additionally, a research proposal was submitted and reviewed by the researcher's principal, and was approved.

Parents of the participants were informed during the PTA meeting that their child was participating in the Zap the Gap approach in teaching. As part of the researcher's normal instructional process, assessment scores were reviewed and analyzed. The parent of the participants received a copy of their scores of the pre-assessment.

Conclusions

There was no significant difference on the performance of the experimental group and control group in the pretests. They were of the same level of intelligence and mastery before they were exposed to experiment. Although there was slight difference on their mean score, it was not that significant based on the computed t-value of 0.476 at 0.05 significance level. This attested that both groups of respondents had the same level of mastery before an intervention was introduced to the experimental group and traditional method to the control group.

There was significant difference on the performance of the experimental group in the pretest and posttest. The difference in the mean scores of posttest and pretest of 7.59 was indeed significant. There was a positive transfer of learning in the two groups. However, higher mean was observed from the experimental group after the presentation of the intervention materials.

Zap the Gap materials were effective in creating instructional scaffolding and mastery learning which successfully addressed the learning gaps in science concepts.

Acknowledgements

It's my pleasure to thank those who made this study possible.

First of all, I would like to thank our Almighty Master, who guides me in every step I take. This work would not have been possible without the financial support of the Basic Education Research Fund and the Department of Education-National Capital Region. To Dr. Warren A. Ramos, Regional Education Program Supervisor, Policy, PPRD, for the approval of my classroom action research. To Mrs. Phoebe Arroyo, Planning Officer II, SDO-Muntinlupa for the technical assistance.

I am grateful to all my family in the field of education- To Mrs. Rhodora V. Mandap and Mrs. Jennifer Joson, my dear principals, to my co-teachers in Tunasan Elementary School for allowing me to conduct this study.

Nobody has been important to me in the pursuit of this research than the members of my family. I would like to thank my husband, Joey T. Barredo, whose love and guidance are with me in whatever I pursue. To my children namely Justine Joey, Jaedane Alexander and Julia Kazzandra who provide unending inspiration.

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Social Inclusion: A Systemic Approach to Child's Well-being

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

This exploratory micro-study attempts to examine processes and outcomes aimed at social inclusion of marginalised children admitted in a private school under the EWS/DG category of the RTE Act 2009. The implications of how this provision can be meaningful in practice are explored. The present paper explores the challenges faced in the implementation of the RTE Act 2009 at the school level. The primary concerns being fees compensation by the State Government, building new admission protocols, teacher in-service training, sensitizing the Non EWS parents and children towards the evolving socio-cultural dynamics of the school and ensuring inclusion in the wider school ecology. A micro-study of one of the admitted children is presented. The interpretative framework provided by Ecological Systems Theory is drawn upon to deepen understanding of the child in the context of primary schooling. The micro system, meso system, exo system and macro system; which refer to various layers of interactions in which the child grows up and survives are examined. This theoretical analysis deepens understanding about children enrolled in primary schooling, who operate in a position of disadvantage. The school based interventions in curriculum, pedagogy and classroom management are discussed. The paper concludes by presenting the impact of these interventions at increasing learning outcomes and integration of the child in school. The case study reveals the promise offered by the aforesaid policy provision on school education for social inclusion of the marginalized children of the stratified, hierarchical Indian society; with the wider aim of building an inclusive society.

Keywords: Education, Inclusion, Economically Weaker Sections (EWS), Disadvantaged Groups (DG), Systems and Well-being

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Introduction

A brief history of the Education System in India will help to understand how past efforts shaped the present education system and the fundamental role that education plays in the transformation of society. RTE Act 2009 serves as a building block to ensure that every child gets quality elementary education and the state, with the help of families and communities, fulfills this obligation. It mandates that the school's environment is transformed into inclusive and equitable learning spaces.

This paper aims to outline a strategy for making significant contribution to 'Education for All' and also to serve as a guide to teachers in contributing to the child's well-being. Our school follows a conceptual framework based on the Ecological Systems Theory which clarifies the role and importance of school and teachers as caretakers in a child's life. The examination of one child in particular, provided a wealth of data, leading to understanding of inclusion of children admitted in our school under the EWS/DG category of the RTE Act 2009, Section 12 (1)(c).

Educational Development in Post-Independence India

Education has always been an irreplaceable tool for social change and progress; it empowers the society to walk down the path of development and progress. Besides being a powerful tool to strengthen democracy, it is of special importance for the marginalized and disadvantaged sections of society, traditionally deprived of access to education and development resources.

India's struggle for independence came to an end in August, 1947 but it's still clutched in the endless loop of age old, deep rooted biases and prejudices. Ours is a society divided by an ancient caste system where only the representatives of upper castes and classes were born with the privilege and right to be educated, while the poor and lower castes were denied the right to education. Segregation and social exclusion in society have been a part of Indian Culture since time immemorial. The British rule served the same injustice, as formal education in schools was available only to the elite and upper classes. The report of Indian Education Commission chaired by W.W. Hunter, or other annual reports of the Provincial Governments reveal that there were different schools for different categories of students. There is also evidence to suggest that very often even within the compound of a single school, different sitting arrangements were made for the students of different caste backgrounds.

The Indian Constitution was framed with the vision to eradicate the deep seated caste based fragmentation of society. The Constitution made equality of status and of opportunity and social, economic and political justice, Fundamental Rights for all citizens amongst other rights.

Although the idea of compulsory education did not acquire centrality in the policy framework of post-independence Indian nation state, nonetheless, it secured a much faster expansion in the coming years. Eager to educate its citizens, the government opened schools at a fast pace. However, its policies vis-a-vis primary and secondary education were lacking in proper and adequate planning, implementation, pedagogy and resources. Despite the resources at its disposal, the education system was

noticeably failing to impart quality education to the masses and faced major challenges in the name of social inclusion and low literacy rates.

In the 1970s, the private sector boomed exponentially, offering better education facilities to the middle and upper classes. Private schools were the new age English medium schools for the upper classes, and the lower classes were left at the mercy of government schools. The stigma attached to government schools compelled the parents to transfer their children to private schools even with the fees being beyond their capacity. Private schools are associated with an opportunity for upward social mobility, and public schools, with a resignation to one's economic reality. Since the quality of education being provided in government schools has been consistently poor, it failed to curb the problem of social inequality and further widened the gap between classes.

Taking full advantage of the situation, the private sector rose quickly in the metropolitan areas and targeted parents who could pay, leaving the responsibility of catering to the marginalised sections of society on the government. This differentiated access to education fed into the system of segregation. While the marginalised continued to look towards the state and centre for their needs, the middle classes struggled to afford private education in order to secure the future for their children in the growing economic landscape. This initial segregation was further perpetuated with a boom in the availability of low-fee private schools catering to lower income families. The low cost private schools made a large group of population access private education – an option, still unavailable to the poorest of the poor.

As the contrast between the Private Schools and Government Schools increased and the consequent stratification deepened, there emerged a need to address the deteriorating problem of quality education. It clearly emerged that an integrated, equitable schooling system was necessary for a progressive, democratic society. An inclusive system was essential to challenge existing hierarchies and inequalities in the society and bridge the gap between the classes. The importance of Equity, for the purpose of delivering social justice and for the performance of an education system as a whole, was recognized.

Education is a right that flows directly from the right to life. The right to life and the dignity of an individual cannot be assured unless it is accompanied by the right to education. One of the Directive Principles of State Policy as contained in Article 45 of the Constitution of India states:

“The State shall endeavour to provide within a period of ten years from the commencement of this Constitution, for free and compulsory education for all children until they complete the age of fourteen years.” (Article 45, Constitution of India)

The Kothari Commission (1964-66) laid the foundation of the first National Policy on Education in 1968 with the mission to modernize the Indian education system. The 1968 and 1986-1992 National Education policies in India recognized education as a precondition for development and set out three critical issues in those policies – equity, accessibility and quality.

In 2002, the 86th amendment to the Indian Constitution introduced Article 21-A, making 'The Right to Education' a Fundamental Right. The Right of Children to Free and Compulsory Education Act, 2009 served as the enabling legislation to make the right guaranteed by the Constitution effective. Of all the other far-reaching changes and amendments brought about by the Act, Section 12(1)(c) of the Right to Education (RTE) has been the most controversial by far. ***The Section mandates all private unaided schools in the country to reserve 25% of the seats in Class I, or the entry level class in their school, for students from economically weaker sections (EWS), socially disadvantaged groups (DG), physically handicapped children and orphans and to provide free and compulsory education to them till Class VIII.*** The Act has the potential to impact 1.6 crore children from EWS and DG categories in the first eight years of implementation. This provision of the Act ensures inclusion of children from marginalised communities (defined as disadvantaged and weaker sections under Section 2 (d) and (e) of the Act) in private unaided schools.

The Act was enforced in April 2010, with rules framed by the state government regarding admission directly attacking the independence and autonomy of private unaided schools in matters of admission policy. The RTE Act brought to the fore that equality and equality of opportunity is a fundamental principle of democracy, and the fact that schools, all schools, serve social objectives. The intention underlying this provision was to ensure that all stakeholders in the field of education share the obligation of realizing the right to free and compulsory elementary education.

In its true spirit Section 12(1)(c) envisioned to create an environment that enabled children from different backgrounds to share knowledge on a common platform across caste, class and gender divides, with varying interests and ability, achieve their highest potential by studying in a shared classroom. It aimed to narrow down the class based division and to desegregate society. By specifying a minimum share of students who should be admitted in schools at the entry level, the mandate ensured that the child coming from the Disadvantaged Group is not isolated.

Recognising the challenges of social inclusion in a segregated society, the policy mandated integration starting at the school's entry level grade. Guarding against "quick-fix social engineering", the presence of the requirement is attributed to the "fact that children take time to socialise and teachers take time to develop new attitudes and pedagogic skills. With these children moving up, and a new cohort of children entering pre-school and Class I in each successive year, the school will gradually have a more diverse population spread across all classes. Progression at this pace will allow children the opportunity to grow up together and create bonds: bonds that can survive social walls."¹

Section 12(1)(c) has a much deeper and longer lasting aim than to just level the playing field between the rich and the poor. The thinking echoes the longstanding belief that inclusion across classes, genders and castes does and will lead to a higher quality of learning for all children. The inclusion of socially diverse children in the same classroom enables children from varied socio cultural backgrounds to share world views. Studies and reports from all over the world show that more equitable education systems also achieve higher learning outcomes on an average and emphasise that inequality hurts not only the disadvantaged within a society, but society as a whole. Therefore, creation of a diversified and pluralist space of cultural

interaction within school is a precondition for its intervention or participation in the life of the outside community.

Ever since it came into force, the Act has met innumerable legal, administrative and financial obstacles. When The RTE bill was passed, responses to Section 12(1)(c) were quick and heated. Its inclusion in the Act and the implications it had (of economic and social inclusion) for all stakeholders was questioned and debated.

Supporters of private schooling worried about financial implications due to inadequate reimbursements by the government and saw the mandate as undue interference. Opinion was also divided on the mandate's impact on children themselves. A popular opinion was that potentially unbridgeable social distances between students admitted under the mandate and the rest of the students would lead to adverse consequences for those the mandate seeks to benefit. There was likewise worry about the potential fall in learning levels for the rest of the students as teachers get diverted to helping children without adequate learning support and an environment amiable to academics at home. Families from wealthier backgrounds spoke of a drop in learning and more interestingly, their discomfort at the sharing of resources by their children and their servant's children. Teachers spoke of their inability to cater to the differentiated learning speeds, fearing that curriculum would not be completed by year-end. Finally parents from EWS and DG backgrounds dreaded the treatment their children would receive in schools that had once fought so vehemently to keep them out.

Even as the debates continued, the Central Government exercising its power appointed the 1st day of April, 2010 as the date on which the provisions of the said Act would come into force. Private schools, which had previously not given admission to children from poor families, now had to admit as many as 25% of children from economically weaker sections and disadvantaged groups (Scheduled Tribe, Scheduled Caste and Other Backward Classes).

At the school level, the challenges of implementation of this provision included developing the criteria for admissions, fee reimbursement shortfalls with the State, budgetary adjustments required, overall school preparedness, in-service teacher training, socio-cultural dynamics of inclusive education and integration of the children admitted in this category in the wider school system.

Following the mandate, in the year 2009-2010, 10% students under the economically disadvantaged category were enrolled in RSJMS in the entry level class – the Nursery. 45 children from EWS and other DG were admitted, in the year 2011-2012. Since 2011, each year, 25% seats are allotted to children coming from EWS and DG categories, who study free of charge.

The objective of inclusive education can never be truly achieved without focussing on concrete material and cultural experiences of the hitherto excluded groups within the framework of equality principle and redistributive justice. All schools must be made capable of meeting individualised needs of all students and open their classroom to the analysis of existing disparities.

Did granting admissions address the issue of social inclusion? No. Merely giving admission to a child in the school did not guarantee inclusion. When our school enrolled students from the economically poor sections from the neighbourhood, we faced numerous challenges.

- The stark contrast between the students from affluent families and those enrolled under the RTE Act, led to their stereotyping as children who used bad language, were unhygienic, malnourished and messy.
- Teachers expressed their concern about catering to the diverse learning ability of children.
- Language was a barrier, as children from EWS and DG used Hindi and the school was an English medium school, leading to communication gap with their peers and teachers.
- These children came from deprived and in some cases dysfunctional backgrounds and many displayed symptoms of behavioural, emotional and psychological problems.
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In order to truly include these children in the functioning of the school whereby they could feel safe, valued and above all utilize the opportunities offered and actively participate in its functioning, a lot of effort was made. The challenges were overwhelming, but with each subsequent year the school machinery showed remarkable resilience and adapted itself to the new reality. The whole structure of the education system has and is still being modified to address these challenges.

With the enrolment of children from EWS and DG category, and keeping in mind the socio-emotional and physical well-being of each child, various practices were adopted to create an atmosphere of equality. Some of the notable modifications, adaptations and accommodations are:

- A uniform dress code was introduced at the entry level to eliminate signs of visual differences amongst students.
- Being an English medium school, RSJMS had to shift the medium of communication for the children and their families. The teachers gradually switch to English language and ensure preparedness of children for the same. Bilingual instructions are given to parents during parent-teacher meetings and orientation programmes. School circulars are bilingual.
- Weekly special classes are held for parents, wherein, teachers discuss proposed work for the week and teaching methodology. They are encouraged to reinforce concepts at home with help from teachers, and refrain from appointing services of private tutors.
- To facilitate understanding of parents of children admitted under the RTE Act and plug communication gaps, a ‘Buddy’ parent system was introduced. Parents of Non-EWS students volunteer their support as buddies to assist the parents and address their concerns.
- The school provides the children enrolled under the RTE Act free books, notebooks, stationary and uniforms.
- Being truly inclusive, the children enrolled under the RTE Act are also a part of school functions and morning assemblies. Costumes for various functions are provided to them at concessional rates.

- To combat cultural marginality, morning assemblies are planned around festivals associated with various cultural and religious communities. All festivals, be it Diwali, Eid or Easter, are celebrated with equal fervour.
- Unique talents and abilities among children are recognized and they are enrolled for training in their specific talent, be it sports, arts or/and music.
- Besides organizing motivational talks and story sessions, the school supplements the educational needs of the children admitted under the RTE Act with experiential learning, field trips and extracurricular activities.
- For classes Nursery to 2, parent volunteers bring fruits for the entire class and serve the assortment to all children in equal portions, thus providing for the deprived too.
- Children with behavioural and psychological problems are referred to the school's Learning Center comprising of special educators and counsellors who assist in the process of identification of the problem and its formal diagnosis. All low achievers are provided counselling in equal measure, irrespective of their background.
- Through a specifically designed life skills and value education programme, the school is inculcating the value of social inclusion in children. A period in class timetable has been set aside on teaching basic etiquettes and manners, through the school's Education Handbook.
- Teachers are encouraged to spend time with the students in order to understand their interests and backgrounds. Home visits are made to understand the contextual influences on child's learning. In case of absenteeism, teachers call up the parents to enquire about the child's wellbeing.
- Any practice highlighting differences in the economic backgrounds of children is discouraged. Birthday celebrations are restricted to sweets distribution. Children are advised not to bring expensive stationary, tiffin and other accessories. There is a prescribed meal plan to ensure that children don't feel inferior due to the kind of food they get to school. Irrespective of their background, all children are encouraged to keep their classrooms clean by using the available broom, dustpan or a cloth duster. Tasks are assigned equally to boys and girls. As biases based on gender or economic background creeps in early in the psyche of children, positive reinforcements are provided through conscious effort.
- School offers an important public space with potential to facilitate dialogue as it brings different socio-economic and religious groups together within the same spatial enclosure. The school is conscious of its role as an agent in offering a platform to foster understanding and bring together people from diverse groups.
- Every child is included under a health insurance scheme.

The above practices have led to improvement in the participation levels of the children admitted under the RTE Act. There has been a remarkable boost in their self-confidence and self-esteem.

The biggest hurdle that the school faced was in dealing with behavioural, emotional and psychological problems that the EWS children suffered from. Their problems varied from mild manifestations to those falling in severe categories.

Numerous studies were done and research carried out by the school counselors and teachers in order to get to the root of the problems and seek appropriate interventions. A deeper study unfolded a complex relationship between a child and the various environments the child moves in.

The examination of one child in particular, provided a wealth of data, leading to understanding of inclusion of these children in our school. This study involved a seven year old boy who has been diagnosed with ADHD and is at risk for ODD. The case provides a conceptual framework for understanding equity and inclusivity of children under disadvantaged category.

The overall experience of disadvantaged children with mental health problems is mostly unproductive and negative. Through this case study, educators will gain an understanding of these children and the world within which they operate. Educational interventions can then be implemented to meet their educational potential.

Karan's Background (name changed)

Karan is a 7 year old boy who studies in RSJMS under the category of economically weaker section. In Nursery, the child was new to the system of formal education. The teacher in-charge gave him enough time to adjust to the classroom environment. However, certain deviations were observed in his mannerisms, such as lack of speech, difficulty in comprehending teacher's instructions, using abusive language, drenching himself, shouting and running in the corridors and class. These behavioural problems further deteriorated with time resulting in yelling, name calling, spitting and damaging school property.

In order to understand Karan's deviant behaviour, the school counsellors and class teacher conducted many assessments. They visited Karan's house and interviewed his family members and neighbours. After all assessments, the details of Karan's traumatic background emerged.

Karan was living in a joint family comprising of father, grandparents, uncle and aunt in a slum situated in Delhi. His is a dysfunctional family with an environment of conflicts, fights, arguments and tension. His mother committed suicide due to constant fights and demand of dowry. He was one year and six months old when he lost his mother. His father is mostly unemployed and is an alcoholic. The father has criminal charges against him and often fights in the neighbourhood. The neighbours prefer to stay away from him and his family due to his tendency to harm people when drunk. They reported that he often abused Karan, both physically and verbally, and fought with other family members over finances. Due to the tainted family background, children in the neighbourhood did not interact with Karan; as a result he became socially withdrawn.

Karan's physical development was achieved at appropriate age. However, his cognitive development has been significantly delayed. He has a short attention span, poor problem solving skills, unclear speech, and limited vocabulary. His emotional and social development is severely affected. He is unable to manage his feelings due to which he has frequent mood swings and emotional outbursts. He is stubborn and has no fear of authority. His interpersonal skills are not developed. He feels insecure,

hesitant and anxious while interacting with his peer group. He is comfortable interacting with children older to him. He exhibits anxious attachment patterns, which results in dependency on a few people. He is a fussy eater and does not take a proper diet. He has frequent complaints of cough, cold and skin problems.

Karan's case study helped the teachers understand and empathize with the causal factors leading to behavioural deviations in such children and devise strategies based on the 'Systems Theory' by Urie Bronfenbrenner (1979, 1989).

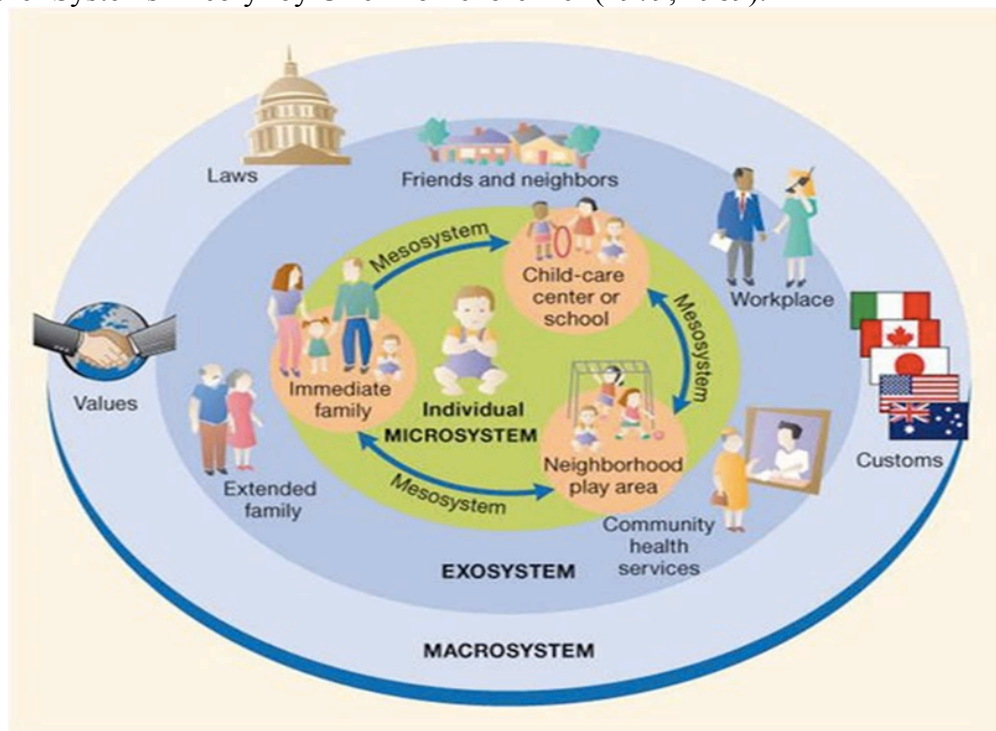


Figure 1: Ecological Systems Diagram adapted from Berk, L. E. (2000)

Home environments, schools and other places where the child spends considerable time or which directly or indirectly affect the child's well-being are viewed as ecologies. What happens in one part of the system can have a ripple effect on others (Roffey, 2008). Adaptive and maladaptive behaviours may be either augmented or diminished within the system.

Ecological systems theory provides a means to describe how a child's behavioural pattern is influenced by the layers of systems in his environment. It became imperative that we examined whether the 'systems' provided safe, secure and positive environment to the students enrolled under EWS and DG category. Examinations were made of each child enrolled under EWS category followed by relevant interventions to foster well-being.

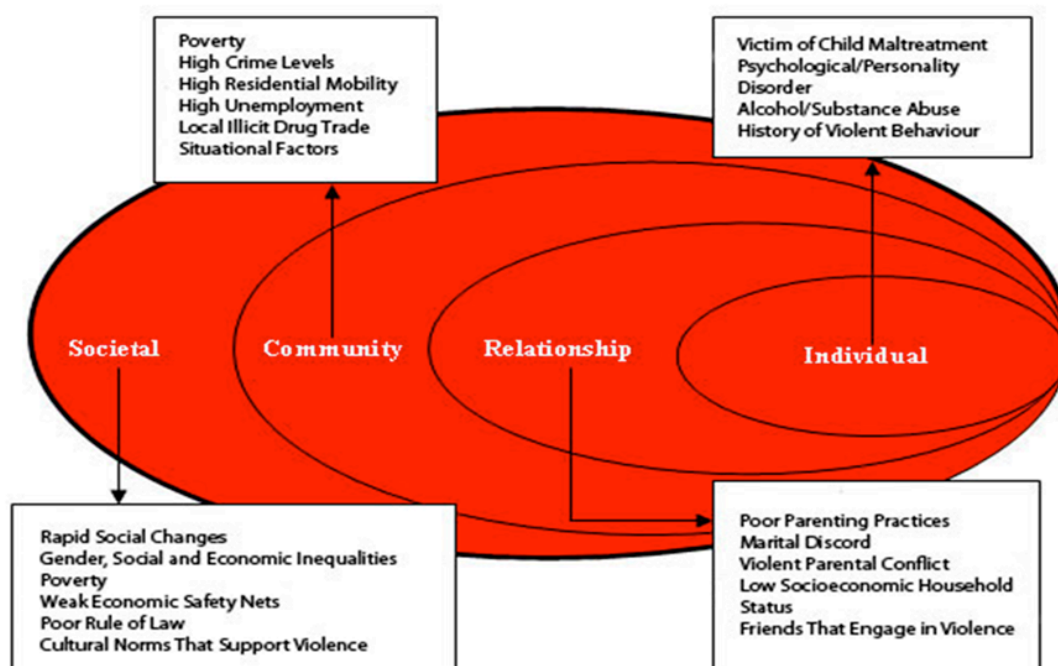


Figure 2: The ecological framework: examples of risk factors at each level (WHO) Keeping the child in the centre of his system, we examined the various systems and the interactions between these systems, which are-

(A) **Micro System-** The micro system is the immediate setting in which the child engages in face-to-face interaction. Such a setting is considered to have a direct impact on experience. Home is often the first and most significant micro system in a child's life, another being his school and neighbourhood.

Most of the students from the EWS in our school have been brought up in dysfunctional families. Due to the absence of academic inputs at home, their cognitive skills are not well developed. In Karan's case, prolonged marital conflict between the parents, after his birth, led to his neglect, inconsistent discipline and hostility towards him. This resulted in his poor health, low cognitive ability, difficult temperament, unclear speech and limited vocabulary.

(B) **Meso System-** The meso system comprises of the linkages and processes taking place between two or more settings of the developing person (e.g. the relations between home, school and neighbourhood).

Ignorant of the academic curriculum, parents are unable to assess the academic progress of their children. There are constant conflicts between families and the neighbourhood they reside in, with fights over possession of scarce resources, such as water and space. Their neighbourhood comprises of families who indulge in anti-social behaviours such as gambling, alcoholism, physical fights, and verbal abuse. Due to financial constraints and lack of resources, their health and nutritional needs are also not met.

In this case, Karan's parents had no involvement and contribution in his academic learning. Children in the neighbourhood did not interact with him. This explained his insecurity, low self-esteem and social withdrawal.

(C) Exo System– The exo system refers to settings in which the child is not directly involved but in which events occur that affect what happens in the setting in which he or she is involved. Exo systems may include the parent's place of work, network of friends, medical facilities, school and government policies.

The families of EWS children live in financial strain and parental stress, which in turn affects their mental health. They are unable to receive appropriate health services such as vaccinations, nutritional advice and general physical examination.

In this case, Karan and his family have been socially excluded from the community. He did not receive health services such as speech therapy, counselling and general physical examination which worsened his symptoms of ADHD.

(D) Macro System- The macro system is the broadest ecological contextual system, with which the child does not have any direct experience. It describes the culture in which individuals live. Cultural contexts include developing and industrialized countries, socio-economic status, poverty, and ethnicity. Economic and social policies that maintain socio-economic inequalities between people. Social and cultural norms such as those around male dominance over women, parental dominance over children. People from poor background are identified in urban areas with chaotic, disorganized lives, absence of parental ambition for children and a tendency to addiction. Karan and other children from EWS background faced prejudice in class. This further caused low self-esteem and withdrawal. On the other hand, in some cases, it manifested in rebellious behaviour and aggression.

It will take a while to change cultural values associated with poverty. When India becomes an egalitarian society, perceptions about poverty will also change. With RTE Act in practice one can be hopeful that positive changes would occur in the society making social inclusion a reality.

Interventions Done At the Systems Level

Interventions were done at each level. Interactions between the various systems were carefully examined and better, workable and sustainable solutions were sought.

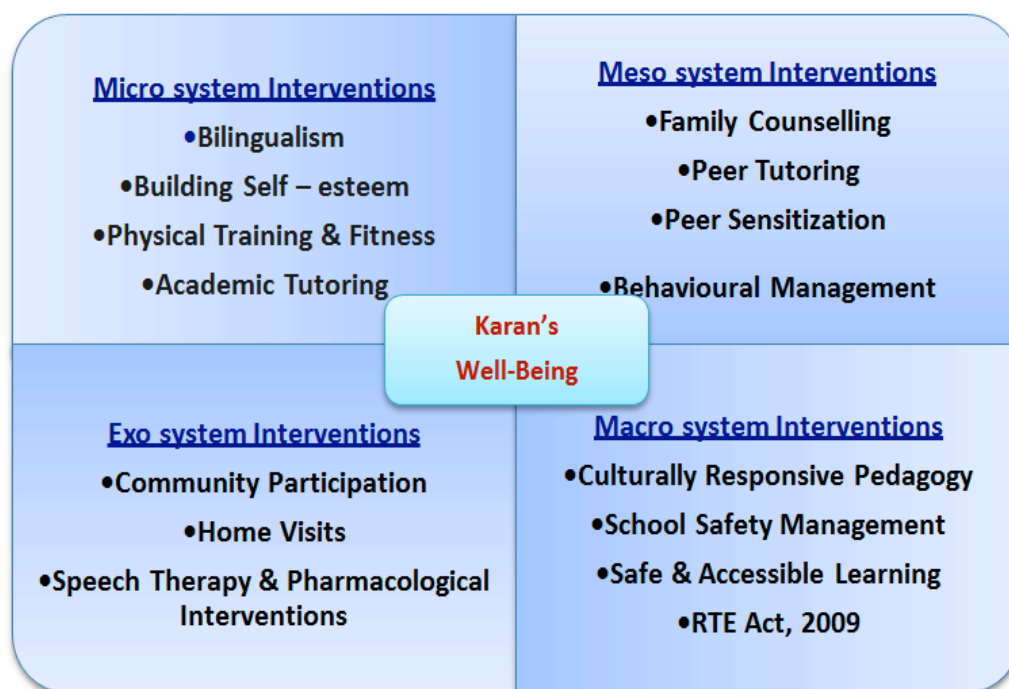


Figure 3: Karan's Well-being across Systems

(A) Interventions at Micro Level & Meso level

To inculcate a sense of belonging and improving their self-esteem, unique talents and abilities are being recognized in each child and they are enrolled in the activities as per their interests and capabilities. Usage of English Language has been replaced by bilingual teaching. Participation of children from disadvantaged category in various functions and classroom activities is ensured.

In this case, Karan's diet played a crucial role in his physical and mental health. His basic needs of health and nutrition were taken care of. Karan is served milk and fruits in school. He is enrolled in physical training whereby a physical trainer has been assigned to train him in athletics. The class teacher periodically apprises his classmates and their parents about the problems faced by Karan and encourage them to be sensitive towards his needs. A specialized education and behavioural management plan was shared with his grandmother, care-givers, teachers and other healthcare providers.

Teachers undertake home visits of these children and assess the chronic strains or discrete life events associated with their academic and behavioural problems and counsel family members accordingly.

(B) Interventions at Exo level And Macro level

The school implements a culturally responsive pedagogy for imparting knowledge that respects diversity and creates a safe, inclusive and respectful learning environment.

Karan's grandmother was told to get the child assessed for ADHD, speech and special needs. Required evaluations were done by medical practitioners and the school

arranged and paid for all the expenses. The child is receiving pharmacological intervention to control his symptoms.

The RTE Act is a huge initiative for removing economic disparities ensuring equalization of educational opportunities. In light of the RTE Act, the National Curriculum Framework (2005) has laid down a clear context of inclusive education and practices. Teachers realize the value of accepting each child as a unique individual and educate children with economic disadvantages along with regular children, under the same roof.

Conclusion

Indian society continues to remain stratified as before with socio economic inequalities. But school education has had unprecedented expansion with a demand from historically excluded sections of society including EWS/DG's. Today almost every parent, from rural or urban areas, rich or poor, wishes to educate his child. The overall structure of school education still remains stratified with graded hierarchies between school systems (Elite private schools, Low Fee Private schools, Government schools). The provisions laid down in the RTE Act, 2009 create some space for disadvantaged children and provide them access, which they can never hope for otherwise. This is a progressive change. Since social inclusion means rendering classrooms inclusive, Bronfenbrenner's Ecological Theory provides a theoretical lens to create an inclusive space for teachers and students where 'each' child is included and his well-being ensured. Not just survival in the classrooms, but thriving in inclusive classrooms.

Any change that affects the social fabric of a society seems difficult initially, but it is a gift and calls for change. If we want to catalyse a shift to thriving cultures of teaching, we need to value and train teachers to practise and promote well-being in their school on a daily basis. Schools have a huge responsibility of achieving this goal.

Based on the interventions done as per the Systems Theory to help Karan, interventions for many other children with similar conditions and backgrounds were done. We are happy to state that we have been receiving positive feedbacks from the children, their families, friends and teachers.

This is a time to question our underlying beliefs, attitudes and assumptions and discover ways to reinvent the system. Bronfenbrenner Ecological Theory (1977, 1979) is a perfect model, which creates common spaces for teachers and students to come together to use conversations, enquiries and well-being practices to build up a healthy community.

We have to make a choice as to whether we want to survive or thrive.

Footnote:

1. State of the Nation: RTE Section 12 (I)(c)- report published in 2016. pp. 15

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Exploring Leadership Characteristics of Public and Private High School Administrators in The Division of Malabon: A Comparative Analysis

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

The study investigated Administrators' Leadership Characteristics in terms of style, traits and integrity. Twenty-one (21) administrators, 145 middle level administrators and 378 teachers were involved in the study from 12 public and nine (9) private high schools in the Division of Malabon. The descriptive method of research was used with questionnaire as the data gathering instrument. The hypotheses were formulated and tested using t-test, ANOVA procedures and Pearson r statistical tools. The findings showed that there was a significant difference when comparing the leadership styles, and traits of public and private high school principals. When testing the difference between the integrity of administrators, result showed that there was no significant difference between the two. It also revealed that there was no significant relationship between leadership style and leadership traits among public high school administrators. There was a significant relationship between the leadership style and trait among private high school principals. In terms of the relationship between leadership style and integrity, both administrators showed no significant relationship. The leadership traits and integrity showed that there was a significant relationship among the private high school administrator and public high school administrators showed no significant relationship between traits and integrity. Based on the findings, it is recommended that administrators should be aware of their leadership characteristics and its effect to the organization. Training should be given to develop and strengthen leadership traits and integrity. Finally, a Strategic Leadership Program for administrators must be reinforced.

Keywords: Leadership characteristics, traits, integrity, style, administrators

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Introduction

Educating the nation is the greatest responsibility of school leaders, specifically, the principals. The principals are the chief educational leaders who play significant roles in shaping the nature of the school organization. They have the capacity to influence, give support, build leader-follower relationship, and taking into consideration their characteristics as a true leader. These characteristics are very important to school leaders in shaping the nature of their organization. Through their leadership characteristics, they can influence their organization as they aid and give support to the people in achieving the success or and to make a difference in the organization. The focus of this study is to explore the leadership characteristics of public and private high school administrators in Malabon City and have a comparative analysis. Leadership characteristics are focused on the leadership style, traits and integrity of the administrator.

Three groups of respondents which include the principals themselves, the middle level administrators, and the teachers were asked to assess the leadership characteristics of the principals as to their style, traits and integrity in leading their respective schools. The groups of respondents answered a questionnaire in exploring the leadership characteristics of the principals. The questionnaire was to identify the style preferred by the principals in performing their duties, as well as to determine the traits and integrity they had manifested in dealing with issues in relation to their functions. The gathered responses were utilized in proposing a Strategic Leadership Program for Administrators.

Leadership Characteristics

Leadership style

Leadership style is an element of administrator's leadership characteristics that eventually the decision making behavior of the administrator. Leadership style can be influenced by one's personality which deals mainly with the manner of the leader on how he/she carries his/her functions or authority and power and the decision-making process. Leadership style is defined and identified by competencies and skills that the leader applies to guide facilitate and support the people of the organization in their efforts to accomplish the tasks. This reveals decision-making behavior which is a result of the philosophy, personality and experience of the leader. Consequently, principals need adequate knowledge and skills of selecting and using leadership style as the situations require in order to successfully achieving the goals of their schools (Wote, 2014).

Autocratic Leadership Style

Autocratic leadership style or authoritarian refers to the condition where the leader trains the followers what to do next, when is the correct timeframe to do it, and how to execute it. All decision-making powers were centralized in the leader with the minimal participation from the followers. This style allows quick-decision-making, since only one person decides for the whole group and keeps each decision to him until he feels it is needed to share with the group. The leader does not entertain suggestions or initiatives from subordinates. He does not delegate authority nor permit

subordinates to participate in policy –making. Autocratic leaders are controlling, power-oriented, and prefer punishment instead of reward.

In autocratic leadership, Lewin, White and Lippit concluded that autocratic leaders are found to work harder when the group leader is present. It was also found out that autocratically led groups experienced more resentment, aggression and indifference than any other group (Heutt, 2011). On the other hand, individuals and groups who are not motivated, not interested or not familiar with the task benefit the most from working with autocratic leaders and had been found to influence multiple people and be helpful in certain settings (Galanes and Adams, 2010 & Iqbal, et al, 2015).

Democratic leadership Style

Democratic or participative leadership style refers to a situation where there is an equal work among leaders and followers. This leadership style favors decision making by the group. This is in contrast with the autocratic style as it often says- “I want you”, but in participative style, it is more of “let us”. There is a decentralization of authority, participatory planning, and mutual communication. There is consultation before decisions are taken, although he makes the final decisions. This is beneficial because if the employees are not being consulted, they might just be following orders from the leaders and sometimes secretly resist the order by insubordination (Jay, 2014). A democratic leader with consultative style has a substantial but not complete confidence and trust in the employees. More so, a democratic leader is a persuasive leader. The leader makes a decision about new policy and then informs the members of the organization about the decisions made and seeks their support to the decision made by convincing them with the benefits they can get from it.

Considering these conditions, the subordinates are empowered to their maximum capacity and desire. The democratic leaders place a strong synergy and commitment and collaboration with team members and act as advisor to develop a natural motivating environment in the group. However, democratic or participative leadership style is appropriate when the organization have competent and skilled employees who can be part in the organization’s planning, decision-making and evaluating results (Iqbal, et al, 2015).

Laissez-Faire Leadership Style

Laissez-faire leadership style is where the leaders provide maximum supervision, since the group members have to work on their own, and make decisions, on the next phases they need to take to finish their tasks. This style was defined as the manner and approach of providing directions, implementing plans, and motivating people who eventually promote teamwork, and good interpersonal relationship. Leaders keep off and allow group members to make decisions. A laissez-faire leader does not lead, but leaves the group entirely as it is such a leader allows maximum freedom to subordinates. Freedom are freely determined by the group’s goals, techniques, and working methods. There is autonomy among the members of the organization, thus they have complete freedom to make decisions.

Laissez-faire leaders do not influence their subordinates and do not demonstrate abilities to lead, but rather demonstrate a lack of leadership (Northouse, 2011).

Laissez-faire style could lead to team anarchy, chaos, and incompetence which may lead to inefficiency (Ronald, 2011). This style is not ideal in situations where group members lack the knowledge or experience to complete the task and make decisions (Emery, 2015).

Putting together the three leadership styles practiced by administrators, there is no single leadership style that a successful leader may use. Leadership style is not a one size fits all phenomenon, rather it should be selected and adapted to fit the organization, situations, groups and individuals. It can be applied depending on the personality, and experiences of the leader which may influence the decision-making process of the leaders and eventually affect the whole organization.

Leadership Trait

Leadership Trait is anchored on trait theory. It focuses on the innate qualities and characteristics possess by a great leader or even to anyone. Traits are characteristics that are innate to anyone. Whether leaders are born with leadership characteristics or not, people who have leadership potential may change their traits. Leadership traits are essential among the leaders who are given responsibility. It paves the idea that personality trait has an important role in leadership to manage an organization. Consequently, it highlights the leaders' component of the leadership process which typically composed of the leaders, followers, and the situations.

The trait exhibited by the leaders provided a clearer picture of who they are as leaders and how they fit in the organization. Leadership traits include collaboration, commitment, trust, respect, articulation, perception, self-confidence, self-assurance, flexibility, persistence, determination, trustworthiness, dependability, friendliness, and enthusiasm. Effective leaders have high level of commitment to the goal of improving school readiness and to the organization's mission. School leaders must stabilize pleasant school culture. Leaders are committed to and believe in the benefits of collaboration. Studies emphasized the importance of collaborative relationship between principals and teachers when they studied teacher retention strategies.

Leadership Integrity

Integrity of leaders is anchored on moral or ethical behaviors of leaders. When we speak of ethical or moral, it encompasses actions which are in accordance with social accepted behavior (Pillay, 2014). In dealing with conflicts, a leader must be guided by ethical behavior in considering options, as our choices shape us as being good or bad, and whether an action that taken will harm someone or something (Van Aswegen & Engelbreecht as cited by Pillay, 2014). Effective leadership requires leaders of integrity, thus leaders must act following code of standard of moral virtue which prevents undesirable behavior in thought, in words or in deed. These leaders show the desire to excel in order to meet to achieve the school's vision and goals. A person of high integrity may be filled with challenges, but most all rewards, and the legacy of good leadership that will bring lasting effect (Azuka, as cited by Pillay, 2014).

Lack of integrity may affect the trust and confidence of the followers or subordinates to their leaders and believed to have an impact on the organization's operation. Without integrity, there will be no real success, as the leaders are more likely to

engage in unethical or counterproductive behaviors. It is therefore vital that leaders conduct themselves with integrity to facilitate the day to day operations and the overall functioning of an organization.

Findings

High School Administrators Leadership Style

Teachers rated their principal Frequently True that they *always try to include one or more employees in determining what to do and how to do it, however, they maintain the final decision making authority*. It is Occasionally True that they *do not consider suggestions made by the employees as they do not have time for them*. These results convey that the teachers believed their public high school administrators consider decentralization of authority, participatory and mutual communication. Middle level administrator respondents rated their public high schools principals Frequently True that they *always try to include one or more employees in determining what to do and how to do it, however, they maintain the final decision making authority and they wanted to create an environment where the employees take ownership of the project and they allowed them to participate in the decision –making process*. It is Seldom True that they *do not consider suggestions made by the employees as they do not have time for them*. The principals rated themselves Frequently True that they *wanted to create an environment where the employees have ownership on the projects and allowed them to participate in decision-making process*, and Seldom True that they *do not consider suggestions made by the employees as they do not have time for them*, with the lowest mean of 1.50. These results suggest that the administrators believed that when employees are involved in the decision-making, the employees will feel the power of confidence in decision-making, making them more effective in the organization. This was supported by the findings of the study of Iqbal et al (2015) that leadership has a positive effect on the performance of the employees.

Private School Administrators Leadership Style

Teachers rated their principals Almost Always True that they *always try to include one or more employees in determining what to do and how to do it, though, they maintain the final decision-making authority*. They were rated Seldom True that they *do not consider suggestions made by the employees as they do not have time for them*. This means that the private high school administrators believed in the power of participation and consultation of employees in the decision-making process. The middle level administrators rated their principals Almost Always True that they *delegate tasks in order to implement a new procedure or process*. This result is due to the fact that the principals and the middle level administrators are working closely together where they have developed a leader- follower relationship which resulted to the development of trust and confidence that the middle level can do the tasks without close supervision. The principals rated Frequently True that *employees can lead themselves just as well as leaders can*.

High School Administrators ‘Leadership Traits

The teachers and the middle level administrators in the public schools rated their public high school principals Agree to have high level of commitment to the goals of

improving school readiness and to the organizations' mission. The principals rated themselves Strongly Agree in assessing their level of commitment to the goal of improving schools readiness. They rated themselves the lowest in driving enthusiasm, and tolerance for stress which means that they have a problem in terms of motivating and influencing people. They felt and believed that they still need to improve their enthusiasm and tolerance to stress to make a difference in their organization. Table 3 shows the summary of responses of the three groups of respondents on the public high school administrators in terms of traits.

Teachers in private high schools rated their principals strongly agree in assessing the commitment to the goal of improving school readiness and to the organization's mission. Further, teachers strongly agree that their principals view other stakeholders positively and trust their positions, were respectful as they respect and appreciate differing perspectives, have self-confidence, they are flexible as they are able to adjust to different situations and were friendly since they show kindness and warmth. However, teachers assessed their principal the lowest in terms of effective communication. They perceived that their principals have difficulty in conveying the message they wanted to disseminate which may affect the plans or projects they want to implement. Middle level administrators strongly agree that the principals possess all the qualities of effective leaders. This is also true with the ratings of the principals themselves. These findings show that the middle level administrators who are working closely with the principals know very well the characteristics displayed by their principals.

High School Administrators Leadership Integrity

The public school administrators, as well as the private high school principals were rated **Rarely** that they practiced integrity indicators based on the assessment made by the three groups of respondents. This means that both public and high school principals display High Integrity. These results manifested that the principals were believed that they are doing what is right and they observe ethics to keep this integrity intact. To get the trust and confidence of the followers, leaders should create a climate that is fulfilling to the organization and to the school itself. It is vital that the administrators conduct themselves with integrity to facilitate the day-to-day operations and the over-all functioning of an organization.

Test of Difference between public and private high school administrators leadership characteristics

Table 1 Test of Difference between the Public and Private High School Administrators 'Leadership Styles

School Administrators	Mean	SD	Computed t-value	Tabular value at 0.05	Description	Decision
Public	3.25	0.39	4.98	2.00	Significant	Reject Ho
Private	3.94	0.63				

It can be observed that the computed t value of 4.98 is higher than the tabular value of 2.00. This indicates that there was a significant difference in the leadership styles of their administrators, thus, the null hypothesis is rejected. This may be because of the

nature, culture and climate, as well as other related factors that may affect the decision-making behavior of the two groups considering the differing environment of the public and private school.

Table 2 Test of Difference between the Public and Private School Administrators' Leadership Traits

School Administrators	Mean	SD	Computed t-value	Tabular value at 0.05	Description	Decision
Public	4.19	0.13	8.86	2.05	Significant	Reject Ho
Private	4.59	0.11				

The computed t value of 8.86 is higher than the tabular value of 2.05. This indicates that there was a significant difference in the leadership traits of the public and private high school administrators as assessed by the three groups of respondents from the public and private high schools. It reveals that private schools administrators strongly agree that they exhibit the leadership traits expected of them.

Table 3. Test of Difference between the Public and Private School Administrators' Leadership Integrity

School Administrators	Mean	SD	Computed t	Tabular value at 0.05	Description	Decision
Public	1.56	0.20	0.37	0.72	Not Significant	Accept Ho
Private	1.54	0.21				

The data show that there was no significant difference in terms of leadership integrity as perceived by the teachers, middle level administrators and the principals themselves with a computed t value of 0.37 and tabular value of 0.72. This indicates that the null hypothesis is accepted. This implies that the integrity of teachers was not affected by where the principals are rendering their services. This is because, as an educator, they must be guided by the Code of conduct observed by a professional teacher and the ethical values of being a leader. A leader to be able to implement change is a person of high integrity.

Test of relationship between public and private school administrators' leadership characteristics

Table 4 Test of Relationship between School Administrators' Leadership Styles and Leadership Traits

School Administrators	Computed r	Tabular value at 0.05	Description	Decision
Public	0.33	0.5760	Not Significant	Accept Ho
Private	0.86	0.6664	Significant	Reject Ho

Among the public high schools, the computed values of $r=0.33$ is less than their corresponding tabular r values $=0.5760$ showed no significant relationship between the leadership style and the leadership traits of their principals, thus the null

hypothesis is accepted. This reveals that the leadership style or the authority of the public school principals is not in any relation to the trait they possess. This may be explained by the fact that public school principals are practicing not only one style of leadership instead, they use a certain style depending on the situation they are in without looking into the trait they manifested. This also reveals that style and traits of the public high school principals were not the basis of an effective leader.

However, in the private high schools, the computed r -value of 0.86 is higher than the tabular r -value of 0.6664, therefore, there was a significant relationship between the style and traits of the private high school principals. The null hypothesis was rejected. This may be explained by the fact that the private high school principals are closely monitored by the owners of the schools and the Board of Trustees, therefore, the administrators need to be very careful with the leadership style they practice and the leadership traits they need to manifest in performing their tasks. It denotes that the style of leading the school should be in accordance to the innate traits of the leader which is dependent on the school culture and climate.

Table 5 Test of Relationship between School Administrators' Leadership Styles and Leadership Integrity

School Administrators	Computed r	Tabular value at 0.05	Description	Decision
Public	-0.39	0.5760	Not Significant	Accept Ho
Private	0.01	0.6664	Not Significant	Accept Ho

Table 5 shows a negative correlation between the styles and integrity of the public high school administrators with computed r -value of -0.39 and tabular value of 0.5760, as well as the private high school principals with a computed r -value of 0.01 and tabular values of 0.6664. The obtained data shows that the styles and integrity were not significant, thus accept the null hypothesis. This means that the leadership style was independent of the leadership integrity of the administrators. The leadership styles practiced by the administrators may depend on other variables like the school culture and climate. It may also show that the leadership traits and leadership integrity of the principals depend upon the situations and the moral and ethical considerations of the administrators themselves.

Table 6 Test of Relationship between School Administrators' Leadership Traits and Leadership Integrity

School Administrators	Computed r	Tabular value at 0.05	Description	Decision
Public	-0.63	0.5760	Significant	Reject Ho
Private	0.01	0.6664	Not Significant	Accept Ho

In as much as the computed values of r – is higher than the tabular r values, then there is a significant relationship between principals' traits and leadership integrity. Among the public high school principals having computed tabular r -value of -0.63 against the tabular value of 0.5760, thus the null hypothesis therefore is rejected. This reveals that the public high school principals are always guided by their traits and integrity in all circumstances. On the other hand, for the private high schools, the computed r value of 0.01 is lower than the tabular r value of 0.6664; thus, there is no significant relationship between the traits and the leadership integrity of the principals. This means that the private high school administrators are confident that leadership traits they manifest is more than enough to become effective leaders. It reveals that high integrity does not in any relation to the traits of the private high school principal's manifest.

Based on the findings, a Strategic Leadership Program for Administrators (SLPA) was proposed to enhance the leadership characteristics, develop communication skills and management, enhance the moral and ethical standards of administrators and develop a well-rounded, highly moral and ethical and potential leader.

Conclusions

1. Public and private high school administrators' in the division of Malabon use democratic, autocratic and laissez-faire leadership style in decision –making, with democratic style as the most commonly used in leading the organization.
2. Public high school respondents Agree that their principals possess the personal traits of effective administrators while the private high schools Strongly Agree that their principals possess the personal traits of an effective leader.
3. Public and Private high school principals are seen to be of high integrity based from the assessment made.

Suggestions

1. In as much as the leadership characteristics, administrators should be given more trainings about leadership styles, traits and integrity to be cascaded to the community especially to teachers and middle level administrators.
2. The researcher may disseminate the findings of the study to the Division of Malabon enhancing administrators and middle level administrators to develop potential leaders in the division.
3. The adoption of the crafted Strategic Leadership Program for Administrators be tested by the organization to see the effectiveness of democratic style of leadership for schools to achieve excellent performance in education.
4. Lastly, for future researchers, due to the limitations of the study, it is recommended that similar studies be conducted in order to strengthen and affirm its findings.

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Beliefs, Attitudes, Challenges and Factors in The Implementation of The New Curriculum: Basis for a Curriculum Model

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

This research study sought to determine the dominant factors influencing the implementation of a new curriculum such as the K-12 curriculum. Two-hundred ninety respondents from the four schools of Lanao del Norte participated in this study to investigate their beliefs and attitudes towards implementation practices of a new curriculum. Using factor analysis, a total of 9 most dominant factors were extracted from the 109 indicators. The most dominant factors indicated by the teachers are: management support, teaching and learning competence, and supervisory and social relations. The most dominant factors indicated by the students are: subject preferences, textbook preferences, sense of achievement, relationship with school authorities, likability towards school environment, and teacher factors. Majority of the teachers responded that the most important indicator is establishing a mutually-respectful relationship in the school setting. The most important factor indicated by the students is having the sense of achievement, implying that students need to be recognized and appreciated for the tasks they do at school. The teacher factor on supervisory and social relations at school and the student factor on teacher relations showed to have a significant relationship. The findings of this study are congruent with the underpinnings of Gross' theory on curriculum implementation and Fullan's educational Change theory, emphasizing that management support, development of human resources, and collaboration as important factors in implementing change in the educational system. From these findings, the author drafted a curriculum implementation model which could be contextually applied in the four schools included in this research.

Keywords: Curriculum implementation, curriculum implementation model, beliefs and attitudes, challenges in implementation, factors in implementation

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Introduction

In the Philippines, one of the major thrusts of former President Benigno Aquino's government was the enhancement of the basic education program known as the Republic Act No. 10533 series 2012 which was signed into law on May 15, 2013. The law was enacted and promulgated because the Philippines is the last country in Asia and one of only three countries worldwide with a 10-year pre-university cycle. This recent educational reform efforts instituted by the Philippine government intends to improve the quality of the high school graduates. These new graduates are envisage to become more competitive in the global business arena and to bring more success that would contribute towards building the nation and be at par with the rest of the world. (Acosta, 2016). Globalization, technology explosion and information explosion were just few of many reasons for the restructuring (Calot, 2016). This would strengthen the education of the country which would expectedly result to production of better and competent graduates (Combalicer, 2016).

The problem is that despite efforts at implementation, it is still not clear how the learners, teachers and principals have perceived the new curriculum introduced in 2013. It also remains to be seen whether the school members are clear about the nature of the change, the reasons behind it and how it is supposed to be implemented. Above all, it is not yet known if the classroom practices that have been developed by educators really meet desired ends, and whether the schools receive the necessary support to implement the new curriculum.

The implementation of the new curriculum has been running for five years now. However, not all teachers, administrators and students could easily adapt to this sudden change. According to Calub (2014) different teachers with different types of learners have various observations and experiences towards the implementation of the framework. Inevitably, there are some problems met by the teachers and the whole constituents of a school in implementing the new curriculum frameworks, thus the need of this study.

These are the critical issues that will determine the success of curriculum implementation and that have prompted this study, which sought to examine beliefs, attitudes, challenges and the factors influencing implementation of a new curriculum in its early stages in the selected four schools in Lanao Del Norte.

This study involved four principals, 74 teachers and 212 Senior High School (SHS) students in the four schools in the Division of Lanao del Norte under the Department of Education (DepEd). Quantitative approach specifically descriptive-correlational design is utilized in this study. Data analysis was made through descriptive and inferential statistical methods. Factor loading analysis, specifically the principal component analysis was used to extract the factors from the responses. The researcher used a survey questionnaire designed to determine educators' and learners' opinions regarding implementation of the K-12 curriculum. The quantitative instrument consisted of items adapted from Bernhardt 's (1999) survey questionnaires. In addition, one-on-one interview and focus group discussion (FGD) was conducted with the principals.

Specifically, the study addressed the following problems: What are the beliefs, attitudes and challenges of the principals, teachers and Senior High School (SHS) students in the implementation of the new K-12 Curriculum in the four public schools under survey? In the context of the four school respondents, what are the dominant factors influencing the implementation of the new K-12 curriculum? Is there a significant relationship in the beliefs, attitudes and challenges of teachers and students towards the implementation of the new K-12 curriculum?

Conclusion

The following were the highlighted findings of the study:

Principals' belief and attitude towards the new curriculum

According to the four principals, the six highest rated educational practices or indicators are the following: 1) cultivating close relationship with teachers, other staff members, students and parents, 2) effective professional development on new curriculum; 3) challenging teachers and students continuously to fulfill curriculum goals; 4) holding regular and productive staff meeting; and 5) promoting collaboration among teachers so that they can develop new skills by sharing professional knowledge about the new curriculum; 6) maximizing the amount of school time used for learning.

The school principals strongly agree that the successful implementation of the K-12 program requires the cultivation of a productive and close relationship amongst teachers, staff members, parents and students. This view of the principals is consistent with the theory posited by Fullan in 1970. According to Ellsworth (2001), Fullan's model focused on the human participants taking part in the change process; and the relationship established by the human participants contribute much to the implementation of a new curriculum. This relationship cascades from the top management to the bottom, creating various educational concerns based on established working relationships in the school setting. The educational indicators that are rated by the school principals are educational practices that necessitate strong relationships and collaboration amongst teachers in order to increase professional knowledge and increase skills on curriculum development. Also, effective professional development on new curriculum is a necessary indicator for success in curriculum change implementation. According to Borich (2000) in his book entitled "*Effective Teaching Methods*", effectiveness in classroom teaching is significantly influenced by the in-depth knowledge of the teacher on the various components of the curriculum being implemented.

Moreover, the principals unanimously believed that both teachers and students must be challenged to continuously meet curriculum goals. Pintrich and Schunk (2002) discussed in their book entitled "Motivation in Education" the relevance of meeting curriculum goals by both teachers and students. The authors posited that students must be taught self-engagement and management of one's educational goals through leveling of expectations, goal-setting techniques, and formative evaluation of performance. Increasing intrinsic motivation towards meeting curricular standards is one of the priority learning competencies that teachers should teach the students. The school principals further indicated that it is of topmost importance to maximize the

learning time of students while inside the school; thus, also maximizing their learning experiences and engagement time with teachers. However, this indicator was clarified by Moeller (2005) when she discussed in her research that teachers must not focus only on covering the content of the curriculum but on the student's performance indicators which demonstrate qualitative learning and evidence-based competencies.

In a study on curriculum leadership (Parkay, et.al, 2014), the authors elaborately discussed the challenges faced by school administrators in implementing an interdisciplinary curriculum. The success of the implementation is largely hinged on the leadership of school principals in providing extensive information on the new curriculum and in training teacher competencies.

Challenges encountered by the school principals during the implementation of a new curriculum.

In a focus-group discussion (FGD) and interview conducted to the principals, the following are the curriculum Implementation concerns reported by the School Principals.

School Administration Concerns

The school administration of each of the four schools involved in this study expressed concerns related to the actual implementation of the K-12 curriculum. The common problem that the school principals expressed is the lack of training in making the implementation process and the lack of experience of school personnel in doing pilot implementation of a new curriculum such as the K-12 program. Another concern is the lack of collaboration amongst stakeholders. A forum involving all stakeholders at school and in the community together with the parents was difficult to do because of the lack of interest of some individuals to partake of this paradigm shift in the educational system. It is also very evident that there is a shortage of personnel during the implementation phase. The government must investigate the creation of new items for new teachers and administrators in order to address issues on non-availability of human resources who could ably assist the successful implementation of the new curriculum. Moreover, the school administrators are oftentimes overwhelmed by the many programs and activities that need to be implemented. With the limited personnel and delayed downloading of funds, it is difficult to implement school programs mandated by DepEd.

Concerns related to Teachers

There is a shortage in hiring teachers because of the national standards in hiring Teacher 1 positions. Some who applied are not registered qualified. During the first year of implementation of the senior high school program, there was a shortage of teachers so that the junior high school teachers also handle subjects in the senior high curriculum. The trainings provided are not sufficient for teachers in developing competencies especially in the TLE (Technology and Livelihood Education) curriculum. Also, the teachers complain about the use of a spiral curriculum in Science which to them seems to be ineffective. There are also curriculum materials such as in the subject of Mathematics, which are not appropriate for learners coming from the hinterlands

Concerns related to students

Learning goals of the students are not sufficiently met because of the lack of teaching materials. The textbooks provided for the subjects of Math, Science, TLE, Filipino, and Araling Panlipunan (Social Studies) are not sufficient to be used by all students. Students also are not exposed to science laboratories because the lack of equipment needed to do science experimentation. The library also lacks references and books where students could do their research in the absence of the internet. Because of the lack of learning materials, student's academic performance is adversely affected.

Teachers' beliefs and attitude towards the new curriculum

On analyzing the teachers' responses on beliefs, attitudes towards the implementation of the new curriculum, the following factors were found to be dominant.

Table 1 shows both the factor loadings and communalities of each variable or belief of the respondent-teachers. Using principal component analysis, the three factors created in this study, which are considered as the dominant factors influencing curriculum implementation are the following: Management support and reinforcement system; Teaching and learning competence; and Supervisory and social relations at school.

The results presented in Table 1 further indicated that there are three extracted factors that influenced the teacher-respondents' belief and attitude towards the new curriculum implementation. The first factor, School Management support and teacher Motivation, is composed of 7 items. All of the mentioned items share similarities in the aspect related to support of the management in the implementation of a new curriculum, which also includes the intrinsic motivation of the teachers to educate students accompanied by professional recognition and sense of personal achievement. The variable that has the strongest correlation (0.787) with the first factor is the variable which says that teachers feel intrinsically rewarded for a job well done in the context of the new curriculum. Ofoegbu in his study in 2004 articulated that teachers have both intrinsic and extrinsic needs. A teacher who is intrinsically motivated may be observed to undertake a task for its own sake, for the satisfaction it provides or for the feeling of accomplishment and self-actualization. A task of implementing a new curriculum is challenging for intrinsically motivated teachers, especially when this motivation is further reinforced by a positive reinforcement system applied by the school's management (Atkinson, 2000). In a study conducted in 2014 (Parkay, et.al), it was elaborated that the role of management or school administrations is very critical in implementing the curriculum especially during the planning stage, when level of agreement of all school constituents must be determined. The amount of reinforcement and motivation provided to the teachers predict the success of implementing curricular goals in the classroom.

The second factor, teaching and learning competence, is also composed of 7 items. All these items share similarities in terms of demonstrating professional skills enhancement for teachers and academic achievement or learning competence for students. The variable that strongly correlated with the second factor is item 17, which indicated that the teacher-respondents strongly agree that student achievement data are an important tool for improvement of student learning. According to Marks

(2000), understanding and assessing first students' needs and prior performances are necessary in making effective classroom strategies that lead to improvement of student learning. This therefore implies that profiling student needs based on socioeconomic status, dominant learning styles, personality types, academic achievement in each subject, and abilities proved to be effective in managing a better classroom and understanding student's concerns. Klem & Connel (2004) expounded that those teachers who connect and relate well with students produce more engaged students across all basic education levels. It is therefore of paramount importance that teachers develop themselves in both cognitive and affective aspects, in order to transfer these proficiencies to the students.

Table 1 Teacher respondents' beliefs and attitudes towards the new curriculum

Item No.	Educational Indicators or practices	Factor Loadings	Communalities
Factor 1: School management Support and Teacher Motivation			
S2	I feel that school organization is changing and enabling successful implementation of new curriculum.	.757	.720
S3	I feel that teaching new curriculum is fun at this school.	.728	.753
S4	I feel acknowledged for good work in the context of the new curriculum.	.738	.684
S5	I feel intrinsically rewarded for doing my job well in context of new curriculum.	.787	.779
S10	My principal supports me in my work with students under the new curriculum.	.608	.743
S11	My principal supports shared decision making.	.590	.676
S13	My principal is effective in helping us to realize the vision on which the new curriculum is predicated.	.512	.717
Factor 2 Teaching-learning competence			
S14	I realized that the new curriculum has clear learning objectives and that it emphasizes the acquisition of basic skills.	.684	.720
S15	I realized that effective professional development is helpful in the fulfilment of curriculum goals.	.719	.730
S16	I realized that student achievement can increase through active learning methods.	.767	.734
S17	I realized that student achievement data are an important tool for improvement of student learning.	.830	.749
S18	I realized that effective parent involvement and other stakeholders is needed for successful implementation of the new curriculum.	.794	.771
S19	I have the opportunity to develop my teaching skills individually and co-operating with other colleagues on the new curriculum.	.643	.747
S20	I have the opportunity to grow professionally under the new curriculum dispensation.	.652	.767
Factor 3 Supervisory and social relations at school			
S1	I feel like I belong at this school.	.513	.559
S6	I work with colleagues who treat me with respect.	.874	.834
S7	I work with colleagues who listen if I have ideas about doing things better in the context of new curriculum.	.758	.673
S8	My principal is an effective instructional leader.	.712	.788

S9	My principal facilitates communication effectively.	.667	.702
S12	My principal allows me to be an effective instructional leader.	.582	.728
Total Cumulative Variance Explained (%)			72.87
Kaiser-Meyer-Olkin Measure of Sampling Adequacy			.905
Bartlett's Test of Sphericity			
$\chi^2 = 1345.998,$			
$df = 190, p < .001$			

The third factor which influenced teacher's beliefs and attitude towards a creation of a new curriculum is supervisory and social relations at school. In this study, this factor is composed of six items. These items share similarities in terms of the fact that teachers believed that success in implementing a new curriculum is greatly dependent on the teacher's satisfying relationships with supervisor and colleagues at school. Atkinson (2000) emphasized the importance of establishing collegial relationships at school, which serves as a strong motivator for teachers to do better even with novel tasks. The variable with the highest correlation with the third factor is item number 6, which says that teachers find it very important to work with colleagues who treat them with respect.

This is indicative of the fact that respect and collegial relationships at school is highly expected by teachers so that without such indicator, implementation of a new curriculum is difficult. Barth (2006) discussed the importance of teacher collegiality at school. This collegiality in relating with others leads to a smooth interpersonal relationships with supervisors and colleagues. These smooth interpersonal encounters result to a more satisfying job experience and better teaching performance among teachers. Curriculum implementation hinges on collaboration of human resources; so that poor social relations definitely hamper the achievement of the school's curricular goals.

It is further noted that each indicator (latent variables) showed strong to very strong correlations with the three variables of measuring same construct or factor. The communality scores of each variable when squared actually show the variance explained by each item variable or indicator. From the values of the common communality, each indicator (latent variable) ascertained that majority of them have a value higher than 0.50 which represents satisfactory quality of the measurements of the extracted factors. In total, the three factors explained 73.7% of the total variance of the belief and attitude of the teachers towards the implementation of a new curriculum. This high percentage of variance explained implies that the indicated variables are indeed the dominant factors or components that influence the implementation of a new curriculum such as that of the K-12 curriculum of the Department of Education.

Students' belief and attitude towards the new curriculum

On analyzing the students' responses on beliefs, attitudes towards the implementation of the new curriculum, the following factors were found to be dominant.

Table 3 shows both the factor loadings and communalities of each variable or belief of the 212 student-respondents. Out of the original 75 items included in the survey

questionnaire responded by the students, only 36 are retained for interpretations because of high factor loadings and communality scores. The six factors created are the following: Subject matter preferences; Textbook preferences; Sense of Achievement at school; Relationship with school authorities; Likability of school environment; and Teacher Factors. These factors influenced the students' belief and attitude towards the new curriculum implementation.

The first factor, Subject matter preferences, is composed of 10 items. All the items share similarities in the aspect related to subject matter preferences of the students such as Oral Communication, reading and Writing, 21st Century Literature, General Mathematics, and the like. The indicator that has the strongest correlation with the first factor is item 52 –Media and Information Literacy. This subject is probably rated very high by the students because it is a newly offered subject and caters to the interests of the 21st century learner profile who are technology savvy and modern (Walters, 2008).

Table 2. Student-respondents' beliefs and attitudes towards a new curriculum

Item No.	Educational Indicators/variables	Factor Loading	Comm unalitie
	Factor 1: Subject preferences		
	I think the important subjects are:		
S52	Oral Communication.	.696	.544
S53	Reading and writing	.727	.606
S54	Komunikasyon at Pananaliksik saWika at Kulturang Pilipino	.701	.558
S55	21 st century Literature	.704	.569
S56	Contemporary Philippine Arts from the Region	.574	.469
S57	Media and Information literacy	.732	.665
S58	General Math/Statistics and Probability	.611	.524
S59	Earth and Life Science/Physical Science	.602	.571
S60	Introduction to Philosophy of the human person	.672	.561
S61	Physical Education and Health	.606	.551
	Factor 2: Textbook preferences		
	My preferred Textbooks are:		
S62	Oral Communication Textbooks	.479	.628
S63	Reading and Writing Textbooks	.506	.609
S64	Komunikasyon at Pananaliksik saWika at Kulturang Pilipino Textbooks	.734	.662
S65	21 st Literature Textbooks	.773	.652
S66	Contemporary Philippine Arts Textbooks	.650	.610
S67	Media and Information Textbooks	.793	.663
S68	General Mathematics Textbooks	.562	.478
S69	Earth & Life/Physical Science Textbooks	.776	.675
S70	PE and Health Textbooks	.576	.577
	Factor 3: Sense of Achievement at school		
S2	I feel like I belong at this school.	.543	.429
S19	I like to learn	.646	.460
S20	Doing well in school makes me feel good about myself	.672	.529
S37	The new curriculum will contribute to my education in reference to my ability to write.	.544	.558

S38	The new curriculum will contribute to my education in reference to my ability to read.	.508	.520
Factor 4: Relationship with school authorities			
S8	School administrators treat me with respect.	.681	.537
S9	I am treated with respect by the office staff.	.725	.555
S22	Students at this school has the opportunities to learn about each other	.654	.636
S25	Students at this school respect other students who are different than they are.	.638	.526
Factor 5: Likability of school environment			
S1	I feel safe at this school.	.595	.451
S3	I feel challenged at this school.	.459	.473
S12	The work at this school is challenging.	.577	.547
S17	I like this school.	.643	.482
S18	I think this is a good school.	.705	.668
Factor 6: Teacher factors			
My teachers			
S31	Know me well	.495	.431
S32	Listen to my ideas	.638	.470
S33	Care about me.	.665	.599
Total Cumulative Variance Explained (%)			55.17
Bartlett's Test of Sphericity $\chi^2 = 3632.511$, $df = 190$, $p < .001$			

There are nine (9) items or indicators included in factor 2 (Textbook preferences), These items are grouped together based on their similarities in loadings as item listings of textbook preferences such as Oral Communication books, Media and Information Literacy (MIL) books, Gen Math books, etc. The item with the highest correlation with factor 2 is item number (Media and Information Literacy textbooks) – which is consistent with the previous result indicating that MIL is the highest rated subject in factor 1.

There are five (5) items or indicators included in factor 3 (Sense of achievement at school), These items are grouped together based on their high correlations and similarities in terms of feeling a sense of having achieved something at school, a feeling of self-efficacy and acceptance. The variable with highest correlation with factor 3 is item 20 which indicates that doing well at school makes the students feel good about themselves. According to Graham and Schwarts (1991), in his study on increasing self-efficacies of learning disabled, enhancement of sense of achievement must be confirmed and strengthened by the teachers and all school constituents. Good feeling of self-efficacy results to meeting curricular standards of the school.

There are four (4) items or indicators included in factor 4 (relationship with authorities). These items are grouped together based on their high correlations and similarities in terms of the student's relationship with authorities at school, like the way they are treated by the administrators and the staff. The variable with highest correlation to factor 4 is item 9 - "I am treated with respect by the office staff".

There are five (5) items or indicators included in factor 5 (Likability of school environment). These items are grouped together based on their high correlations and similarities in terms of feeling secured at school and liking the general school environment. The variable with highest correlation with factor 4 is item 18 which says that “I think this school is good”.

There are three items included in factor 6 (Teacher Factors). These items are grouped together based on their high correlations and similarities in terms of their relationship with their teachers and on how they perceive their teacher’s ability to care for them. The variable with highest correlation with factor is item 33 which says that “My teachers care about me”.

It is further noted that each indicator showed strong to very strong correlations with the six dominant factors influencing curriculum implementation. In total, the six factors explained 55.17% of the total variance of the belief and attitude of the students towards the implementation of a new curriculum. This high percentage of variance explained implies that the educational indicators are indeed the factors that influence the implementation of a new curriculum as responded by the senior high school students of the four involved schools.

Relationship between the beliefs and attitudes of teachers and students

Table 3. Relationship between the Beliefs and Attitudes of Teachers and Students

Attitudes and Beliefs		Correlation Coefficient (<i>rho</i>)	Description (<i>Effect Size</i>)	p-value	Remarks
Teacher	Students				
Factor 1: Management Support and Teacher Motivation	Subject preferences	-.069	<i>Weak relationship</i>	.561	<i>Not Significant</i>
	Textbook preferences	.003	<i>No relationship</i>	.983	<i>Not Significant</i>
	Sense of achievement	.036	<i>No relationship</i>	.764	<i>Not Significant</i>
	Respect from school authorities	.203	<i>No relationship</i>	.083	<i>Not Significant</i>
	Likability of school environment	.089	<i>No relationship</i>	.452	<i>Not Significant</i>
	Teacher factors	.042	<i>No relationship</i>	.724	<i>Not Significant</i>
Factor 2: Teaching and Learning Competence	Subject preferences	-.067	<i>No relationship</i>	.568	<i>Not Significant</i>
	Textbook preferences	-.031	<i>No relationship</i>	.792	<i>Not Significant</i>
	Sense of achievement	.053	<i>No relationship</i>	.654	<i>Not Significant</i>
	Respect from school authorities	.158	<i>Weak relationship</i>	.202	<i>Not Significant</i>

	Likability of school environment	.110	<i>Weak relationship</i>	.349	<i>Not Significant</i>
	Teacher factors	.075	<i>No relationship</i>	.525	<i>Not Significant</i>
Factor 3: Supervisory and Social Relations	Subject preferences	.034	<i>No relationship</i>	.773	<i>Not Significant</i>
	Textbook preferences	.045	<i>No relationship</i>	.702	<i>Not Significant</i>
	Sense of achievement	.092	<i>No relationship</i>	.435	<i>Not Significant</i>
	Respect from school authorities	.270*	<i>Weak relationship</i>	.020	<i>Not Significant</i>
	Likability of school environment	.148	<i>Weak relationship</i>	.210	<i>Not Significant</i>
	Teacher factors	.304*	<i>Moderately strong relationship</i>	.008	Significant

*Significant at 0.05 level

Using the Spearman-Rho correlation coefficients, table 5 shows the level of relationship between the teacher's and student's beliefs and attitudes towards the implementation of a new curriculum at school. It can be inferred from the table that most of factors or the perceptions and beliefs of both teachers (3 factors) and students (six factors) do not have a significant relationship to each other. A moderately strong relationship is however observed between Factor 3 for teachers (Supervisory and social relations) and factor 6 responded by students (Teacher factors). Both factors share commonalities in terms of their interpersonal- implying that both students and teachers unanimously agree to the fact that school constituents need collegial, healthy, and satisfying relationships in the school setting. Several authors and researchers (Shapiro 2000; Borich, 2000; Klem and Connel, 2004; and Wolf, 2017) agree to this finding indicating that both teachers and students perform better when the social atmosphere at school is positive and rewarding. Erik Erikson emphasized on this factor when he posited in his theory that man is basically social in nature; so that self-integrity could only be achieved through an enriching social interaction.

Based on the findings of this study, the researcher concludes that majority of the school principals consider professional development and collaboration with teachers and school staff as very important factors in implementing a successful curriculum. Majority of the teachers agree that the factor on developing teaching and learning competencies was considered as very important in implementing a new curriculum. Majority of the teachers also indicated that the educational indicator under the factor - supervisory and social relations- which expresses that teachers need to feel belonged or accepted at school was a very important indicator of a successful implementation of a new curriculum. The student-respondents indicated six relevant factors that influence the implementation of a new curriculum: subject matter preferences, textbook preference, sense of achievement at school, relationship with authorities at school, likability towards school environment, and teacher factors. Of the six factors indicated, sense of achievement was consistently considered as the most important

factor, specifically the variable which expressed that students like to really learn at school and doing well at school makes them feel good about themselves. The teacher factor on supervisory and social relations at school and the student factor on teacher relations showed to have a significant relationship.

Further, this research study concludes that Gross' theory on curriculum implementation is in congruent with the findings of this study. Gross emphasizes on management support and professional development - factors which the respondents indicated as very relevant in the successful implementation of a new curriculum. Also, Fullan's (1990) Educational Change Theory which focuses on human resources and collaboration as important in implementing change in the educational system coincides with the responses of the respondents who indicated that collaboration and good relationships at school contributes much to the success of a new curriculum such as that of the K-12 curriculum of DepEd.

Part of the output of this study is a curriculum implementation model designed for the four schools under study.

Curriculum implementation model designed based on the findings of the study

This curriculum implementation model is designed based on the findings of this research study that could be contextually applied to the four schools which responded to this study. There are four phases to curriculum development: 1) Planning; 2) Acquisition of Needs; 3) Implementation; and 4) evaluation. Implementing a curriculum requires the following action: management initiative, collaboration, implementation support (logistics, financial needs, equipment materials, infrastructure), and training of human resources (Marsh, 2009; Tyler, 1990). Curriculum objectives involve two aspects: behaviors or competencies to be developed and area of content to be applied.

Based on the findings of this study, the following salient aspects are gathered as bases in the creation of the curriculum implementation model (Fig. 1).

- School principals need to continuously challenge teachers and students to fulfill curriculum goals, to cultivate a proactive relationship with teachers and stakeholders and to monitor teachers in order to maximize time used for learning.
- Teachers need a social environment at school which is defined by the virtues of respect and acceptance, they need to develop their competencies and skills and to understand student data in order to better understand learner's needs
- Teachers expect school administrators to provide support to them in implementing the curriculum, need to develop their competencies and skills
- Teachers have the intrinsic motivation to perform; but they also need extrinsic support.
- Students need to have a sense of achievement and to be recognized for their efforts.
- Students desire to learn not only intellectually but affectively.
- Students need teachers who are caring and understanding.
- Students expect school authorities to treat them with kindness.

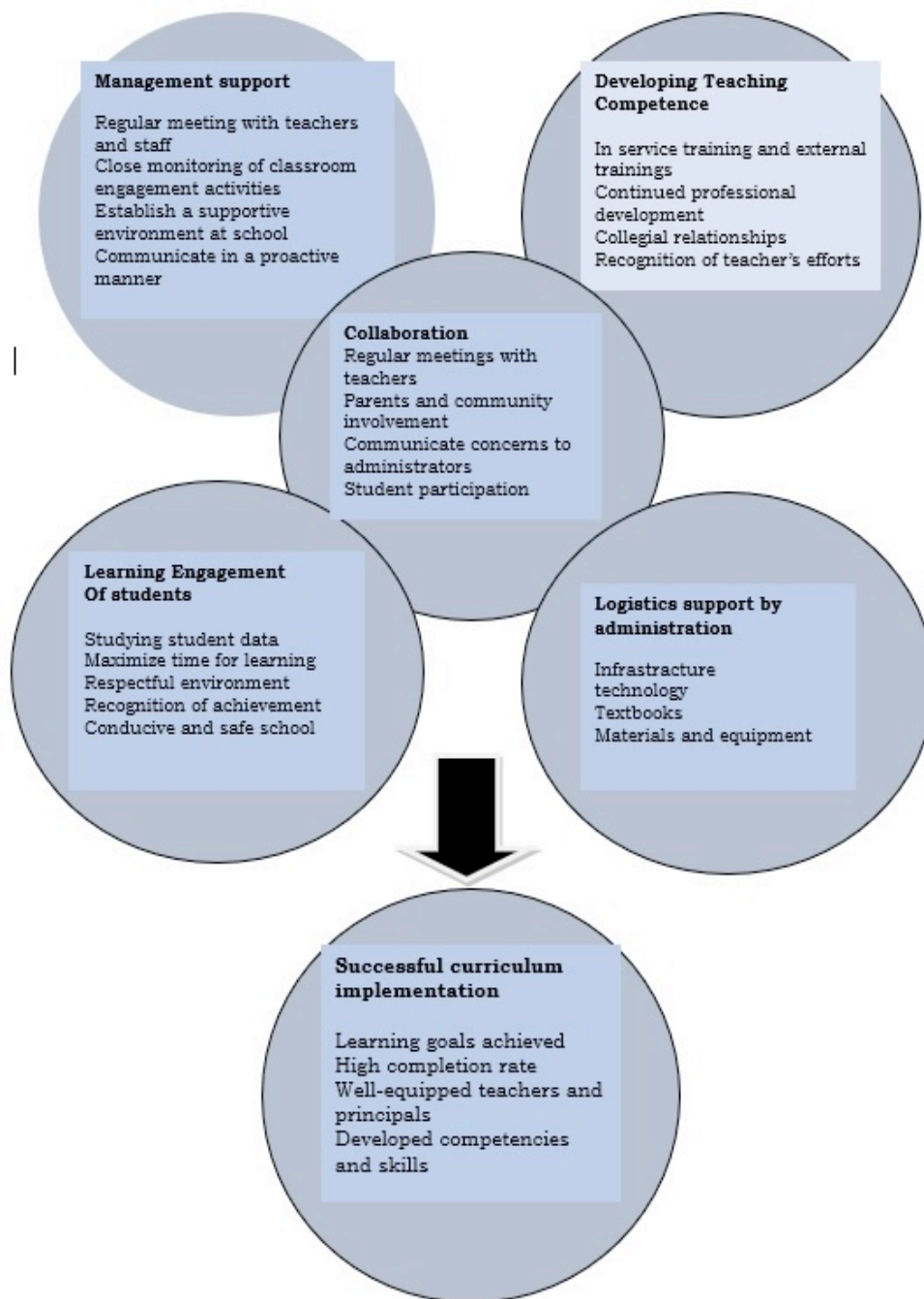


Figure 1. PYE's Curriculum Implementation Model

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*Essential Knowledge, Skills and Attitudes towards
Sustainable Rural Tourism after a Decade of the Tsunami in Aceh*

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

The study investigated the rural tourism in Aceh after a decade of the tsunami. Reports revealed that tourism is the fastest growing industry in the world that benefits a country's economy and local communities. Thus, the main concern should be the human capital and human resources to ensure successfulness and the sustainability of the rural tourism activities. The paper aims to highlight the human capital issues which focus on the human talent while the human resources components are skills, knowledge and attitudes which are considered crucial for sustainable tourism in Aceh. Seven key informants were identified for the study. Additionally, a total of 103 respondents took part in the interviews and 450 participated in the survey. However, this paper focuses on the results from the interviews amongst the seven key informants and the participants during the interviews of the phenomenon. The results showed that there was lack of understanding of rural tourism concept and its meaning and also the low level of knowledge and skills in managing rural tourism. In addition, lack of local leaders and support for rural tourism add to the ineffective of its development. The study implies that human capital for sustainable rural tourism is essential. Thus, Aceh requires broadening the context of rural tourism from its concept to its sustainable management. Multiple means and ways need to be initiated to secure greater measure of sustainable development in rural tourism for the benefits of its community and its country.

Keywords: rural tourism, sustainable, knowledge, skills, attitudes

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Introduction

Research on tourism and its influence as well as its impact have been considerably conducted by many scholars around the globe due to the many benefits it contributes to national welfare (Dimitrovski et al., 2016; Sharperly, 2014). Furthermore, tourism contributes to the social economic benefits for its stakeholders. As mentioned by Richardson and Fluker (2008, p.4) that “tourism is modern activities with significant economic consequences for governments, local communities and businesses, it also has important impacts on social, cultural and environments”. Accordingly, rural tourism as one type of tourism, also attracts researcher attention because it provides a new alternative of income generating, solve unemployment problems and at the same time preserve the cultural and social heritage and environment in rural areas (Shahab and Hashemi, 2016).

According to the World Tourist and Travel Council, by the end of 2015, travel and tourism will contribute US\$7.8 trillion or about 10% of total GDP. This sector will account for 284 million jobs, 9.5% of total employment (WTTC, 2015). In term of development, tourism has claimed consistent and reliable increase since 6 decades ago until now showing the strength and resilience of this industry and will continue to grow sharply within the next 2 decades (UNWTO, 2017). International tourist arrivals have increased from 25 million globally in 1950 to 1,235 million in 2016.

Tourism becomes more and more attractive for any nation that seek to improve their economic sectors through various branches of tourism activities and services that lead to economics benefit, as mentioned by Snieška, Barkauskienė& Barkauskas, (2014). Furthermore, Cooper (2012) mentions that tourism is the fastest growing industry in the world that benefits country’s economy and local communities. Tourism can be a significant source of creating new work places in rural communities. Moreover, it also helps to maintain and develop local culture in rural areas. Therefore, rural tourism not only offers business opportunities to local residents, but also encourages rural areas regeneration and economic development, and also increases quality of life for visitors and rural communities. Considering the many benefit of rural tourism, it is essential to explore how to make the most of this business as well as to assure its sustainability in the future.

In order to run a successful rural tourism activity, the main concern should be put into human resources promptness because tourism is a people center activities that provide services in many divisions and subdivisions such as accommodation, transportation, attractions as well as products selling souvenirs, culinary, etc. Tourism is a labour intensive sector that creates many jobs at all levels. According to ILO and UNWTO, the global tourism sector accounted for more than 235 million jobs in 2010 representing 8% of global direct and indirect employment, or one in every 12 jobs. It is forecasted that by 2019, the global sector will grow to 296 million jobs. In addition, tourism is a complex sector requiring many players to be involved in delivering the wide range of facilities and services that combine to provide the overall visitor experience. UNWTO (2017) suggested that typically the strategic plan or master plan of tourism would cover: Tourism resources which have the potential to be converted into viable and attractive tourism products; Tourist facilities and services, and opportunities for investment; Socio cultural, environmental and economic

impacts; Human Resources needs; and Community involvement and initiatives. Those areas are very much related to human capital and sustainable rural tourism.

Therefore, it is crucial to examine the human capital elements in rural tourism and do research analysis to add onto the knowledge base human capital element especially refer to Romei and Tortora (2014). Although, many studies have been conducted on human capital that focus on improving human resource as the important assets for an organization, however, there are rarely research related to the human capital in the scope of rural tourism community.

Hence, the aim of the study is to investigate the essential of knowledge skills and attitudes towards the development of rural tourism in Aceh after a decade of the tsunami. The findings demonstrated that the people in Aceh lack the knowledge and skills. In addition, the industry of rural tourism is not getting the support from the leaders and local community of Thus, Aceh faced tremendous pitfall in rural tourism. Obviously, the mobility human capital components are seen not effective. The leadership and the problems of violation of human rights is seen. The results of the study added knowledge to the notion of rural tourism leadership and most importantly the insights gained serve as practical implication for the development and sustainability of rural tourism in the context of Aceh.

Rural Tourism in Aceh

Historically, Aceh had been in conflict for the past years with the Indonesia's military. The 30-year separatist conflict may have adversely affected the capacity of local government. The conflict had thwarted economic and social progress and stymied the development and delivery of government services (Masyrafah & McKeon, 2008). Aceh's great challenge is to overcome the enormous physical and psychic problems created by the tsunami in ways that serve its entire people in the long run. To succeed, Aceh indeed urgently required leaders and the cooperation of its community who emulate consistently the effort to sustain and even to re develop rural tourism as it has been reported tourism industry contributes significantly to the economy that elevates the whole nation to a more just path.

In Indonesia tourism sector is the fourth highest devisacontributor after oil and gas that provides huge support for economic's growth. Tourism sector also provide lots of new profession and job employment for community as well as open large number of industry such as hotel and homestay, travel and tour operator, restaurant craft industry, etc. These industries employ many workers and therefore reduce the number of unemployment which is a big problem in Indonesia. Tourism sector employ 10,18millions workers or it is about 8,89 % of national workers in Indonesia (McCartney, 2013). Thus, Indonesia Ministry of Cultural and Tourism encourages all kind of tourism activities that will help every potential province to jointly enjoy this new pervasive trend.

Aceh is one province in Indonesia that is located in the northwest of Sumatra island with the area of approximately 57,365.7 km square and the capital of Aceh province is Banda Aceh. It consists of 119 islands, 73 major rivers and 2 lakes. Aceh is surrounded by Malacca Strait in the north, Indian Ocean in the south and the west. In 2013, Aceh Province is divided into 18 districts and 5 cities, consisting of 289 sub

districts, 779 Mukims and 6,474 villages. Location of natural reservation/natural tourist attraction in Aceh are located in 12 places namely: Taman Buru LinggaIsaq Park, Serbajadi Natural reservation, Sabang/Weh Island Marine Park, Jantho Natural reservation, GunungLeuser National Park, Banyak Islands, RawaSingkil Wild Life, Aceh Besar Tourism Park, PocutMeurahIntan Grand Forest, Subulussalam Park, Simeulue Grand Forest and Lampuuk and Lhoknga Beaches (Aceh in Figures, 2016).

The fact that Aceh had been in internal conflict with Indonesian government for 31 years made this province isolated not only for international visitor but also national and local traveler who were feared to travel in Aceh. However, when Tsunami hit Aceh on December 26, 2004, then only Aceh start to draw attention from national and international communities and agencies who provided aids and assistances for the disaster victims. The Tsunami also brought a light on the peaceful agreement between The Acehnese Rebel Movement (GAM) who had been fighting for independence against the Indonesia authorities for years. The signing of the peace agreement or memorandum of understanding (MOU) in Helsinki, Sweden a year after the Tsunami on October 15, 2005 resulted in that Aceh remain as a province of Indonesia. Since then, the peace process has been quite smooth, without major incidents, The AAM (Aceh Monitoring Mission) funded by the European Union oversaw the process.

Even though, some of the most beautiful Aceh tourism and historical sites and beaches have been damaged by the massive earthquake and Tsunami disaster, however there are some other new tourism objects flourish that attract more tourists to come which are the Tsunami heritages. Furthermore, Aceh also is rich of events, attraction and unique cultures that will fascinate people. Some well known tourist spots such as The Baiturrahman Great Mosque, The Museum Tsunami Aceh, KapalApung heritage, Aceh State Museum, The Grave of Sultan Iskandar Muda, UjongBatee and Lampuuk beaches, Hot water pool, GunungLeuser National Park and Sabang island, most of the them are located in the village areas.

In Aceh context, tourism village is a village proposed to the government namely Cultural and Tourism Board to be appointed as tourism village. This tourism village has structured organization called tourism alert group which are consisted of one leader, a secretary and a treasurer and some members. Then this group will propose to Cultural and Tourism Board of Aceh to be legally appointed as formal tourism village. Once it has legally announced by the government as tourism village then only a village can name and publish their village as tourism village to run the tourism activities can get some support funds and to get some fund from government. Some activities that community can provide for tourist are homestay, art performance, natural adventure, agrotourism, etc.

Literature Review

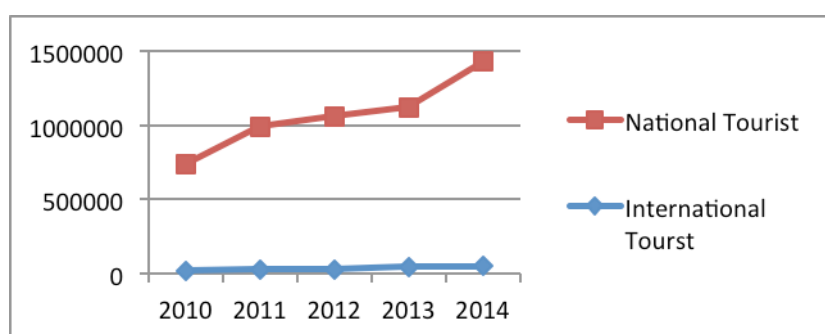
Rural Tourism in Aceh

Most major tourist destinations in Indonesia such as Bali, Yogyakarta, Batam, Bandung and Jakarta, has rather relaxed modern cosmopolitan social outlook, which is quite conducive for tourism industry. However, certain regional provinces such as Aceh might not have that kind of luxury, and tends to be conservative. Furthermore,

Aceh is well known for its Islamic society with Syariah law applicable to its government constitution as part of its exclusive autonomy given by Indonesia government. The province has a relatively strict Islamic-based law, enforced by Islamic religious police, called Wilayatul Hisbah. Thus, some certain normally private matters, such as beach clothing, party and the consumption of alcohol, to a display of affections between couple, are discouraged, and might lead to a legal problem.

In addition, for the past several years, most Acehnese who live in rural area are the most reluctant to receive tourists especially tourists from non Muslim countries. They believe that tourist will bring bad influence to their culture and standard of living as well as people's lifestyle. Therefore, they tend to reject tourist or tourism activities related to non Syariah activities. This view has gradually changed especially when the Tsunami hit Aceh on December 26, 2004. At this time, people around the world come to Aceh to deliver aids and assistance for the rehabilitation and reconstruction of the area and then followed by the signing of MOU Helsinki in 2005.

The number of tourists who come to Indonesia increase sharply each year for both national and international tourists. However, the number of tourist who come to Aceh increase sharply only for national tourist and for international tourist the increase is just slowly. Figure 1.1 shows the number of tourist growth in Aceh.



Theoretical Framework

Based on the literature review, a theoretical framework is produced to facilitate in the data collection. The framework is made up of three major components: 1) Rural tourism; 2) human capital; 3) rural tourism management. The human capital draws on the theory (Becker, 1993) and Brewer and Hunter (2006). The human capital theory was further supported by Lepak and Snell (1999) who believed "two unique dimensions of human capital are important to examine in term of managing rural tourism which are values and uniqueness. To sustain rural tourism, it is believed leaders and local social support is crucial in the management paradigm. Finally, assuming that that the human capital components are significant, this research investigates how sustainable rural tourism can be developed and also what are the impacts toward the economy impacts for a country can filled the gap and provide more trendy information in the rural tourism context.

Methodology

The study employed a mixed-method design in soliciting qualitative and quantitative data. It was envisaged that the mixed-method design would provide richer data and in-depth views of the participants' experiences. This approach consists of procedure in collecting, analyzing and integrating both quantitative and qualitative data during certain stages of the research process with a single study (Creswell, 2007). The first phase consisted of the collection and analysis of qualitative data. The qualitative results were obtained from interviews with seven key informants. All the respondents were asked the same set of semi-structured questions. Each interview lasted about one hour to one and a half hours. This paper highlights the experience of seven key informants being identified and the participants being interviewed for the study. These seven key informants consisted of five males and two females who are the officers from the Government body, local practitioners, community leaders and the community.

The key informants were identified as individuals directly responsible for developing or implementing policies or practices that affected rural tourism development. They included representatives from the Governor's Office and institutions from different agencies. The seven key informants shared an account of their experience and observations towards rural tourism after the tsunami. Most importantly, many issues were revealed upon their reflection after a decade of the disaster. The issue of leaders' local support towards rural tourism were revealed. The lack of understanding of its concept and meaning of rural tourism is far below common understanding as perceived by the communities. Thus, it was decided to investigate into understanding the essential components in human capital for ensuring the sustainable rural tourism. The results provided insights of rural tourism and its practices and management lies in the knowledge skills and attitudes of the many stakeholders.

All the seven key informants were interviewed at the first phase. The face-to-face interviews were carried out with the all the key informants officer from the governor's office, managers and staff at the Institute of Human Resource Development of Aceh, staff at the higher institution, a school principal, a community leader and a staff at the NGO. An additional visit was made to Aceh to confirm some of the initial findings. All the seven key informants went through the second interviews. A total of 14 interviews took place during the study. The profiles of the seven key informants are shown in Table 1.

Table 1
The Profiles of the key Informants

No	Name	Age	Work Place	Educational Background
1.	Ramli	45	Governor's Office	Master
2.	Rosli	61	Institute of HRD Aceh	PhD
3.	Yusuf	62	Institute of HRD Aceh	PhD
4.	Suhra	39	Higher Institution	PhD
5.	Rozaih	51	School Principal	Degree
6.	Pak Kecil	54	Community Leader	High School
7.	Susan	44	NGO Staff	Degree

The key informants were asked to recall many episodes of their experience towards rural tourism during and after the disaster. Eventually, the key informants were asked about their experience and observation towards the rural tourism development during and after the tsunami. In addition, the actual of the key informants' names were not used in this report.

In this context of the other participants in the interviews conducted, the data obtained from all the participants were collectively analysed to uncover common themes and sub-themes on the learning experience of rural tourism of the stakeholders in Aceh after the tsunami. The data analysis involved three phases. The first phase was the analysis of qualitative data in terms of interviews, observational notes and documents amongst the participants. All taped interviews were transcribed. The qualitative data were content analysed case by case, using inductive and deductive analysis. Data reduction was then conducted to identify common themes and sub-themes in all thirteen cases. It is the aim of this paper to highlight only the issues focused concept and its meaning of rural tourism and also its essential components in human capital to sustain rural tourism development. Additional research needs to be carried out to investigate the negative and positive impacts of rural tourism towards the development of one's economy in the country.

Findings

In line with the experience after the tsunami, a series of observations and reflective activities took place among the key informants about the issues of rural tourism. Many reviews had been done into re-developing the area of rural tourism especially rural tourism was found one of the effective ways to put people in Aceh back to their livelihood. People from the different level had planned various initiatives to give life again to rural tourism as a mean to boost economy to enhance the life of the community in Aceh. It was found that the lack of knowledge and skills to manage the rural tourism remain the critical issue as majority of the key informants uttered, "It is a country rich in culture, heritage and history". All they did suggest at this time is to rethinking of the culture of rural tourism in Aceh. The three themes demonstrate the problems and challenges of rural tourism in Aceh:

- Lack of understanding of rural tourism concept and its meaning
- Low level of knowledge and skills of rural tourism
- Positive attitudes towards rural tourism

Lack of understanding of rural tourism concept and its meaning

In the interviews, however, with government officials or local people, there were huge confusions about the concept and its meaning of rural tourism. They key informants were even more puzzled after the decade of the tsunami, the development of rural tourism had not been made clear to its community. The key informants reveal, if the below sample is indicative of the general sentiments of tsunami survivors regarding the role of the leaders, then the government needs to re identify its accurate leaders and leadership especially in the reconstruction phase of the tsunami disaster. In nearly every village we visited survivors complained, often bitterly. Dr Yusuf recalled his learning experience; he convinced us that if only the leaders would have played more significant roles, many lives could have been saved. He said the more he thinks about

the issues, the more he identified the importance of what he ‘reflected’ and it would eventually lead him to compose himself and begin to act on it:

I look at rural tourism from two side,, first is the potential that community have and how strong this potential can attract visitors to come to the village. Is it cultural tradition, like art performing or is it the fascinated natural beauty of the village.

RoZIAH, the school principal herself was saddened by some of the confusions reactions of the people by the authority and she remembered, even things were overwhelmed and chaotic for the meanings and management of rural development in tourism as she uttered:

People want to visit village to find something that has been diminished from city. Village is identic with traditional culture. The best activities for rural tourism is keeping the originality of what the community have been doing for their life such as traditional farming, teaching kids to read the holy Quran so that visitors can also do it together with them.

Low level of knowledge and skills in rural tourism

It was overwhelming to find out that within the community, they argued that effective knowledge for rural tourism is essential. For instance, they emphasized that certain levels are not only important during the disaster; skills and methods of development the places and people should be included in the town planning. Ramli was disappointed as he witnessed some irresponsible people in the industry did not pay attention towards the development of rural after the tsunami.

We will provide the service and product as naturally as we can so that tourist can enjoy staying in our village. However, we have to develop new interesting way to attract more tourist by making some innovation and support local community with capacity building in rural tourism because if community are ready to participate and involve in tourism, they have to be trained and educated well.

Past experience had alerted the community about being equipped with competent, skills and knowledge in order to sustain especially in tourism as Aceh is full of heritage and culture and the experiences of rehabilitation after the disaster....effective management of rural tourism is considered the best way to improve people economy. Pak Kecil who had the experience being the village head shared his observations:

Capacity building for local community especially who runs the rural tourism business is very important such as communication skills and people understanding in how to manage homestay.

Local community will need assistance in developing their knowledge and skill related to tourism management and entrepreneurship as well as training of trainer program so that the knowledge and skills can be spread fastly.

Positive attitudes toward rural tourism

It is not easy to give a comprehensive evaluation how human capital can be sustained to improve rural tourism after the disaster. However, the investigations towards some of the key informants and participants revealed that the people in Aceh has positive attitudes towards the re-development of tourism and look forward the process of getting the industry to a higher level. Dr Rosli who was the former lecturer at the higher institution had strongly foresighted that the roles and the attitudes of the people at all levels are essential under the circumstances of a disaster.

Yes, the strength of rural tourism is the uniqueness of traditional and culture arts, I think we are proud to show people.... More, tourism is the fastest way to get the local people back to its economy.

Acehnese are real homer and respect the guests. We are also not shy people, we want to share our rich culture with people and also our information about the disaster so that people can learn and be prepared for any disaster...

The positive attitude despite the lack of knowledge and skills are one of the most important factors that this industry of rural tourism in Aceh should be given more attention. The lack of knowledge and skills in rural tourism management was perhaps the greatest challenge. Although the local people had experienced some degree of tourism, they had never faced a more comprehensive system in rural tourism in the history. All levels of people faced a multitude of challenges on utilizing, mobilizing and coordinating resources in the industry of tourism. According to the analysis, the responses to Aceh were laudable. It was in the unplanned situations, individuals in the community were encouraged to assist the industry of rural tourism.

Practical Implications for knowledge and skills management for rural tourism

The findings showed that incompetence and ineffective of understanding its concept and meaning of rural tourism is one of the major limitations towards the development and sustainability for rural tourism in Aceh

The study also highlights the challenges of low level of knowledge and skills among the various stakeholders of tourism. This inadequacy affect not only its sustainability but also hider many initiatives to be developed to secure more effective rural tourism at a better pace to elevate the standard of living of its community. The results or outcomes of the essential of knowledge, skills and attitude will be an added knowledge not only to the notion of human capital but specifically towards the development of rural tourism in its context. However, its society should become places where reflective thought about the effective and ineffective use promotional programs. That requires the broadening the context of leadership to include transformative ends and means

While, it revealed from the study that lack of the components of human capital towards rural tourism, however, the people positive attitudes for its tourism support the whole industry at the area of Aceh. People's attitudes as personality, character and behavior that are shown from people daily activity in the aspects of wanting to

share and promote their culture and livelihood to outside people. Coupled with the right attitudes, education and training can be developed and shared among communities. For example, people who already learn about tourists and tourism activities advantages will have more supportive attitude toward tourism activities in rural areas, therefore, they will accommodate tourism activities most important factor in tourism activities are the feel of welcoming and comfortable. Especially local community attitude that is displayed with the way people communicate and interact each other that will really effect tourists intention and motivation to visit or revisit the places.

The above findings and discussion have made it apparent that one of the aims is to change the culture of appreciating the concept and meaning of rural tourism. It was revealed by the study, the development after the tsunami had experienced the failure of re-inventing into rural tourism thus far. In normal circumstances, most of the people reject the idea that rural tourism can secure a better livelihood and also the better future of its community, things should be governed by a strong authoritarian leadership in the context. This implies that effective management of its human capital has greater impacts on increasing the standard of rural tourism. The research findings clearly indicate that a rethinking to a new rural tourism culture is relevant for the redevelopment of Aceh rural tourism after the tsunami.

Conclusion

The study sought to explore the essential of knowledge, skills and attitudes among the people towards rural tourism after a decade of the tsunami in Aceh. The study revealed that confusions of the concepts and meaning of rural tourism is still found within the community. The urgent need of developing the human capital through education and training is required as to give light to the industry. It can be concluded that although there is evident that there were limitations in the knowledge and skills among all levels of the people in Aceh at this state, effective leaders and leadership is inevitable. Therefore, it is understood, what possible should had been done remains to be done in terms of the reconstruction and rehabilitation, the roles of leaders in this industry had to be revitalized. Perhaps, a strong national leadership has to be rejuvenated within the culture for the development of its benefits for its people and its country. Therefore, the development of human capital for effective management of rural industry for a more equitable Aceh is indeed apt and timely. The findings add to the growing body of research on rural tourism specifically around the theme of rural tourism after a disaster. Future research is needed to investigate the roles and functions of each component of human capital in the essence of rural tourism.

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Thai University Students' Perceptions and Practices of Smartphone Use for English Language Learning

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

Mobile learning is now a growing trend in learning languages. Mobile devices like smartphones are commonly used by university students in their daily lives and are also commonly allowed in classrooms. There have been an increasing number of language learning applications. Previous studies have suggested that those applications on smartphones can help develop students' language skills. Conducted with English major students at a private university in Thailand, the present study aims at investigating how the students perceive the benefits of smartphones for learning English and how they use their smartphones to improve their English skills. The students were asked to complete the online survey, with Likert-scale items and open-ended questions. The data collected from 122 respondents were analyzed using basic descriptive statistics. The results reveal the students' positive perceptions of smartphone use for English language learning (average score: 4.05/5). They agree that smartphones can help them improve their English skills – especially vocabulary, reading, and listening respectively. The results also show that most students use their smartphones to improve their English skills – especially vocabulary, listening, and reading respectively. The students' responses on open-ended questions allow teachers and researchers to learn more about their perceptions and practices. The implications of the study are also discussed.

Keywords: English language learning, perceptions, smartphone use

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Introduction

Mobile technology has become an essential part of our daily lives. Smartphones and other related mobile devices are widely used for social interactions. These devices are also used for other purposes: lifestyle, entertainment, health, business, education, etc. Smartphones are commonly used by teachers and students for academic purposes. Teachers use smartphones to get access to academic information, classroom management, etc. Students use their smartphones as their learning tools – to access course materials, to record class notes, to access library references, etc. (Johnson and Natarajan, 2017)

Smartphones are certainly one of useful tools for language learners as they can use their smartphones to get access to language learning practice and to gain some help on the language use. There are also a large variety of language learning applications for them to download. That allows people of all ages to learn languages easily on their own smartphones.

The present study aims at investigating how Thai university students perceive the benefits of smartphones for English language learning and how they use their smartphones to improve their English skills.

Literature review

Most university students nowadays possess smartphones. Reported in a study by Alfawareh and Jusoh (2014), 94.14% of the students at Najiran University in Saudi Arabia owned smartphones. According to a study by Hossain and Ahmed (2016), overall students showed positive perceptions towards smartphones as a tool for academic activities. The study also reported that most students used their smartphones to access academic information and do other academic activities like recording class notes.

The mobile technology is changing the teaching-learning process rapidly at the university level, and one of its main purposes is to enhance self-learning (Yedla, 2013). The students' experience of self-learning can encourage them to learn on their own for their future purposes (Yedla, 2013). With different kinds of available applications, mobile learning is creating an interactive learning environment in various contexts (Bachore, 2015). The two main characteristics of mobile devices – portability and connectivity – allow students to learn anywhere at any time (Bachore, 2015). Mobile technology offers learners new learning experiences, flexibility in learning, and immediate access to information (Darmi and Albion, 2014).

Mobile devices are also widely used by students for language learning. Among those devices the most used is the smartphone. The study by Al-Emran et al. (2016) revealed that 99% of the students possess mobile devices. The study by Muhummed (2014) surveyed EFL university students in the English Department and found that the smartphone was the mobile device preferred by all students. Nurhaeni and Purnawarman (2018) found in their study that the students considered smartphones' functions as fast and easy for them to learn English. Their study also indicated that the smartphone use can influence the students' learning strategies in autonomous learning – their cognitive and social/affective strategies can be influenced the most.

Language learning applications and websites are abundantly available for learners to learn on their smartphones. Discussed in a study by Jati (2018), most applications and websites provide learners with a fun and easy learning process on different language learning aspects.

Objectives of the study

The objectives of this study are:

1. To investigate how the students perceive the benefits of smartphones for English language learning.
2. To investigate how the students use their smartphones to improve their English language skills.

Research methodology

The participants of the study were English major students at Dhurakij Pundit University, a private university in Thailand. They were students at different years of study: 1st year, 2nd year, 3rd year, 4th year, and graduating students.

The students were asked to complete a five-part Google Forms online survey, with Likert-scale items and open-ended questions. In Part 1, the students provided the background information of their smartphones. They were also asked whether they had smartphones. Only those who had smartphones were considered as the participants of the study. In Part 2, students' overall attitudes towards learning English were surveyed. In Part 3, students were asked about their language learning habits. Part 4 investigated their opinions on the benefits of using smartphones to learn English. Part 5 asked the students how and how much they used their smartphones to learn English.

The responses for the data were collected from 122 respondents: 22 1st year students, 20 2nd students, 26 3rd year students, 29 4th year students, and 25 graduating students. The collected data were analyzed using basic descriptive statistics.

Results and discussion

Students' background of smartphone use:

Part 1 of the study's survey asked the students to indicate whether they possess smartphones. Then, only the students with smartphones (122 students) are the participants of the study. Table 1 shows the students' background of smartphone use. According to the reported data, most students tend to use English on their smartphones; 86.89% of them have smartphones with English learning applications and 68.03% of them set English as the language for their smartphones.

	N = 122	
	Yes	No
• My smartphone has English learning applications.	106 (86.89%)	16 (13.11%)
• I set English as the language for my smartphone.	83 (68.03%)	39 (31.97%)

Table 1: Student's background of smartphone use

As English learning applications are available in abundance for learners to download, the smartphones of most students in this study have those applications. However, the students whose smartphones do not have English learning applications can still get access to English practice on the internet with their smartphones. Moreover, it can be seen that a large number of students set English as the language for their smartphones. This may show that they also like to use English for their daily uses on smartphones. The results presented in the table can show the student's readiness and intention to learn English on their smartphones.

Students' attitudes towards language learning and their language learning habits:

The survey investigated the students' attitudes towards English language learning and their language learning habits. A five-point Likert scale was adopted – ranging from 1 “strongly disagree” to 5 “strongly agree” for their attitudes and ranging from 1 “never” to 5 “always” for their learning habits. The collected data are reported here as the students' background on what they believe about English language learning and how often they practice English in their free time.

1. I enjoy learning English.	4.47
2. I love to practice my English skills.	4.27
3. Learning English is important.	4.48
4. Learning English is fun.	4.30
Overall	4.47

Table 2: Students' attitudes towards language learning

1. I practice English on my own.	3.76
2. I practice English in my free time.	3.59
3. I practice my English grammar.	3.26
4. I practice my English vocabulary.	3.65
5. I practice my English listening skills.	4.08
6. I practice my English speaking skills.	3.49
7. I practice my English reading skills.	3.75
8. I practice my English writing skills.	3.16
Overall	3.59

Table 3: Students' language learning habits

The results presented in Table 2 show that students in general have positive attitudes towards language learning. This might be because they all are English major students. They tend to love to improve their English. The results presented in Table 3 show that students in general do not practice English on their own very often, especially grammar and writing. However, they tend to practice their listening skills more often than other English skills.

Students' perceptions of smartphone use for English language learning:

The results presented in Table 4 show how the students perceive the smartphone use for English language learning. A five-point Likert scale, ranging from 1 “strongly disagree” to 5 “strongly agree”, was adopted for this part of the survey. According to the results, the students show positive perceptions. The average score for their overall perceptions is 4.05. They believe that smartphones can help them learn

English better and improve their English skills; especially on vocabulary, reading, and listening skills respectively.

1. Students can learn English better on smartphones.	4.22
2. Students can improve their English grammar on smartphones.	3.81
3. Students can improve their English vocabulary on smartphones.	4.39
4. Students can improve their English listening skills on smartphones.	4.21
5. Students can improve their English speaking skills on smartphones.	3.66
6. Students can improve their English reading skills on smartphones.	4.27
7. Students can improve their English writing skills on smartphones.	3.56
8. Smartphones are important for students to learn English.	4.21
9. Learning English on smartphones is fun.	4.01
Overall	4.05

Table 4: Student's perceptions of smartphone use for English language learning

Overall, the students agree that smartphones can help in learning the language. These results on the students' perceptions correspond with the results reported in Muhammed's study (2014), in which 99% of the participants considered smartphones effective for English language learning. The study by Chhikara (2015) also confirmed that 100% of the students showed their positive attitudes towards using the mobile devices for language learning.

Students' practices of smartphone use for English language learning:

The results presented in Table 5 show how often the students use their smartphones to learn English in their free time. A five-point Likert scale was adopted for this part of the survey: 1 "never", 2 "hardly ever", 3 "sometimes", 4 "often", and 5 "always". The number of students' answers for each scale in each item is reported. Their answers are also presented in rating scores, and the scores are later compared with their perceptions.

According to the results, most students reported that they "always" use their smartphone for vocabulary checking (in Items No. 8, 9, 10, and 11), especially for checking the meanings of words (87 students, 71.31%). They tend to improve their vocabulary, listening, and reading on their smartphones more often than the others.

I use my smartphone ...	N = 122					score
	(1)	(2)	(3)	(4)	(5)	
1. to learn English.	1 0.82%	4 3.28%	27 22.13%	49 40.16%	41 33.61%	4.01
2. to improve my English grammar.	2 1.64%	12 9.84%	47 38.52%	38 31.15%	23 18.85%	3.54
3. to improve my English vocabulary.	1 0.82%	2 1.64%	23 18.85%	48 39.34%	48 39.34%	4.14
4. to improve my English listening skills.	1 0.82%	6 4.92%	23 18.85%	39 31.97%	53 43.44%	4.13
5. to improve my English speaking skills.	6 4.92%	15 12.30%	41 33.61%	32 26.23%	23 18.85%	3.49
6. to improve my English reading skills.	2 1.64%	4 3.28%	28 22.95%	47 38.52%	41 33.61%	4.01
7. to improve my English writing skills.	5 4.10%	14 11.48%	45 36.89%	37 30.33%	21 17.21%	3.44

8. to check the meaning of English words.	0	1 0.82%	8 6.56%	26 21.31%	87 71.31%	4.63
9. to check the use of English words.	0	1 0.82%	13 10.66%	36 29.51%	72 59.02%	4.46
10. to check the spelling of English words.	0	1 0.82%	15 12.30%	31 25.41%	75 61.48%	4.46
11. to check the pronunciation of English words.	1 0.82%	4 3.28%	17 13.93%	37 30.33%	63 51.64%	4.28

Table 5: Student's practices of smartphone use for English language learning

Discussion on students' perceptions and practices of smartphone use for English language learning:

As compared with their perceptions of smartphone use in learning English and improving English skills in Table 6, lower rating scores can be observed for their practices. This may be because of their learning habits. They view the smartphone use as helpful for learning English, but they do not practice much on their smartphones.

	Students' perceptions	Students' practice
1. learning English	4.22	4.01
2. improving English grammar	3.81	3.54
3. improving English vocabulary	4.39	4.14
4. improving English listening skills	4.21	4.13
5. improving English speaking skills	3.66	3.49
6. improving English reading skills	4.27	4.01
7. improving English writing skills	3.56	3.44

Table 6: Comparison of students' perceptions and practices of smartphone use in learning English and improving English skills

In terms of the smartphone use for improving English skills, the lowest scores can be observed for their perceptions and practices on productive skills (writing and speaking). They tend to use their smartphones more for receptive skills (reading and listening). This may be because of a limited variety of applications focusing on productive skills. According to a review of mobile language learning applications by Heil et al. (2016), most applications focus on receptive skills rather than productive skills. As speaking and writing skills require learners to express their own ideas and produce their own language, it may be difficult to design effective applications for learners' practice. In terms of writing skills, some applications on smartphones can be used for reviewing and revising process: spelling checking or proofreading applications, for example (Muhammed, 2014).

Also, it can be seen in Table 6 that students do not gain much practice on grammar on their smartphones. Although there are a large variety of English learning applications or websites teaching grammar, the students in general do not spend much time in improving their grammar. However, this result corresponds with their language learning habits presented earlier. Some possible reasons may be that the students do not see the importance of grammar or they believe they cannot learn the grammar on their own.

The results presented earlier also show that the students consider smartphones very helpful in improving their knowledge of vocabulary and learning unfamiliar words. They use their smartphones very often in checking the meaning, use, spelling, pronunciation of English words. Nalliveetil and Alenazi (2016) pointed out in their study that students often depend on their mobile phones for word spellings, and the students may believe it is not necessary to learn the spellings as they can have their mobile phones at all times. In Heil et al.'s study (2016), vocabulary instruction was found as the main focus of the applications; however, in most applications vocabulary was presented in isolation, not in context.

How the students practice their English skills on smartphones:

One question in the study's online survey asked the students to report how they use their smartphones to practice their English skills. They were asked an open-ended question "How do you usually practice English on your smartphone?". The question was responded by 109 students (out of a total of 122 participants). Their responses on this open-ended question are presented in Table 7.

	Number of responses
• Watching English movies/series/shows	34
• Checking and learning unfamiliar English words	28
• Listening to English songs	15
• Learning from English learning applications	15
• Learning from video clips teaching English	11
• Chatting in English	9
• Read/watch/listen to news	7
• Playing English games	3
• Doing exercises on English learning websites	3

Table 7: How the students practice their English skills on smartphones

According to their responses, the students use their smartphones mainly to practice their listening and vocabulary skills. The most common way for practice is watching English movies/series/shows. This might be the most enjoyable way for them to learn English. The second most common is checking and learning unfamiliar words. This might be because knowledge of vocabulary is essential for them to learn the language and to improve their other language skills. It is interesting to point out that students tend to love practicing their skills in entertaining activities like watching movies and listening to songs. This may show that students tend to learn English when they feel it is enjoyable.

Students' additional opinions on the smartphone use for English language learning:

The last item in the study's survey asked the students to provide their additional opinions on the use of smartphones to learn English. Most students provide positive opinions. They consider the smartphone use easy and convenient. They find smartphones useful and important for learning English. They can choose to improve their weak points, and they can search for answers on some language points. However, a few students reported that they prefer to learn the language with the teachers – they love to study the language in the classroom setting.

Conclusion and recommendations

Students' perceptions of the smartphone use for English language learning are clearly seen in this study positive – they agree that smartphones can help them improve their English skills. In terms of their practices, students in general use their smartphones to learn English, especially for vocabulary checking and listening skills.

The results of the study reveal that the students gain more practice on some skills than the others. This may be because of the availability of learning applications and the students' interest. Also, the students tend to choose a fun way to learn the language; for example, a large number of students prefer to watch movies or series for their English practice.

Smartphones are important digital devices for English language learning as they allow language learners to get access to language resources anywhere at any time. Using digital devices in EFL teaching and learning provides more advantages than disadvantages as it can get students closer to real life situations and allow them to continually develop their language competence (Bucur and Popa, 2017).

However, the focus of the study's survey is only on the smartphone use for the students' practice in their free time. For classroom use, a number of aspects should be involved. Suggested in Ng et al.'s study (2017), for school-related learning activities it would be more successful if the smartphone is used in combination with strategic teacher support and social interaction among learners. For further studies, their perceptions and practices of the smartphone use for classrooms may be investigated.

The results of the present study are limited to the analysis of students' self-reports and to only 112 students. In future studies, other research tools may be adopted, a larger number of participants may be involved, and the focus may be on the effects of smartphone use on learners' achievement in improving their language skills.

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Iliganon Myths and Folklores: Its Effect to Social Culture

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

This study gathers the Iliganon myths and folklores and shows its effect to social culture. The respondents selected are coming from the different barangays of the city. The researchers used interviews and internet resources in gathering these folklores. Findings showed that there are a number of folklores that originated in the city. Mostly are found in the rural areas and among the folklores gathered, the most dominant is the folktales. These folklores have been one of the locals' source of entertainment long before the existence of technology. However, as time passes by and with the rise of various entertainment sources, folklores are being neglected and their probabilities of preservation are decreasing. There may come a time that these folklores will no longer be accessible to man. Thus, the researchers, with a goal that is to preserve the literature of Iligan, put it into writing and made it into something Iliganons can read and relate. It is in this light that the K to 12 curriculum (Republic Act 10533) otherwise known as the "Enhanced Basic Education Act of 2013" one of its aim is to engage in oral history research with focus on key personalities, from the students, regions, province/town and brought about the Indigenization or localization of literature to make it easy for teachers to impart and transfer literature during the class contact hour.

Keywords: Myths and Folklores, Social Culture

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Introduction

Folklores have inevitably been part of human culture. Places – may it be rural or urban, possess their own different folklores that have been passed from generation to generation and are kept active by the folks in the culture. Sims and Stephens (2005) noted that folklores help us to form and express identity in the midst of an always complex, sometimes confusing social context, in which our sense of who we are is frequently questioned and challenged. This reveals that folklore allows people to give meaning to their lives and their surroundings.

While Iligan City has multi-cultural residents, culture is rich and folklores exist in different areas and aspects. Iliganon folklores would have been completely lost had it not been for the attempt of the native Iliganons to preserve its culture. Some of these folklores allegedly dates from time immemorial which the natives have successfully made known to the modern man through oral narration. Naturally, folklores are told for entertainment on gatherings and social occasions until it becomes a source of identity and gives moral to the listeners especially the younger ones. Until then, the younger ones live with folklores they tell to their children and the children of their children.

The separation of society, culture and folklore in Iligan City is inviolable such that Iliganons obtain a culture that is reflected through existing folklores. According to Jayalxmi (2010), in the contemporary society, we are constantly struggling to go back to our own roots and to maintain our ethnical identities. This explains that folklores originating from the past contribute to who we are today and helps define and enhance understanding of ethnical identities.

Folklore, as an academic discipline, focuses on the human creativity within specific cultural and social contexts. This includes how such expressions (i.e. stories, music, material culture and festivals) are linked to political, religious, ethnic, regional, and other forms of group identity. As the city of Iligan, being rural, journeys through its progress, Iliganons take their folklores along with them. Taking this into account, the researchers seek to collect different Iliganon folklores as well as investigate how Iliganons are affected socially with the folklores originating in the city. The result of this study can bethebasis for the teachers as to what extent should folklores be integrated in the study of literature.

Body

This study is anchored with Richard Dorson's Current Folklore Theories, Functionalist Theory by Bronislaw Malinowski, Theory-theory, and Lev Vygotsky's Socio-cultural theory.

Richard Dorson, a Professor of History and Folklore and Chairman of the Folklore Program at Indiana University, speaks of the history and existence of folklore over many years, specifically that of twentieth century. In his article in 2016, *Current Folklore Theories*, he cited that there exist five points of view (or schools) related to folklore. These five include: Comparative Folklore Theory, National Folklore Theory, Anthropological Theory, Psychoanalytical Folklore Theory and Structural Folklore Theory.

Comparative Folklore Theory, known throughout Dorson's paper as "Finnish", is deemed to be the most empirical theory of the five. This Finnish method takes a historical-geographical approach, making comparisons based on all variations of each element of folklore in an attempt to reconstruct its history. Focusing on common themes, the comparative theory searches the many internationally varied tales for oldest traits. Since folklore tales vary as a direct result of geographic change in location and evolution of time, all variations must link back to one common time and place. This means that folklores are being collected and compared to one another to come up with a common theme that may help in tracing back identities and customs of the old, thus, giving the modern generation of a better picture of the past.

The conceptualization of the problem in this study has been assumed that the social culture of the respondents was influenced by the folklores they were exposed to.

At least fifteen (15) respondents coming from different barangays of Iligan City participated in this study. These respondents were residents who can retell folklores about their respective barangays. Specific barangays include only the ones accessible to the researchers in terms of its proximity and safety. The respondents were selected accordingly, if not recommended by authorized personnel in barangay, i.e. barangay chairman. The focus of this study was on the collection of folklores taking into account the extent of its effect in the social culture.

Figure 1 showed the conceptual framework of the study. It presented three (3) components: Folklores (myths, legends and folktales) as the independent variables; Social Culture as covariates; and the output, *Iligan Anthology as Reflected in Myths and Folklores* as the dependent variable.

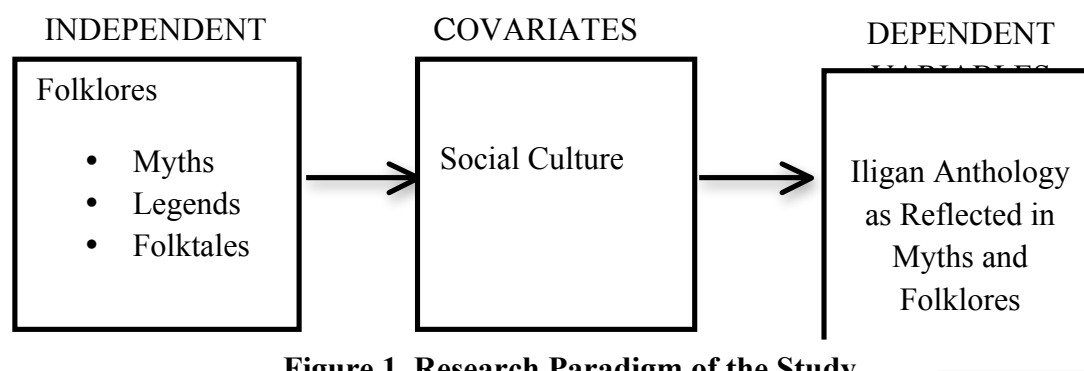


Figure 1. Research Paradigm of the Study

Statement of the Problem

This study aimed to collect Iliganon folklores and to assess how it affects social culture.

Specifically, this study sought to answer to the following questions:

1. What are the Iliganon myths and folklores?
2. How do these folklores affect social culture?

Scope and Delimitation

This study aimed to collect and compile Iliganon folklores for future references. Involved in this research were residents from different barangays of Iligan City who can relate folklores originating in their place. Each has contributed at least one

folklore. The survey was conducted during midterm and semi-finals of the first semester of A.Y 2017 - 2018.

This research employed stratified sampling technique in which the selection of respondents was done through determining the common characteristics of the respondents i.e. knowledge on folklores. The respondents were expected to respond in an actual interview conducted by the researchers. The respondents' answers were recorded, transcribed and/or translated.

Definition of Terms

The following terms were defined operationally and conceptually for better comprehension of readers.

Folklore. This refers to the traditional beliefs, customs, and stories of a community passed through the generation by word of mouth (Oxford English Dictionary, 2017). In this study, it referred to the history that was preserved by the people of the culture consisting of traditions belonging to a specific culture. These traditions usually include music, folktales and other narratives.

Folk. This can automatically be identified with peasant or rural groups or with people from the past (Alan Dundes, 1965 as stated by Simon Bronner, 2007). In this study, it referred to a group of people who shared at least one common factor – could be occupation, language, religion or something that they can call their own.

Social Culture. This refers to the complex set of meanings, habits, values and behaviors adopted by one or more social formations (IGI Global Dictionary 2017). In this study this pertained to the actions presented by the respondents in socialization.

Socialization. This refers to the continuing process whereby an individual acquires a personal identity and learns the norms, values, behaviors and social skills appropriate to the social position (Dictionary.com). In this study, this referred to the way a person act during interaction among the people surrounding them in the society.

Related Literatures

The Philippines is a country that has varied cultural influences. Most of these influences are results of previous colonization, deriving mainly from the culture of Spain and the United States. Despite all of these influences, the old Asian cultures of Filipinos have been retained and are clearly seen in their way of life, beliefs and customs. Wherever you go, Filipino culture is very evident and has largely been appreciated and even applauded in many parts of the world. This proves that Philippine folklores continue to exist and give pride to the Filipinos.

Folklore and folk traditions have formed a large component of emergent nationalism. Frequently, the burgeoning interests in national language and a national folklore reinforce each other. Concerns for national history and literature also overlap with pride in a distinctive folklore. Circumstances vary from nation to nation, but it promotes national self-consciousness and has clearly appeared to have recognized the value and utility of folklore. Folklore is a national treasure, so, it should be valued and

preserved. Every child is entitled to this treasure. It is his heritage. He should be born to it in the home, and should come to a sure realization of it in the school.

Iligan City is home to diverse cultural groups: Maranao, Higa-onons, Lumads and Christians. Internet site LGU Iligan City (2012) states that for ages, they have worked together, played together, and lived together in peace and prosperity. It is their diversity that makes Iligan what it is today. It is no wonder that the city boasts different groups of artists that highlight the different talents of Iliganons in: art, music, dance and literature. Folk narratives represent a major part of the domain of folklore. The term 'folklore' is used for the verbal, spiritual and material aspects of a culture that are conveyed verbally, by observation, or by imitation. It is significant as an academic discipline, in the fields of literature, anthropology, sociology, art, music, history, linguistics, philosophy, mythology and so on. Specially, in the context of anthropology, folklore is an important means to study of man related matters. "The relation of folklore to culture is highly concerned in anthropology because folklore cannot be fully understood without thorough knowledge of their culture. Folklore belongs to one branch of cultural anthropology and anthropologists consider it as a part of culture but not the whole of culture. (Bascom, 1953 as stated by Kalyani, 2009) Folktales permit people to express emotions in a socially approved manner that would be inappropriate in any other form. The acceptance of popular lingo and non-standard expressions is commonplace and actually enriches folktales. People can engage in projective fantasy by creating tales that contain realistic themes, using symbolism and metaphoric projections on both the unconscious and conscious levels.

Folktales can be used in virtually all disciplines to convey knowledge and communicate ideas. Historians, for example, while questioning the historical accuracy of a tale, acknowledge that much information is contained in them. Folk history reveals a lot about behavior during the historical period, and certainly the views of 'folk' give insight into the time and the prevailing attitudes held by the people. Anthropologists can study the cultures and traditions of a group. The behavior of the characters and the deeds performed reveal much about the lifestyle and beliefs of the cultures.

Ezeigbo (2009) stated in *Language and Creativity in African Literature* by Jacinta Onyekachi (2015) that many children, especially those born in the urban areas, have completely lost touch with the oral traditions of their people. Gone are the days when children grew up with deep knowledge of their culture and traditions. Indeed in the traditional past, children were entertained and instructed with folktales. With the rise of technology comes various sources of entertainment for adults and children. This made folktales seem to be left-behind. Some writers have tried to write down and preserve the oral tradition in books which are marketed for children with the intention of instructing and entertaining them, for example, the ubiquitous tortoise tales which have found their way in some storybooks.

Praxedis L. Garay, 65, a resident of Brgy. Sta. Filomena, makes it a habit to relate folklores, especially customs and beliefs to her grandchildren. This is her way of showing the younger generation the beauty and importance of the folklores of Iligan. This made her grandchildren more careful and cautious of the way they socialize with the people they interact with.

Culture is a form of *uniformity of mankind* according to E.B. Tylor and J.H. Frazer, 1981 as stated by Daniel Gold in his book *Aesthetics and Analysis in Writing on Religion: Modern Fascinations*, 2003. Tylor provided the framework for his theories regarding cultural diffusionism, as well as two ways wherein groups of different age constructs can have commonalities in terms of cultural forms which are the independent invention and the inheritance from ancestors. Tylor then states that “The earlier conceptions of culture is that of a complex whole which includes knowledge, belief, arts, morals, laws, customs and other habits possessed by any single member in a society.”

The closest and most immediate means of transmission of knowledge, language, practices, myths, beliefs, lores and etc is through oral tradition. There are important elements that serve as arbiters for distinguishing a folk narrative from other forms and those are its shared *experience, relevance* and *symbolism* to the people in the community.

Allan Dundes a folklorist in the University of California, in J. Bronner’s *The Meaning of Folklore* (2007), finally associates folklore with the society by the oral tradition, stating “Folklore, as a mirror of culture, is as invaluable as a reflection of a particular culture’s conditions and values.” Dundes also stated that, it was not understood in Boas’s mirror concept that an idtem of folklore can serve as a vehicle which requires an individual to what he may not be permitted to do in everyday reality. This argument of Dundes later consolidates the importance of folklore to reveal the trends of changed, unchanged or even invented traditions in the culture of the community over time.

In addition, Hobsbawm, E.J & Ranger, T.O in their book *The Invention of Tradition* (2012) states that “modern academic discourse on traditional lores argues that it is not culturally given but a cultural construct, invented at a certain period of time under certain circumstances. It is not relevant to judge whether a tradition phenomenon (for example, a folklore ensemble) is genuine or spurious. Tradition is neither genuine nor spurious because it is not handed down from the past as a thing or collection of things, but it is symbolically reinvented in an ongoing present. As particular lore or tradition is not passed on from generation to generation in language, art, and music as a time-honored body of knowledge and values, but it is rather in a constant stage of disorder and confusion, about to disintegrate under the pressure of change. And members of the society strive to restore and maintain tradition in new rituals, displays, and in diverse forms of entertainment, or in the revival of old ones.

Also According to Eugenio (2002) in his book, *Philippine Folk Literature: An Anthology*, culture or traditions and folklores are both dependent on each other. Not only does folklore shift, but it changes as it shifts between the highest to the lowest layer of culture.

In folkloristic writing, the “mirror” concept is still applied to relate historical and cultural information about a group that has undergone change from another perspective, with the presumption that it is also a maker of a particularistic social identity. Further references on the idea of folklore not rejecting culture suggest, however, that there is the underlying psychological possibility of folklore distorting or inverting reality.

Lopez(2006), in her book titled “*A Handbook of Philippine Literature*” elaborates that folklore is a paradox, for it is a combination of stability and change. There is always the conscious and unconscious introduction of new elements in a folklore item by the transmitter of the lore. The two factors—the creative urge of transmitters of lore to improve on a traditional material and the forgetfulness on the part of the raconteur or a creator of a material item that causes in the substitution of new elements in place of the forgotten ones cause innovation in folklore.

“Amazing as it may seem, however, folklore maintains and preserves itself for posterity through its stable structure. The basic skeletal pattern in folklore is constant even if folkloric content and stylistics vary such that even character, setting and style of narration change, the basic plot remain unchanged”, Lopez (2006) stated.

Related Studies

The first period of Philippine literary history is the longest. As literary works created in the setting of a society where the resources for economic subsistence – land, water, and forest – were communally owned, the oral literature of the pre-colonial Filipinos bore the marks of community. The subject matter was invariably the common experience of the people constituting a village – food-gathering, creatures and objects of nature, work in the home, field, forest or sea, caring for children, etc. This is evident in the most common forms of oral literature like the riddle, the proverbs, and the song, which always seem to assume that the audience is familiar with the situations, activities and objects mentioned in the course of expressing a thought or emotion.

The language of oral literature, unless the piece was part of the cultural heritage of the community like the epic, was the language of daily life. At this phase of literary development, any member of the community was a potential poet, singer or storyteller as long as he knew the language and had been attentive to the conventions of the form.

The Filipinos realized the essence of folklore as part of the Philippines’ national cultural heritage in the nineteenth century, as a result of the nationalism of its people. The inward relation between nationalism and its people’s interest towards folklore was evident. Because ownership of a literary composition by the originating individual is not emphasized in the process of oral transmission, it is conceivable that the receiving performer of a song or a poem often feels that the work he is performing or delivering is expressive of his own beliefs, attitudes and emotions (Lumbera and Lumbera 2007). Folktales act as cultural transmitters (Leimgruber, 2010). Every culture has long traditions of oral storytelling. Students can learn about their own culture and transmit their own culture to others by studying folklore, by collecting folklore from their own families and communities, and by writing or dramatizing their own variants of traditional tales and rhymes. Hanlon (2000), as stated in Hou-rani (2015), in her article *folktales, Children Literature and National Identity in the United Arab Emirates*, said that once educators and students start looking, they can find allusions to familiar folk heroes, rhymes, and sayings throughout popular culture. Folktales are universal and enhance globalization of cultural knowledge. Although it is interesting to compare culturally specific details in folklore from different times and places, one of the most intriguing phenomena in human experience is the

similarities in stories with universal themes from all over the world. For example, there are obvious historical connections between the Appalachian "Ashpet" and the German "Ashputtel" that European settlers in Appalachia would have known. There are stories that are similar to Cinderella motifs also found in ancient African and Asian traditions. There are many fascinating theories about the universal elements in world folklore and myth, in addition to the localization and cultural unique features of folktales, but (unfortunately) this is beyond the scope of this study.

Eugenio (2008) in her journal *Folklore in Phillipine Schools* stated that when folklore was first taught in Philippine schools, American teachers who collected and studied these folktales were the ones who introduced them to the schools. During the first decade of the twentieth century, folklores from the Tagalog were collected by Fletcher Gardner and Lucetta Kellenbarger, and they taught them in schools. Berton Maxfield and W.H. Millington, on the other hand, were teaching and collecting folklore in Panay Island. Most, if not all, of the Filipino children encountered and were familiar with folk stories such as why the sky is high and the legend of the first bananas. Moreover, these tales were authentic folklore having been taken from such early collectors as M.C. Cole, Alfred Worm, and some student collectors of Dean S. Fansler and H.O. Byer.

According to Jenkins (2002) and Hanlon (2000), in Hourani's *Folktales, Childrens Literature and National Identity* (2015), folktales reflect infinitely meaningful socio-cultural codes, moral and civic values. Because folktales represent human experience through symbols and archetypes, there is room for endless debate about how to interpret particular tales. These tales also provide excellent examples of the symbolism of socio-cultural codes that may be conveyed in children's literature. They also tend to preserve oral history, and link oral and written literatures of the world). According to Hanlon (2000), educators often forget that all literature developed originally from oral traditions, and that most people in human history had no writing system to record their languages and stories. Storytelling is still alive as an oral tradition in many places. Thus folklore works well when teaching oral skills, speech drama and social values.

Folktales are found among peoples from various cultures, all over the world. They include fables, myths, tales of heroes, fairytales and ghost stories etc. Nevertheless, there are many reasons that limit folk narrative practices among school children. Mainly, children always face the problem of absence of leisure for extra activities such as practicing folk narratives due to competitive education system and electronic media. Most of children have to spend free hours after school and weekends for tuition classes. In addition, most of them spend time on watching television. Even though, there are some television programs of folk narratives, children are mostly attracted by other popular programs (Kalyani, 2009).

As emphasized in UNESCO's Convention for the Safeguarding of Intangible Cultural Heritage (2003), folktales play an invaluable role, along with other cultural traditions, in bringing people closer together and "ensuring exchange and understanding among them." As globalization and social transformation demand renewed dialogue among communities, educators and artists are more motivated to protect and promote oral traditions and related cultural heritage. As pointed by Hae-ri (2003), studies of folktales never cease to be relevant even today and will remain so in the future.

Moreover, the indigenous knowledge and wisdom found in the folktales keep us connected to our traditions and indeed help shape our culture. Today's children may think of folktales as old-fashioned or even irrelevant. However, the influence of folktales is alive and well even today. Despite these stories' age, they still carry important messages to learners today.

Conclusion

A folklorist, Margaret Read MacDonald (2004) wrote in her tale, "Once the story leaves your mouth, it is carried away in the hearts of your listeners". This is one of the most appreciated attribute of folklores, that once it is told, it tends to live in the hearts of the listeners - it is remembered. When remembered, one can tell it to the other and the story live longer. But with the rise of multi-media, younger generations are bowing their heads into watching and listening to their gadgets that they forgot to look up and listen to what the elderlies has to say.

As fearful as it could get, there may come a time when folklores will no longer be accessible to man. In this regard, this study promotes the Iliganon folklores with a goal which is its preservation. Through "*Iliganon Folklores, A Local Anthology*", Iliganon stories and legends from the past is made accessible in printed material. This can be very helpful not only to the researchers seeking for these stories for academic purposes but also to the commoners in most common occasions when entertainment is needed.

Acknowledgement

Genuine gratification and profound appreciation are hereby lengthened by the researchers to the following individuals who have made the substructure of this thesis credible:

Esmeralda P. Ege, MAEd, Coordinator of the College of Education for the unwavering guidance, patience, and encouragement toward the completion of the study;

Ms. Ivy Eumel T. Daligdig, Esmeralda P. Ege, MAEd the members of the panel, and Ritzcen A. Durango, Ph. D., the chairman, for their preeminent sagacity in imparting comments and suggestions for the enhancement of the study;

The barangay officials and the different informants, their names cannot be disclosed, who are the respondents of the study, for rendering their time and transparency during the research, their information's helped this research to continue and prosper.

Mr. Judito G. Bentoy, Mrs. Ve Cecilia T. Bentoy, Mr. Dionesio P. Talisic and Mrs. Dioscora S. Talisic, Mr. Procoilo L. Garayand Mrs. Maria Christine I. Garay, their parents for giving them courage, constant prayers, moral and financial support, to whom their work is dedicated;

Above all, their utmost gratitude is given to the Almighty God, the source of divine grace, for keeping them safe in gathering the data and making everything possible with his holy presence.

JM, Mitchel & Gritchelyn

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The Role of Informal English Language Teaching in Childhood on English Knowledge and Attitude towards English Language in Adulthood

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

The purpose of this study was to investigate the role of informal English language teaching in childhood on English knowledge and attitude towards English language in adulthood. The research design was of a causal-comparative nature. The statistical population included all the first year undergraduate students of Islamic Azad Universities who had been studying humanities in the academic year of 2015-2016. A sample size of 200 students were selected by multistage cluster sampling method. The research tools were English knowledge test and attitude questionnaire which were developed by the researcher. Statistical analyses using MANOVA was implemented. Findings revealed that the informal English language teaching in childhood, as compared to its absence, leads to more English knowledge and improves attitude towards English language in adulthood. Based on the obtained results, it is recommended that English language learning should be started at an earlier age.

Keywords: English language, English Education, informal teaching, English knowledge, attitude towards English language

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Introduction

In the learning process as well as the success of learners in the second language learning [and foreign language], emotional variables such as attitude, orientation, motivation, and anxiety (Noels, Pelletier & Vallerand, 2000), are as important as other variables such as talent, intelligence, age, and personality (Zainal Abidin, Pour-Mohammadi and Alzawari, 2012). In most researches in the field of foreign and second language learning among the various factors mentioned, the age starting of language learning and the attitude of learners towards language learning are considered to be the most important factors involved.

Attitude plays an important role in language learning. Success or failure of learners in learning a language is not just related to learning capacity and cognitive abilities of people, attitude also plays a very important role (Zainol Abidin, Pour-Mohammadi and Alzawari, 2012).

Even the attitude towards a language influences one's orientations towards that particular language. According to Karahan (2007), a positive linguistic attitude allows learners to adopt a positive orientation towards learning English.

Due to the importance of individual's attitude towards language learning process and the success and failure rates in this field, many related studies have been carried out over the past years. Researches have been done by individuals such as Gardner (1985), Yang (2012), and Ahmed (2015) to highlight the key role of this variable in the process of learning and teaching foreign and second languages. Various studies have shown that age and its related factors are considered as the most important variables in the field of language learning. The early years of life are the most influential years in human life for the acquisition of languages. In the early years of life, emotional, physical, cognitive, psychological, and also linguistic changes take place very rapidly. Foreign language education is expanding to children all over the world, and as a result, the age of language learning has also declined in many countries for a variety of reasons, such as political, economic, and educational ones. Although the results of language teaching have not been completely discovered in the early years of life, education is still widespread in the early years of life (Gursoy, 2011).

There is no consensus on the teaching of English as a foreign or second language in childhood between specialists and researchers. A group of them defended education in this era, and the other group is opposed to it. Researches have done by Fathman (1975), Dominguez and Pessoa (2005), Orhan Kocaman, Nurgul and Kocaman (2012) and Li (2014) support foreign and second language learning in childhood. In addition, individuals such as Johnson and Newport (1989), Asher and Garcia (1969; quoted by Marinova-Todd, Bradford Marshal and Snow, 2000), Khalifa Gawi (2012) who advocate a critical period hypothesis (CPH), and agree to learn English in childhood. Another group of professionals, such as Snow and Hoefnagel-Hohle (1978), Rivera (1988), quoted by Marinova-Todd, Bradford Marshall and Snow (2000) who oppose

the critical period hypothesis, consider adults in comparison with children as having great advantages in learning foreign and second languages.

In addition to the starting age of education, it is also very important to consider the type of attitude that individuals are taking with regard to the time they start teaching as well as the environment and the instructor. In relation to the points discussed above was decided to investigate the role of informal English language teaching in childhood on English knowledge and attitude towards English language in adulthood.

Method

Society and Statistical Sample

The research design is a causal-comparative. The statistical population of this study is the first year undergraduate students of Islamic Azad Universities based in Tehran, who had been studying humanities in the academic year of 2015-2016. The sample size was calculated based on Krejcie and Morgan table to be 200 people. The sampling method was a multi-stage cluster type. The sample was randomly selected from all the branches of Islamic Azad University located in Tehran, according to the number of sampled students (Islamic Azad University- South Tehran Branch and Islamic Azad University- Central Tehran Branch).

Tools

English Language Knowledge Test: In order to prepare the English language test and determine its content validity, first of all the table of specifications for a summative test in English was prepared; English books of second and third grades of senior high school of old system of Iran's education. To prepare English language test, the following books were used according to the specifications table: English books of second grade of senior high school; second and third grades of senior high school and college English books of old system of Iran's education, complementary books, preparation books for university entrance examination, and final exam questions. Later on, a test of four option multiple choice according to the rules for preparing multiple choice questions (Saif, 1395) was designed. This test taking into account the psychometric criteria included 100 questions for implementation and preliminary study (Pilot Study) were designed. Then, this test was carried out after the confirmation of professors on a small group of statistical sample of educational science students from the Faculty of Psychology and Educational Sciences of Islamic Azad University- Central Tehran Branch involving 26 students. Later on, in order to analyze the test questions, the difficulty coefficients and the discriminant coefficients of the questions were calculated. Therefore, very difficult or very easy and defective questions were removed and the final test in the form of 50 questions test for running on two groups of the main sample from the statistical population was prepared. The validity of this test was also considered through content validity using the specifications table as well as the opinion of the experts in this field (supervisor professor). This test has a decent validity. The reliability of this test was also reported

through the internal consistency method, using the Kuder-Richardson method (KR21) of 0.91.

Attitude Questionnaire: In order to prepare the survey questionnaire, the Attitude/Motivation Test Battery (Gardner, 2004), an English version of 104 items, was selected among the available tools. Gardner's questionnaire (2004) has been developed and expanded to address the need to measure emotional variables, and has evolved following long-term researches which many of them are based on English-language students who have learned French as a second language. According to the literature review of the present study, this questionnaire was used more than other ones and also by various researchers. Then, from different items of this questionnaire, those who were appropriate with regard to the title, goals, and questions of the present research were selected, and other appropriate items were added to them. This questionnaire is a self-reporting tool and is a closed-ended response test. Therefore, the questionnaire consisting of 20 items was developed to assess the attitude towards foreign language, with a focus on English. Each item is a simple sentence that is set in the form of a Likert scale with four-choice responses. The entire spectrum is totally in agreement to completely disagree; I completely disagree with number 1 and I totally agree with number 4 points. This process of counting according to the items meaning are reversal in questions numbers 3, 7, 14, 15, and 16; therefore, the minimum score is 20 and the maximum one is 80. Validity of this questionnaire was determined through content validity by using the opinion of experts in this field, it has a proper validity. Its reliability was also reported through the internal consistency method and using the Cronbach's alpha of 0.92.

Methods of Data Collection

In order to collect information, two groups of first year undergraduate students of Islamic Azad University were selected randomly from Tehran branches, who had been studying humanities in the academic year 2015-2016. The first group consisted of students who had done English studies before formal education, so that when they entered the English language classroom at school, they had a background in learning English and the other group included students who entered the English language class of school without any prior English language learning. A questionnaire with demographic information was distributed amongst students. The data were coded and later analyzed by SPSS software.

Data Analysis Method

In order to analyze the data, a multivariate analysis of variance (MANOVA) was used. Bartlett, Box's M, and Levene tests were also used to examine the assumptions.

Findings

In order to answer the research questions, the Multivariate Analysis of Variable (MANOVA) was used. Before using MANOVA, the assumptions were checked. The results of Bartlett's test ($F= 17.99$, $P< 0.001$) shows that there is a sufficient

correlation between dependent variables. The results of Box's M test were significant for the variance-covariance matrix homogeneity assessment in dependent variables ($F= 0.33$, $P< 0.05$); accordingly, homogeneity condition of the variance-covariance matrix was not observed, but due to the equality of group size versus failure to adhere to this assumption is not sensitive.

Table 1: Leven's Test Results

Variables	F	df1	Df2	Sig
English Language Knowledge	24.31	1	198	0.001
Attitude Towards English Language	0.14	1	198	0.70

As it can be seen in Table 1, the results of Leven's test for defining the assumption of equality of dependent variables variance indicates that the variances in attitude scores are equal and there is no significant difference between the two groups ($P > 0.05$), but the variances are not the same in knowledge scores ($P < 0.05$). Multivariate analysis of variance is not sensitive to the lack of compliance with this assumption due to the equality of group size. Currently all the assumptions are examined and the next table shows the main result of the multivariate analysis of variance.

The results of the Wilk's Lambda test show that the difference between the groups mean in the composite dependent variable is significant [$F = (2 \text{ \& } 197) 23.43, P < 0.001, \text{Partial}\eta^2 = 0.19$]. This means that there is a significant difference between the linear composition of the mean of dependent variables in the two groups. After applying Wilk's Lambda, which is meaningful, the results of the analysis related to the effects between the subjects were examined, which can be seen in Table 2.

Table 2: Results of multivariate analysis of variance of group effects (teaching) on dependent variables

Resources	Dependent Variable	SS	df	MS	F	Sig	Eta Squared
Group	English Knowledge	5110.605	1	5110.605	44.208	0.001	0.183
	Attitude Towards English	1250	1	1250	12.52	0.001	0.060
Error	English Knowledge	22889.75	198	115.605			
	Attitude Towards English	19757.68	198	99.786			

As it is seen in Table 2, there is a significant difference between the two groups of trained and not trained subjects in English knowledge [$F = (1 \text{ \& } 198) 44.208, P < 0.001, \text{Partial}\eta^2 = 0.183$]. In this way, the English knowledge scores of people

trained in childhood are significantly higher than those who have not been trained in childhood. The group variable explains 18.3% of variance of English knowledge.

There is a significant difference between the two groups of trained and not trained subjects in attitude towards English [$F = (1 \text{ \& } 198) 12.52, P < 0.001, \text{Partial}\eta^2 = 0.060$]. In this way, attitude towards English score of those who are trained in childhood are significantly higher than those who have not been trained in childhood. The group variable represents 6% of variance in attitude towards English.

Discussion and conclusions

According to the results of this study, those who studied English in their childhood (6 to 12 years old) had more English knowledge than those who began to learn from school. The results of this study are similar to those of Orhan Kocamen and Nurgul Kocamen (2012), Dominguez and Pessoa (2005), Li (2014), and Khalifa Gawi (2012), but they were not consistent with the research of Gorjian, Mahmoudi and Mir (2010). In the study of Gorjian, Mahmoudi and Mir (2010), there was no significant relationship between attitude, age, gender, and English language learning; in this study, although age does not affect the language learning, but in Iran, the age variable can be associated with social and psychological limitations which is examined that it may affect the process of language learning, so it may not be coherent because of various factors, such as differences in statistical populations and samples, time and environment of testing and ignoring some other influential factors. Therefore, the results of these studies indicate the success of children in learning English. Considering childhood as a golden age to learn a variety of concepts and subjects, including foreign or second language, it is vital to take advantage of children's abilities at this time. Also, according to critical period hypothesis that children's success is due to neurological and biological factors, during this period, children have very good rote memory and this ability is very effective to help success. In addition, the children's rote memory capacity is also high and does not let them rely on rote learning. Also, the child's brain in the early stages of adolescence absorbs new sounds and patterns easily; thus, learning English as a foreign language plays a key role in children's educational programs. In addition, children can learn other languages similar to their mother tongue without the need to use the grammatical rules consciously; similar to the mother tongue, hearing is the first source of children's learning, which first only stored what they heard and then they speak of what they have only heard for a long time, precisely the process that they adopt in native language (there are differences of opinion with respect to different theories). With using natural approach, English language environment and not teaching in classroom, children learning process is more successful than adult, although children are not ready for classroom learning and will not succeed. It should also be considered that age is only one of the important factors in learning a language and neglecting other effective factors leads to deceptive conclusions. Factors such as teaching method and, the learning strategies adopted, and the learning environment are also very important; therefore, given the role that the age factor plays in learning English, starting to teach English to children of ages under 12 years old, in order to enhance their English

knowledge in adulthood, it is essential that the results of this study have been in the same direction.

One of the other studied variables is attitude towards English. According to the results of present study, those who studied English in their childhood (6 to 12 years old) had better attitude towards English language than those who had started their learning from school. The results of this study are consistent with Karahan's research (2007). As a matter of fact, age was the only factor which have been used by Karahan, but in this study, in addition to considering the age, the place where the training began; school or institute, it was considered as the main factor. Attitude is considered as an essential component of language learning. Teachers and educators of English as a foreign language need to be aware and respect students' feelings, beliefs, orientations, personality traits, and behaviors before thinking about their cognitive abilities. Also, educational programs and classroom activities should be created and implemented according to the students' individual needs and differences in order to create a positive attitude towards English. Therefore, due to the important role that the attitude plays in the academic achievement of learners, various studies and researches in this field is of great importance; consequently parents and educational leaders are encouraged to start teaching English from childhood. It is also suggested to English teachers and educators not to ignore learners' attitudes towards English language, but to respond to them and be aware of students' prior perceptions and attitudes towards English language.

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The Use of 'Kebudiluhuran' Aspect as a Curriculum Development in Budi Luhur University

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

Budi Luhur University located in Jakarta is a private university that has a basic principle in the learning process. Budi Luhur University uses the philosophy of "*Cerdas Berbudi Luhur*". based on that in the application of the curriculum that emphasizes on the achievement of learning, Budi Luhur University includes the element of *kebudiluhuran* in each subject. The concept of "*cerdas berbudi luhur*" are the two inseparable, intelligence without based on noble character will tend to be used to oppress others, on the contrary noble character without intelligence would be targets of crime and oppression of others. the aims of this paper is to give an idea about noble character and how its implementation in student learning plan. noble character is the human behavior based on the values, norms and culture of Indonesia in accordance to ideology of Pancasila. Budi Luhur University applies the concept of *kebudiluhuran* as a means of strengthening student attitude. The most important thing an intellectual generation must have is smart and "*berbudi luhur*", known as emotional intelligence, social intelligence, and spiritual intelligence. Data are collected from the curriculum of the Faculty of Communication science with an in-depth analysis of the aspects of *kebudiluhuran*, through good case examples in the teaching practice, field assignments and final examination.

Keywords: noble character, curriculum development, character development

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Introduction

The curriculum of higher education is a series of planning and regulation on goals, contents and materials of the learning process as well as methods used as the reference guideline of implementing the learning activities to achieve the goals of the higher education (Article 35, Law of Higher Education Number 12 Year 2012).

Curriculum is the education program containing a variety of teaching materials and learning experiences which have been programmed, planned and designed systematically on the basis of the existing norms which must become the reference guideline in the learning process for education staff and educating participants to reach the education goal (Dakir, 2004: 3).

Curriculum is dynamic. It means that it has to be frequently developed and improved to follow the development pace of science and technology. With education, it is expected that human beings with high quality being born can understand and build their society. Therefore, education goal, content and process must be adjusted to the existing condition, characteristics, wealth and development of society.

The Republic of Indonesia Ministry of Higher Education gives freedom to each university to develop each curriculum in accordance with each basic principles. Therefore, when implementing a curriculum in each higher education institution, it likely uses different principles with the curriculums used in other higher education institutions.

Budi Luhur Univeresity located in Greater Jakarta Province as the Capital City of Indonesia, is the private university that has the basic principle of the learning process. The basic philosophy of Budi Luhur University is "Intelligent and Virtuous". Therefore, the curriculum development in University Budi Luhur which started from 2017 has entered the elements of virtue in each subject to be taught. "Intelligent and Virtuous are two unseparated aspects because intelligence without being based on virtue will tend to be used to fool and injure others, and otherwise, virtue without being balanced on intelligence will be the target of crime and oppression of others."

This article aims at describing the principles of virtue which have been applied in the learning curriculum in Budi Luhur University in accordance with the national standards for higher education in Indonesia. The methods which would be used here were research desk with the data collecting technique taken from the curriculum of Communication Science Faculty with in-depth analysis on the aspect of virtue with examples of cases in the practice of learning process, field task and semester final exam.

Literature review

Curriculum with the Basis of The KKNI (Indonesian National Qualification Framework) and The SN Dikti (National Standards for Higher Education)

Curriculum is a program or learning plan that does not only contain the program of activities but also goals to be achieved as well as evaluation tools to determine the success of achieving the goals. Moreover, it also contains tools or media which are expected to be able to support the achievement of these goals. Curriculum as a plan is designed to speed facilitate the learning-teaching process under the guidance and responsibility of school or education institutions as well as their teaching staff (Mudlofir, 2012, 2).

The KKNI (Indonesian National Qualification Framework) is the reference framework that is used as a measure in the recognition of education ratings. The KKNI is also called the framework of competency qualification rating scale that can juxtapose, equalize and integrate among the sectors of education, job training and experiences in order to provide the recognition of work competencies in accordance with the structure of work in various sectors.

As the form of measurement in the KKNI, it is divided into four aspects, i.e. ***Attitude and Value Standards, Authority and Responsibility, Job Ability, the Mastery of Knowledge***. Moreover, of the four measurement aspects, it will be described as the outcome learning.

The description for Attitude and Value Standards is among others : Faith in God Almighty; Having good morality, ethics and personality in accomplishing their duties; Serving as citizens who feel proud and love their motherland as well as support world peace; being able to work together and having social sensitivity and high concern for society and the environment; respecting the diversity of cultures, viewpoints, faiths and religions as well as opinions or original findings of others; upholding the law enforcement as well as having spirit to give priority to the interests of nation and society in general.

Moreover, in formulating the achievement of the learning process, in addition to the basis of the KKNI, it must be in accordance with the reference guideline of National Standards for Higher Education in 2015 called (the SN DIKTI 2015). In this matter, the SN DIKTI 2015 also formulates four aspects to achieve the learning process, i.e. Aspect of Knowledge, Aspect of Attitude, Aspect of General Skill and Aspect of Specific Skill. In formulating the aspect of attitude that each graduate has to have in accordance with the SN DIKTI 2015, among others these include: Being faithful and devoted to God Almighty and being able to show religious attitude; Upholding humanitarian values in carrying out duties on the basis of religion, morality and ethics, contributing to the improvement of life quality in society in general, nation, state and civilization on the basis of Pancasila; Serving as citizens who feel proud and love their motherland, having nationalism and a sense of responsibility to the state and nation; respecting the diversity of cultures, viewpoints, religions and faiths as well as opinion and original findings of others; Making cooperation and having social sensitivity as well as high concern to society and the environment; Obeying the law and having discipline in social and state life; internalizing academic values, norms and ethics; showing attitude of job responsibility in the field of each expertise independently; internalizing the spirit of independence, fighting and entrepreneurship.

Of the above description on the achievement that definitely must be included in the formulation of achieving the learning process in higher education, in the application of university and in this matter the study program it can include some additions in order to provide the characteristics of graduate of university or study program in accordance with respective characteristics.

With the enthusiasm to provide a specific characteristics of graduate of university or study program, moreover, Budi Luhur University has given some additions or pressures in aspect of attitude by including the attitude of virtue. In this matter, in accordance with the philosophy of Budi Luhur University : Intelligent and Virtuous. Intelligent without virtuous is intelligence without being based on virtue will tend to be used to fool and harm others, and otherwise virtue without intelligent will become the target of crime and oppression of others. Furthermore, intelligence can be meant intellectual intelligence and Virtuous can be interpreted as emotional and spiritual intelligence (Drs. Djaetun, HS).

The attitude of Virtue which will be included in the achievement of the learning process particularly in the aspect of attitude is the derivative form of the philosophy of Budi Luhur University, i.e. Virtue in the scope of attitude: Sympathy, Empathy, Compassion and Love. It is appropriate to the goal of learning or education process in Budi Luhur University, i.e. to make Intelligent and Virtuous Humans with the education pattern of sharpening, fostering and compassion which applies the virtue curriculum.

With the basis of the KKNi, the SN DIKTI 2015 and the Philosophy of Budi Luhur University, in this matter it is the attitude of virtue, and furthermore as the form of interpretation in the curriculum i.e. by including the attitude of virtue (sympathy, empathy, compassion and love) in achieving the aspect of attitude in the achievement of the study program learning process which is brought down into the achievement of learning each subject and can be also interpreted further in the achievement or output of tasks per subject. The goal of placement or addition for the attitude of virtue in the achievement of the study program learning process and subject is to provide further the specific characteristics of graduate of Budi Luhur University either from the aspect of attitude to the form of output of tasks or activities and works which reflect the attitude of virtue.

Virtuous Concepts in Curriculum

In the technical level of curriculum design, Budi Luhur University Jakarta brings down it in the form of a joint guideline for all faculties and study programs which can enter the virtue elements in each Semester Learning Plan/RPS and can be also interpreted in the form of Student Task Design/RTM. Lecturers present the virtue materials generally and apply them specifically in the daily life as a human in the form of learning materials and contents. Moreover, the aspect of attitude with the additional attitude of virtue is interpreted in the form of outcomes or achievement of the attitude and in the form of works which definitely contain the virtue content.

Instead achieving attitudes and outcomes in the form of work, the aspect of virtue is also interpreted in the form of activities which require students to apply directly the attitude of virtue to other humans and creatures as well as the surrounding environment.

In this article we will present the description of some subjects which the final results are activities that contain the aspect of virtue, such as the attitude of empathy, sympathy, love and compassion. The Faculty of Communication Science is a part of Budi Luhur University. With the Communication Science Study Program which have four concentrations : Broadcast Journalism, Public Relations, Digital Advertising, Visual Communication Design, Tourism Communication, and Digital Media, the curriculum application with the basis of KKNI, SN DIKTI and the virtue will be carried out from the Achievement of the Study Program Learning to the achievement of subjects and per subject materials or output of subject tasks.

As the form of applying the virtue curriculum, Budi Luhur University makes provisions for the technical and measurable application as follows :

1. There is content of virtue in achieving the learning process or per subject in aspect of attitude.
2. It is brought down into the presentation of subject materials or discussion at least two meeting times
3. It can be brought down into the output of task which reflects the context of virtue.
4. It enter into the student assessment component (aspect of attitude) totaling around 25%.
5. It also includes the list of reference on the virtue books in each semester learning design.

Result and Discussion

Berbudi luhur / Virtuous Values globally

Berbudi luhur/Virtue is human behavior that is guided by values, norms and culture of Indonesia in accordance with the state ideology of Pancasila. The founders of Budi Luhur Cakti Education Foundation have applied the virtuousness concept as a means of strengthening students' attitude. The important things that an intellectual generation must have is intellectual and virtuous intelligence known as emotional, social and spiritual intelligence.

Application of Virtuous Values in Achieving the Learning Process

In the context of applying the virtuousness curriculum is to provide the achievement of the learning process in each subject. In the Communication Science Study Program, Faculty of Communication Science has 13 semester credit units/SKS for the general basic subjects (MKDU), 70 semester credit units for the compulsory subjects of communication science, 54 semester credit units (SKS) for the core concentration subjects (for each concentration), 12 semester credit units (SKS) for the specialised

subjects of the communication science and 13 SKS for the specialised concentration subjects (in each concentration).

An example for the compulsory subject for communication science is the subject **Intercultural Communication**;

➤ **Description of the Subject:** The subject discusses the relationship between communication and culture, it aims at learning intercultural communication in the context of Indonesian situation and cultural factors that underline and influence communication process. Some study topics: the basic concepts of intercultural communication, intercultural perception, verbal and nonverbal communication in intercultural communication and how to become intercultural humans in the contemporary era of globalization.

➤ **Achievement of Subject Learning**

Aspect of Knowledge: Students understand and comprehend definitions to intercultural communication, the components of communication and culture.

Aspect of Attitude: After accomplishing the subject, students are able to choose a sense of intercultural tolerance, mindfulness attitude, so they will become intelligent and virtuous humans.

Aspect of General Skill: Students are expected to be able to understand and comprehend the basic principles of intercultural communication, analyze and accomplish important problems and issues in the intercultural interaction.

Aspect of Special Skill: Students can implement theories, models and concepts of intercultural communication in their daily social life, understand cultural differences in the local and global level which finally can make them the intercultural humans.

The following example is the core concentration subject, i.e. **Documentary Film Production** :

➤ **Description of the Subject:** Through the study, students are expected to be able to understand documentary concepts and approaches as communication works. Moreover, they can carry out research, planning and production of documentary works as a journalistic activity in the scope of media communication and journalism.

➤ **Achievement of Subject Learning :**

Aspect of Knowledge: Students can have the understanding of concepts in documentary production as the journalistic works.

Aspect of Attitude: Students can have an attitude of social sensitivity to problems that occur in society and have an attitude of cooperation, empathy and sympathy with other students in the documentary learning process.

Aspect of General Skill: Students can carry out research and plan documentary production works in the form of production design.


Aspect of Specific Skill: Students can produce and apply the concepts in documentary production as the journalistic works in the scope of communication.

The above two subjects are a part of subjects in the Communication Science Study Program that entirely have entered the methods of applying the virtuousness curriculum in achieving the learning process of the subjects.

Application of Noble Virtuous Values in the Subjects

The next phase is the application of learning outcomes or the achievement of the subjects which become the achievement per meeting or lecture. In this phase, it definitely can become a variety of contents and outputs which are the application of the virtuousness curriculum. An example is the **Inter-Cultural Communication;**

Courses	Charge	Outcomes
Inter-Cultural Communication	Learn about tolerance in accordance with Indonesia's diversity.	Cultivate an attitude / sense of solidarity, respect for differences, love and nationalism.
	Process of adaptation, assimilation and cultural acculturation.	To grow attitudes and knowledge of the processes of cultural formation in a society

Activity	Documentation
Field Study in Cetho Temple , Karanganyar, Central Java.	

Field Study in Intercultural Communication to be growth love attitude among fellow students and tolerance attitude, affection to learning object in the field and different cultural.

The next example is the Documentary Film Production course, for Broadcast Journalism concentration;

Courses	Charge	Outcomes
Documentary Film Production	How to be plan and create audio visual works base on research from the probelm to evocative public concern	<p>Attitude aspect : empathy and sympathy the with problem arround and a sense of belonging the culture Indonesian.</p> <p>Produce audio visual works with theme local wisdom</p>

Activity	Documentation
<p><i>Documentary Film Works theme Local Wisdom</i></p>	 <p>The top poster, 'ARISAN BERUK', features a bowl of rice on a woven mat with the text 'PROJECT LIBURAN' in the top right and 'FIKOM Link' in the bottom left. The bottom poster, 'PENJAGA LONTAR', shows a man in a white headband reading a book, with the text 'DIRECTOR: PRADANA KUSUMADIRECTOR OF PHOTOGRAPHY: AGUSNO PRAMESWARIA' and 'EDITOR: BANZEM M ALI ADMA' at the bottom.</p>

For courses from the concentration of Visual Communication Design, one of them is **Visual Identity;**

Courses	Charge	Outcomes
Visual Identity	Understanding the identity of an object, pouring it in a representative visual work. Training an open attitude and empathy with the needs of the community	Students are able to design visual languages through symbolism and imagery which can later be applied as an element of branding from companies, organizations in the community.

Activity	Documentation
<i>Outcome works design logo</i>	

In the level of University, there are subjects carried out together from different study programs. The lectures are in the form of community service, i.e. Real Work Lecture. The essence of the program is the community service program as the form of applying subjects conducted by students in groups across different study programs to community in some period of time. Is a form of community service activities by students with a cross-scientific and sectoral approach at certain times and regions. With KKN, it can foster and apply the attitude of morality among students and the community.

Activity	Documentation
<p><i>Kuliah Kerja Nyata 2017-2018 (Community Service Program)</i></p>	

Conclusion

The curriculum has a close connection with the learning process. The curriculum relates to the learning materials that must be learned, while the learning process relates to how to learn the learning materials. The curriculum becomes a guideline, direction, or sign for the implementation of the teaching and learning process.

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Reading as a Problem Solving Task and Digital School

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

The renewed school idea, understood as an open learning space that allows students to develop life skills, imposes an overview of reading in a new epistemological and cultural dimension. Within the European educational systems, among the skills considered essential, a prominent role is occupied by the reading comprehension and mastering the language. In fact, reading literacy is a cognitive life-skill that structures thought and reasoning (Olson, 1994) and is perhaps the most precious of the goals to achieve in today's school. As well, the use of technologies, digitalization, now structural components of the curriculum, have put exactly the reading into the center of the learning experience. The general aim of this work is to investigate, through a bibliographic detailed study, the relationship that there is between digital reading and textual comprehension skills. Methodologically we will proceed with the systematic review, with particular attention to the sources to identify and evaluate the relation between the reading and the digital support. Digital devices can favor active, reflexive, conscious reading, as they provide dynamic reading functions that support the adjustment of the analysis processes. The idea is to value these references, emphasizing the essential role of reading comprehension. Resuming the cognitivist matrix, reading can be seen as a problem solving task where the reader is called to use the information contained in the text, using his declarative and procedural knowledge, to construct more accurate hypothesis about the meaning of the text. The perspective considered in this work identifies the "know how to read" as the tool to become a more experienced navigator of contemporary society with the ability to discern, interpret, and propose.

Keywords: reading literacy; reading comprehension; problem solving; digital reading; life-skill.

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Introduction

The reading literacy is a distinctive element for social inclusion or exclusion of human being. The possession of this ability is a main aspect for the development of a real democratic conscience and for a significant participation of every citizen towards the debate of political life as well as the transformation and the renewal of the contemporary knowledge society. The acquisition of skills as: reading, understanding and interpretation of texts and of various kinds is an essential objective that every student has to acquire at the end of compulsory education (D.M. 139, 2007). The reading literacy is the training goal par excellence, it is a fundamental learning for school and extra-school life, it is essential for the knowledge in all subject areas. Actually, without a sufficient experience in this area, none can attempt to solve problems of mathematics, physics, or deal with aspects of geo-historical or political relevance (Bottani, 2011).

It is not correct to suppose that learning to read is similar to learning to walk, or to distinguish, visually, the distance and depth in the space around us; really the learning of reading is much more similar to the acquisition of math or chess game. Although learning to speak and to read is understood both as forms of linguistic development in the generic sense, it does not mean that they are equivalent forms of development. Calvani affirms (2018): “it is wrong to think that learning to read is a natural aspect of linguistic development, as the learning to speak. It is quite obvious that oral language is biologically primary in the human being, but the reading and writing literacy obviously are not” (p.16). According to Dahene (2009) the right technique to teach reading is the syllabic method, then the correspondence of a phoneme to a specific grapheme, proceeding from the simple to the complex. From learning to read to the development of reading competence, can be traced three fundamental phases which, partly, overlap. In the first phase of learning the student’s efforts are directed to the decoding operation of the graphic signs, this phase ends with the achievement of automatism. This is the moment of instrumental aspect of reading skill, it represents basic and necessary condition for every type of reading. In the second phase, the student develops cognitive and metacognitive skills involved in the full comprehension of a text and in its literal meaning, to the point of acquiring the ability to immerse oneself in reading for personal interest and pleasure. Finally, in the third phase, the student learns to distance himself from the text in order to examine it critically: the reading literacy must lead the reader to develop a critical sense towards what he has read. In this phase the reader is able to differentiate his point of view from that of the author, to analyze the text, to evaluate it in content and form, to make comparisons between different points of view. Moreover, it is important to remember that for a long time the school has been interested in new technologies as tools to improve the learning experience of students. As a consequence, reading and reading mode deal with profound changes.

Reading and understanding

Nowadays we speak of reading, meaning it as a dynamic process that develops throughout life and which does not take place only in formal learning contexts, but also in non-formal and informal contexts (OECD, 2009).

Reading literacy is a transversal cognitive competence that structures thinking and reasoning (Olson, 1994), it is perhaps the most precious achievement that schools intends to pursue, in fact scholastic institutions have accepted to respond to the challenge of acquiring competence (Spencer & Spencer, 1993; Perrenoud, 1997; Pellerey, 2004).

The school of competence is a school that has the duty to train competent readers if it wants to act as a formative place oriented to the development of democratic participation, in order to favor the improvement of an equitable social growth.

The original definition of reading literacy, formulated starting from the studies of the International Association for the Evaluation of Educational Achievement (IEA-Reading Literacy Study, 1992) and of the Organization for Economic Co-operation and Development (OECD-International Adult Literacy Survey, 1994, 1997, 1998) was integrated in 2009 with motivational and metacognitive aspects.

Currently reading literacy means “to understand and to use written texts, reflect on them and engage in their reading in order to achieve their goals, to develop their knowledge and their potential and to be an active part of society” (OECD, 2009, p.23).

The definitions of reading and literacy in reading have changed over time, they have adapted to changes of society, economy and culture. The concept of learning and, in particular, lifelong learning, have expanded both the definition of literacy in reading and its components. Literacy is no longer considered a skill that is acquired only in childhood, during the first years of school, but rather as a set of knowledge, skills and strategies in continuous evolution, which individuals develop in the course of life, through the interactions with peers and with the larger groups they are part of.

This definition intends to overcome the notion of literacy in reading as mere decoding and literal understanding in favor of an interpretation that implies comprehension, use and reflection on written information for a variety of different purposes. This description considers the active and interactive role played by the reader in deriving meaning from the written text.

The definition also contemplates the plurality of situations in which literacy in reading plays a role in the life of a young person: from the private sphere to the public sphere, from school to work, from the sphere of active citizenship to learning throughout the life.

According to this new vision, literacy permits to realize one's own individual aspirations, whether these are well-defined aspirations, such as obtaining a diploma or obtaining a job, or whether they are less immediate objectives as to improve and to enhance the personal life of each one.

Literacy also provides the reader with the linguistic tools that modern society - with its institutions, its widespread bureaucracy and its complex legal systems - requires with ever increasing insistence.

Readers, while attempting to understand what they read and use, react to texts that are confronted in different ways.

But what are exactly comprehension and awareness in the field of reading?

Mialaret (1996), maintains that: *“to be able to read is to be able to transform a written message into a sound message following precise rules; it is to understand the content of the written message; it is being able to judge it”* (page19). To understand significantly, the reader must have an active role, decode what he reads and to plan his cognitive process, through cognitive and metacognitive strategies (Cornoldi & Colpo, 1981). Among the cognitive strategies we can find: the ability to know how to focus the words in bold, the use of dictionary to understand the meaning of the unknown terms, to take notes, to make use of the context, to synthesize, to underline, etc. For metacognitive strategies, instead, we mean the reader's ability to perceive the need for additional information and to reflect on what has been read and understood (Brown, Bransford, Ferrara & Campione, 1983), that is, to realize and to implement all those useful actions to monitor and plan the reading process. More specifically: different reading modes in relation to the purpose, slow reading, read the text several times carefully, in general put oneself in a condition of active and critical reflection during the act of reading (Morini, 2017).

In an effort to develop authentic reading situations, PISA (Program for International Student Assessment) notes the following five aspects associated with a full understanding of a text. Students must demonstrate their level of competence for each of the following aspects: identifying information; understand the general meaning of the text; develop an interpretation; reflect on the content of the text and evaluate it; reflect on the form of the text and evaluate it.

Full understanding of a text implies the activation of all these processes. It is expected that all readers, regardless of their overall reading capacity, are able to demonstrate a certain level of competence in each of these aspects.

Although the five aspects are inter-related (as they are based on a common core of skills), a good result in one of them is not necessarily related to success in others.

Some believe that these aspects are part of each reader's repertoire at every level of its development, rather than constituting a hierarchical set of skills that develop sequentially.

In order to evaluate the skills of the reader with respect to the ability to read and understand a text, it is appropriate to define, in a clear manner, the evaluation methods, the methodologies and the tools that will be used, so as to guarantee the validity and reliability of the survey.

Lucisano (1989) argues that: *“the measurements we can make have many limitations, but the possibility of defining skill models, identifying strengths and weaknesses, and comparing the student's profit with the class and national standards, constitute an indispensable reference both for research and for didactic intervention”* (page 21).

Reading and digitization

The reading competence, according to the Recommendation of the European Council of 22 May 2018 on the key competences for lifelong learning, falls within the first of the eight key competences outlined in the reference framework, that is in functional alphabetic competence. The latter, in fact, distinguishes, among the different aspects, the knowledge of reading and writing and a good understanding of the written information and therefore presupposes the knowledge of the vocabulary, the functional grammar and the functions of the language. This involves the knowledge of main types of verbal interaction, of a series of literary and non-literary texts, of main characteristics of different styles and registers of the language.

However, reading and its different modalities have changed and have evolved profoundly along with the progress of society, the pervasive diffusion of technology and the resulting cultural changes. Changes in the distribution and use of the media have also produced consequences on the cognitive level.

To define, today, what it means to be able to read and what presupposes to be a competent reader remains a very complex task, but it is clear that this concept can no longer disregard the comprehension and use of online texts and how an insufficient level of these skills becomes an element of marginalization. social, as limiting the effective participation (European Commission, 2012a, Jenkins, 2010; OECD, 2011). With the technological development are generated the new forms of textuality characterized by multimedia, that is by the integration of different codes present on the same support and, from hypertext, that is the reversal of the linear order in favor of more free and flexible reading paths, in which the reader can choose which order to follow for the use of the contents organized in blocks of text (Notti, Calenda, 2016). Hypertextuality, due to its natural openness, is based on the centrality of the role of the user and on the reticular structure of the text. For this reason, it is possible to talk about interactivity, the reader is free to choose routes to activate (Livolsi, 2011).

The definition of reading literacy, mentioned earlier, refers precisely to the interactive nature of the process, since when readers engage in reading a text, they do so by drawing on their own experiences and way of thinking, affective aspects and behavior, motivation, commitment to reading, the pleasure of reading, interest and control of strategies in relation to reading purposes (Cataldo et al., 2012). The reading activity connected to a digital text requires the reader the ability to construct personal paths much more than is required in the case of printed texts.

The ability to decipher is not, therefore, a skill that is acquired once and for all; it is a process that never ends because, once learned, it is self-reinforcing and modifying with the exercise and adapts to the various requests: it contemplates the development of other capacities such as inference and integration that they imply the existence of complex perceptual complex automatisms.

Online reading can solicit a higher cognitive load. Digital texts require to search the information distributed between a heterogeneity of links and in specific textual situations of the electronic medium: the understanding of a list of information provided by search engines or the contents published in a blog, for example, unequivocally identify a typical online reading only.

To retrieve the information useful are required to assess the relevance of the materials and to understand the hierarchical structure of the site. Integration, defined as the completion and comparison of information from various textual genres, invites similar processes, whatever the medium.

However, because the digital medium makes it so easy to cross-talk between various texts, readers are much more likely to find themselves crossing different text types in a single reading episode.

Consequently, an ability to reorder information that requires sophisticated reading skills is required.

The open nature of online publication also requires the ability to evaluate texts. Collecting information on the Internet requires the skimming and scanning of a large amount of material and the immediate assessment of its credibility.

During access and use of information on the web interact in a complex way unique operations, such as those related to navigation, others in some respects similar to those typically associated with the reading of paper and others, however, specific to the new medium, in addition to involving the processes involved in learning from the written text (Carioli, 2013).

Conclusion

At school students learn the instrumentality of reading procedure and activate numerous cognitive processes necessary for understanding. Therefore, actions that school must necessarily promote, through educational mediation, concern the improvement of comprehension processes of digital natives, which instead have in their experience mainly an instrumental reading, mostly directed at communication only, and their approach with the written text is mostly casual, involuntary, unaware. To stimulate the student to pass from a mechanical reader, who only searches explicit content, to a reader who searches for meanings in what he reads, didactic mediation should be directed towards the synthesis between two elements that are the text and the act of comprehension (Lumbelli, 2009). The main objective, for the school, is to make sure that the reader is able to search for a meaning that passes from understanding to interpretation; only later it will be possible to find emotions and evasions in reading. Reading process can be seen as a problem solving task, in which the reader is called to use the information contained in the text, using his own declarative and procedural knowledge, to construct more accurate hypotheses on the meaning of the text (De Beni, Pazzaglia, 1995). In didactic practice, therefore, it is necessary to be aware that, by approaching digital reading, modifying the medium and modality with which the message is structured, complicate understanding and that, to become competent online readers, it is not enough to transfer the skills learned in reading of printed texts (Carioli, 2013, p.43).

The student must become aware that, by improving his ability to understand and to interpret, he will be a more experienced “navigator” able to move in the sea of contemporary society with his ability to discern, to interpret and to propose.

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*Exploring The Effective Dimensions Of Engaging Students in Contemporary
Architecture Design Studios in Times Of Change*

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

The architecture design studio is the pedagogical platform for the majority of learning and teaching experiences that take place within architecture design education. The traditional architecture design studio pedagogical model, signified as 'signature pedagogy', has gradually shifted away from its conventional forms of engaging students. Since the turn of the millennium, the studio has transformed into a contemporary form of design learning and teaching space based on several factors such as reduced contact time between academics and students, changes in studio spatial typology and a change in the hierarchy of academics that are involved in student engagement. These shifts have had a major impact on the ways in which students and teachers conduct dialogic interactions with one another and perceive their learning and teaching experiences. A qualitative case study at an Australian University undergraduate school of design seeks to explore and link the components of the interaction between the different stakeholders of contemporary architecture design studio pedagogy. The research seeks to verify and extend Laurillard's conversational learning and teaching framework, to elaborate the theory and practice around contemporary design studio pedagogy. The components of the dialogic interaction between the different stakeholders form the basis for academics and students to reflect on their learning and teaching interaction informed by theoretical know-how and awareness rather than solely relying on intuition. The unpacking and understanding of these interactive components can inform design academics to adapt effective ways of engaging their students in architecture design studios.

Keywords: Signature pedagogy, contemporary studio pedagogy, conversational interaction, effective design pedagogy

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Introduction

Architecture education is centered around both didactic and dyadic forms of education. Didactic forms of delivering knowledge are the lecture systems where the students are the passive receivers of knowledge while dyadic forms of teaching engage students actively in learning activities. The architecture design studio is an educational environment primarily used to learn and teach the process of architecture design. Design education in architecture design studios is based on these dyadic forms of teaching and learning (Rogers, 1996). This places emphasis on the educators to understand their students better and the ways in which the students can be engaged effectively (Khorshidifard, 2014).

Research to date has focused more on the design studio models focusing on the interaction between the tutor and students in the architecture design studio as being a two-way interaction process – with some focusing on the coordinator and curriculum aspects. The traditional design studio model characterized primarily as a signature pedagogical model (Crowther, 2013) has transformed in a contemporary model but minimal research has been done on this critical aspect and detail of the interactive process between the unit coordinator, tutors and students in the contemporary architecture design studio pedagogy. The transitional years of undergraduate at university are critical in students' retention and effective learning (Tinto, 2002). Understanding the interactive nature of the learning and teaching process, equips the design educators with an informed approach to enable the students succeed in their learning.

1. Literature Review:

1.1. Architecture Design Studio And Its Primacy In Design Education:

The purpose of architectural education like any professional education is to create professionals suited to the demands of professional practice (Salama, 2015).

The creation of an architect is guided by three main components: professional education, then internship followed by an accreditation exam. The process of this lifelong learning profession begins with Architecture education. There are two major determinations of architectural education: 1) the education of architects to be and 2) to help create 'good, educated, citizens' (Glasser, 2000, Teymur, 2002). The architectural curriculum is constituted of three classes of educational work (Kurt, 2009, Dinham and Stritter, 1986):

1. fundamental courses on liberal arts,
2. second is about professional & environmental courses,
3. third is about 'apprenticeship' experiences that take place in the studio.

The architectural education curriculum is centered around the core subject 'architecture design' and its supremacy is verified by the design studio that is the mode to teach architecture design throughout the degree program. Over the past five centuries, architectural knowledge has been established institutionally. It is no more the scenario of an apprentice learning from a master, rather students work on their desks within the universities in classes called 'design studios' which involves the basic and traditional approach to design education as previously with experienced designers' staff working with less experienced ones (Mewburn, 2011, Glasser, 2000). Students create a design project with the guidance of a studio

tutor. The design studio pedagogy model emphasizes learning by experimenting (Kurt, 2009).

Architecture design studio teaching occupies about 38% of the entire curriculum & since 2006 in Australasia the Atelier models of studio shifted into contemporary studio models supplemented by lecture programs (Ostwald et al., 2008). The importance of the design studio in the Architecture education curriculum was supported by a survey of Academics across Australian Universities in 2007 on the relative importance of the ranges of studies where design studio was the ‘only’ area rated “extremely important” (Ostwald et al., 2008).

1.2. **Signature Pedagogy:**

The studio is extensively used in schools of design as the foundational mode of instruction and education. Such universal forms of learning and teaching, which are associated with particular professions, have been researched by (Shulman, 2005) and come to be referred to as signature pedagogies (Crowther, 2013).

If one wants to comprehend why professions develop as they do, studying their professional forms of preparation will reveal that insight. In doing so, Shulman, (2005) argues that certain characteristic forms of learning and teaching will be detected, which he called ‘signature pedagogies’. These teaching types organize fundamental ways in which future practitioners are educated for their new professions. (Shulman, 2005) elaborates the stance further that *‘these signature pedagogies, the novices are instructed in critical aspects of the three fundamental dimensions of professional work –to think, to perform, and to act with integrity’* (p.52).

Crowther, (2013) elaborates the notion of signature pedagogies, as a type of learning design for a particular profession, and supports it by referencing the term by (Laurillard, 2013b) *“the best teaching ideas are most likely to be developed in very specific subject matter contexts. They have been referred to as the ‘signature pedagogies’ of a discipline”* (p. 220). Architecture design studio is the dominant environment of architectural education. It is both a physical space and a mode of engagement that integrates the physical space, experiential learning activities, problem based tasks and assessment with the teacher/student relationship (Lane et al., 2015). The studio pedagogy is defined as a ‘signature pedagogy’; a form of pedagogical practice that is only associated with the discipline and its profession (Lane et al., 2015).

1.3. **Existing Models Of Design Studio Education – Signature Pedagogical Models:**

The idea of signature pedagogy of the design studio can be traced back to the historical times when the studio started as a Master Apprentice Model (Mewburn, 2011). The students modeled the Masters behavior and approach. After this, the model shifted to the Ecole De beaux Arts model in the 19th century, where it was still master centered but entered a form of professional training (Powers, 2016). The first University model of studio pedagogy appeared with Donald Schon’s idea

of the 'reflective practitioner' that gets molded in the studio (Schön, 1984, Schön, 1985, Schon, 1987).

Table 1 Transformation of design studio's signature pedagogical model - from teacher centered to student centered

AUTHOR	MODEL/PROPOSED THEORY	TEACHING CONTEXT
Ecole De Beaux Arts (1800 – 1900's)	Master – Apprentice Model (master centered)	Master's practice
Walter Gropius (1920's)	Bauhaus Model (teacher centered)	Formal Institution of architecture
Donald Schon (1983)	Theory of reflective practice (coach- student) (teacher centered)	University studio
Thomas Dutton (1991)	Hidden Curriculum Critical pedagogy (student-centered)	University studio
Helena Webster (2004)	Critically reflective pedagogy (student – centered)	University Studio
Ashraf Salama 2015	Studio model based on Transformative critical pedagogy (student – centered)	University studio
Mathew N.Powers 2016	Self-Regulated Design Learning Model (student – centered)	University studio

The focus of design higher education across these models over time as shown in table 1, have shifted from teacher centered pedagogy to student centered pedagogy which is the need for maintaining current quality higher education practices (Webster, 2004, Belluigi, 2016).

1.4. Roles Of Students And Teachers And Interaction Process Between Them In Existing Models:

The transformation of the roles of teacher and students based on the nature of interactions between them within these models as shown in table 2 are explained as follows:

- In the Ecole De Beaux Arts model, the student followed the master's practice and worked in the atelier as an apprentice working on drawings and was modeling the master's practices (Powers, 2016).
- As design pedagogy was institutionalized within a teaching school through a taught design studio, the idea of design teachers and students emerged through

the Bauhaus (Powers, 2016). This transition resulted in the roles of this educational institutional relationship to be modified to those of a teacher and a student.

- The idea of having an explicit theoretical basis for design studio pedagogy came through Schon's (Schön, 1984, Schön, 1985, Schon, 1987) theory of reflective practice where design studio was considered an ideal model for teaching professionals to utilize reflection on action as a way to problem solve. The roles of the teacher and student developed as a coach and student respectively. One that shows, demonstrates and tells the student and develops the solution to the problem with the student through ample time and effort. But it fails to address of how the teacher can make his design process explicit to the student rather than just telling him/her what to do.
- The hidden curriculum proposed by Dutton, (1987) argued for a balance in the teacher centered approach to give a voice to the students in the design studio. To enable student's role to have the capacity to reflect and critique the work of their peers and also become a collaborator in the design teaching and learning process with their peers and teachers (Dutton, 1987).
- Helena Webster, (2004) used the student's voices to depict the three roles they saw of their tutors in the studio based on the tutor to student relationship. One being the entertainer that told historical stories and gave examples of their own work to the students – these were not interested in the students learning and interacted minimally with the students. The next called hegemonic overlord was seen as one that corrected students work, even drew for them to allow for the students to have a similar approach to the design work as theirs. The third was the liminal servant which students idealize as one being enthusiastic, understanding the student's learning pattern and perspective, having acceptability of student's individuality as a designer and gave feedback that the student could understand (Webster, 2004). This insight remarkably explains the role for an ideal tutor but the next step helpful for design academics will be to have an understanding of how this ideal role can be opted, what process to opt and how to examine their pedagogy based on the student to teacher relationship within the contemporary scenario for design teaching.
- Ashraf Salama, (2015) argued that the awareness of professional practice for students shall transform the learning experience of students as being professional colleagues in the practice and shall have ample awareness of the practice (Salama, 2015). Still the clue, missing is the actual lived experiences and voices of the students and the nature of relationship and interaction that results from such approach to design studio activities.
- The next model chosen for comparison is by Powers, (2016). The model (Powers, 2016) reveals the roles of students as ones that can contribute to their design learning through their active contribution through self-regulated learning. The role of the teacher reveals itself as one that has to design the studio objectives corresponding to each student separately. This model demands high level of subjective approach from the teacher which in the contemporary scenario of reduced time and limited contact with students isn't practical.

Table 2 Transformation of the roles of teacher and student with transformation of signature pedagogical models – further adaptation from table 1

AUTHOR	MODEL/PROPOSED THEORY	TEACHING CONTEXT	TUTOR'S ROLE	STUDENT'S ROLE
ECOLE DE BEAUX ARTS (1800 – 1900's)	Master – Apprentice Model (master centered)	Master's practice	Master	Apprentice
Walter Gropius (1920's)	Bahaus Model	Formal school of architecture	Master	Student
Donald Schon (1983)	Theory of reflective practice (coach- student) (teacher centered)	University studio	Coach/ Demonstrator	Student
Thomas Dutton (1991)	Hidden Curriculum Critical pedagogy (student-centered)	University studio	Mediator/ Collaborator	Student
Helena Webster (2004)	Critically reflective pedagogy (student – centered)	University Studio	> the entertainer > the hegemonic overlord > the liminal servant	Student
Ashraf Salama 2015	Studio model based on Transformative critical pedagogy (student – centered)	University studio	Professional Colleague	Student
Mathew N.Powers 2016	Self Regulated Design Learning (student – centered)	University studio	Designer of individual student experiences	Student that takes responsibility of his/her own learning

1.5. Shifts In Contemporary Architecture Design Studio Education And Challenges In Times Of Change:

The shift in the ways, universities in Australia in the early 2000's, designed Architecture programs informed by reduced university funding and recruitment of part - time academics created a shift in the ways the design studios were conducted (Ostwald et al., 2008). With this shift, there was an introduction of part-time sessional academics working with full – time academics (Marshall, 2012) to cater to the changed signature pedagogy in design education. While the students increased in number, the face to face time between the studio instructor and student reduced (Tucker and Rollo, 2006), and as a consequence, design lectures were embedded to supplement the design studio teaching. Part time sessional academics were employed from the industry to bring knowledge of practice in the studio teaching and learning (Ostwald et al., 2008, Marshall, 2012). In addition to part time teachers, the student cohort sizes have increased (Australian Institute of Architects, 2015) and there is a hierarchy of teaching team that is unit coordinators that conduct design lectures, recruit and manage a team of tutors while the tutors undertake design studio tutorials with the students (Pepper

and Roberts, 2016). Other factors include the introduction of the online learning media (Lane et al., 2015).

Together all these factors led to the studio signature pedagogy being shifted into a different contemporary blended model of design teaching (Crowther, 2013, Lane et al., 2015). Ostwald’s et.al, (2008) study of this shift of Architecture design studio in the Australian context revealed three studio models based on the type of studio space, media of communication and nature of interaction between the tutors and the students as represented in Figure 1 created by the researcher along with a fourth one which is an online mode of studio teaching.

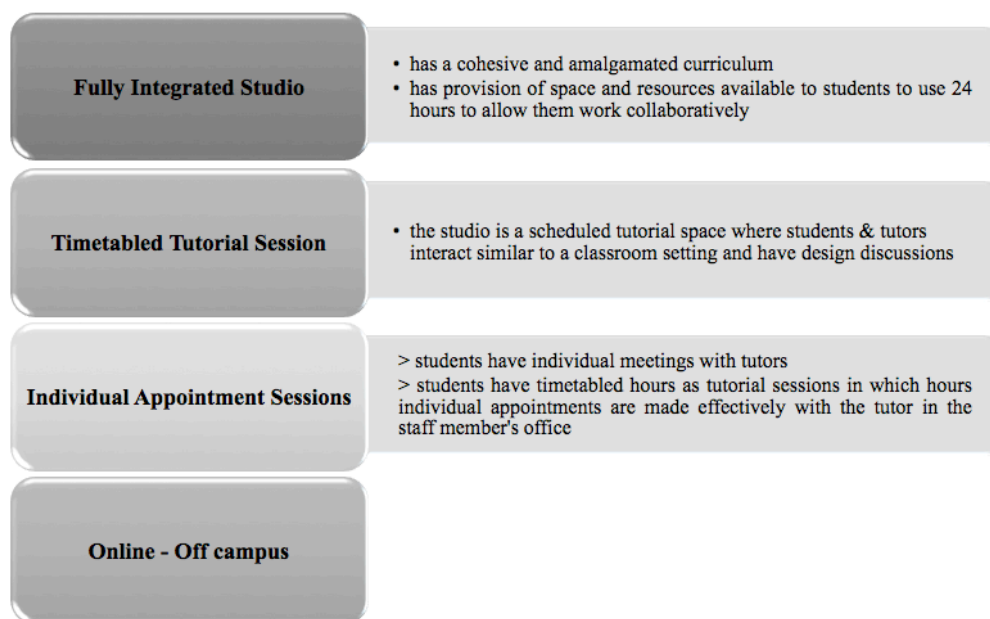


Figure 1 Various Studio Models Being Adopted in Australasian Schools of Architecture and the second one ‘Time-tabled tutorial session’ is the one relevant to the case study (Created by researcher and adapted from (Ostwald et al., 2008)

2. Research Problem And Questions:

Based on these contemporary challenges, this research project argues that contemporary design studio education requires this dual relationship as shown in figure 2, to be transformed into a triadic relationship to inform current design teaching practices (Sodersten, 1998).

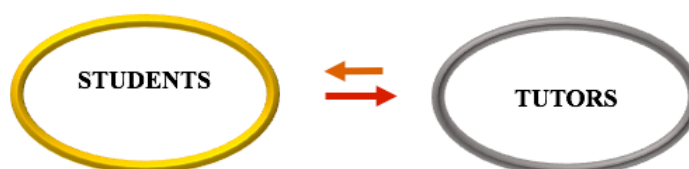


Figure 2 The simplified dual relationship between the teacher and student suggested in Signature pedagogical models

The aim of this research is to:

- portray the interaction between the design studio stakeholders’ roles in contemporary studio model;

- understand the interaction process in different learning and teaching modes between teachers and students during different stages of design project execution to inform effective learning and teaching practices in contemporary design studios; and
- to build the theory around the interaction process and the relevant learning and teaching partnerships.

Therefore, the research questions that this paper answers are:

1. How does the interaction unfold between contemporary design studio stakeholders in times of change?
2. What are the key components of interaction between these stakeholders in this evolved scenario?

3. Theoretical Persepctive Of This Research:

This research seeks to utilize the Conversational Framework as a model of teaching and learning developed by Dianna Laurillard based on the ideas of social situated learning developed by Lev Vygotsky (Laurillard, 2013a). It is a theoretical framework proposed for effective academic teaching and learning in higher education. The conversational framework will be utilized in the research in order to highlight the communication and interactions between the three stakeholders in the design studio that are, the students, tutors and coordinators.

One of the major gaps in the research according to Laurillard, (1999) on academic teaching has been in teachers being unreflective of their teaching practices. There is an absence/lack of explicit theoretical frameworks that would explain how the university academic can approach the objectives and ideals of higher education and connect these to the activities of the student and teacher to the broader structure of systems they are working in (Laurillard, 1999). There are theories about children learning and how learning occurs in non-educational contexts (Laurillard, 2013a) but clear theories about the way university design students learn and how tutors engage them in effective design learning is missing (Musgrave and Price, 2010, Oh et al., 2013, Powers, 2016).

According to Laurillard's learning theory for the conversational framework, the students must take responsibility of what they know and how it comes to be known (Laurillard, 2013a). Thus teaching can be seen as a form of a mediation of learning rather than an 'action' on the students.

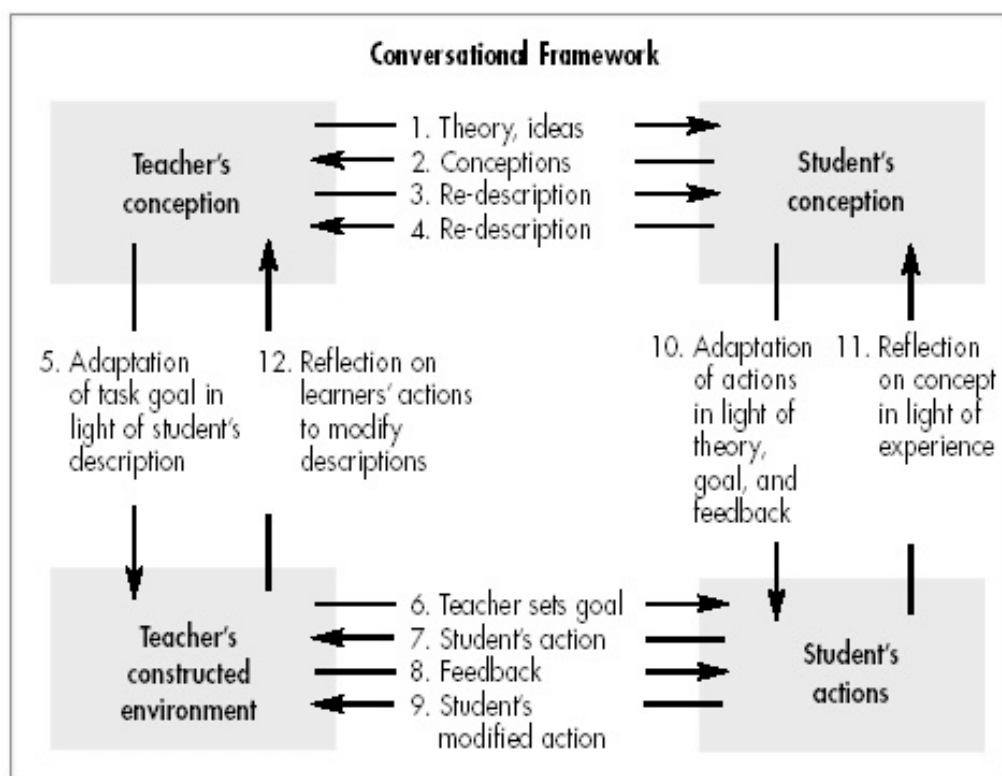


Figure 3 Conversational Framework developed by Laurillard – components of the iterative dialogue between teacher and student for learning to be possible

Laurillard's conversational framework is based on certain components necessary for the academic learning to be possible in an iterative conversational manner. The epistemology underlying the conversational framework situates learning as a relationship between the learner and the world, which is mediated by the teacher. Therefore, the teacher's constructed environment resultant of social interactions between the learner and the teacher results in successful academic learning. The components of the conversational framework are as follows:

3.1. Discursive Process:

The activities 1 to 4 in figure 3 occur in a series that relate to the discursive process which takes place between the teacher and the student at the level of the accounts of the topic goal – both negotiate in a dialogue to agree on a topic goal.

3.2. Adaptive Process:

This is represented by the activities 5 and 10 in the figure 3 of the framework which are both internal to the teacher and student, where each one adapts their actions at the task level in the light of the discursive process at the description level.

3.3. Interactive Process:

The interactive process is represented by activities 6-9 in figure 3 which occur in a series between the teacher and the student at the level of the task environment, the teacher sets the task goal, the student aims to achieve the goal by producing action on task, the teacher gives

feedback related to the task goal on the student's action, the student modifies the action in light of the feedback by teacher.

3.4. **Reflective Process:**

The reflective process is again internal to both student and teacher represented by activities 11 and 12 in figure 3, each reflects on the interaction occurring between them at the task level in order to re-describe their understandings at the level of the descriptions of the topic goal.

Interpreting the ideas of the conversational framework in the context of design learning and teaching can be seen as an interaction occurring between the three stakeholders that take place in the studio and lectures respectively in the following ways and environment:

1. verbal, (studio and lectures both)
2. graphical (studios)
3. online medium
4. and the non-verbal form of communication unfolding as non-verbal cues of the play between the teacher and students as a form of the hidden curriculum (Dutton, 1987) of appointing roles.

Considering the contemporary architecture design studio learning and teaching challenges and shifts in signature pedagogy in times of change, the dual relationship between the teacher and student as a result of two-way dialogic process can be expanded to incorporate the hierarchy of the teaching team i.e. the unit coordinator and tutors interacting with the students to extend Laurillard's framework to create a learning and teaching model for contemporary architecture design studio education as shown in figure 4.

According to (Laurillard, 2013a), this conversational framework that describes the learning process is intended to be applicable to all academic learning situations, subject areas and topics.

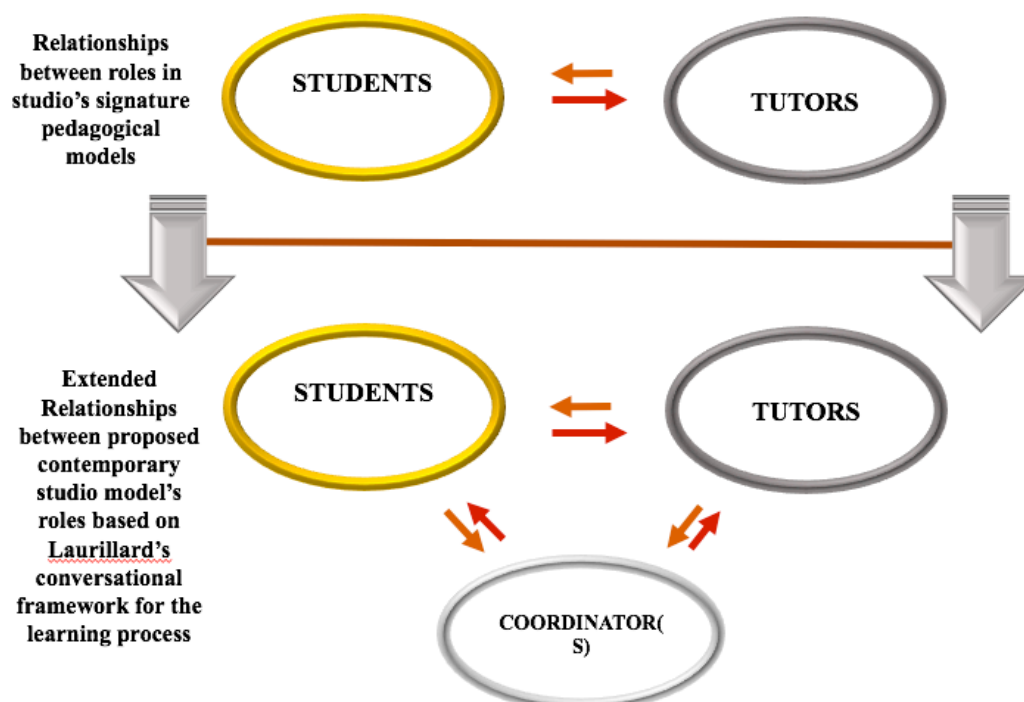


Figure 4 Transformation of the studio model from signature to the proposed contemporary model - incorporating the third member and extended relationships based on Laurillard's conversational framework

4. Methodology:

To address the research questions this research implemented a case study technique, employing qualitative case study research methods for data collection and analysis.

Yin, (2013, 2009) offers an explanation for the use of case study research which suits the choice of this methodology in the design of this research. He describes that case study research shall be opted when: 1) the researcher asks 'how' and 'why' type questions, 2) the investigator has minimal or no control of the participants' actions and 3) the focus of the research is on a contemporary phenomenon in contrast to some historical event or phenomenon (Yin, 2013, Yin, 2009). In educational research, the case study is utilised for mapping different qualitative ways, in which participants experience, understand and perceive social phenomena regarding learning and teaching around them (Merriam, 1998).

In this research, different ways in which the stakeholders perceive their respective interactions in relation to other stakeholders in design studio learning and teaching were explored. The case study chosen for this research project is a well-established Architecture School's undergraduate program at a major university in Australia. The design school follows one of four contemporary studio models implemented in Australasian schools of Architecture (as shown in figure 1) and has a four years long architecture degree program followed by one year of masters. There are around 130 - 180 students in each undergraduate year and a team of six to ten tutors is employed with a single unit coordinator to conduct

architecture design unit/subject for each respective year. The students undertake an academic design project with the tutors in the studio tutorials which mirrors a real-life architecture design project and the unit coordinator provides design knowledge through lectures. The investigation of this case study and its implications may not be relevant to other forms of prevalent design studio models. Data was collected through face to face, open ended interviews from a purposive sample, representative of each stakeholder of the architecture design subject, from first to fourth year. The particular number and characteristics of participants for each stakeholder group from first, second, third and fourth year, for the purpose of data collection was as follows:

- one unit coordinator who was teaching the second semester,
- two tutors: one experienced tutor teaching for more than two years and 1 novice tutor that has up to or more than one year but less than three years of experience to see the difference of perceptions.
- four students in their second semester of architecture design subject.

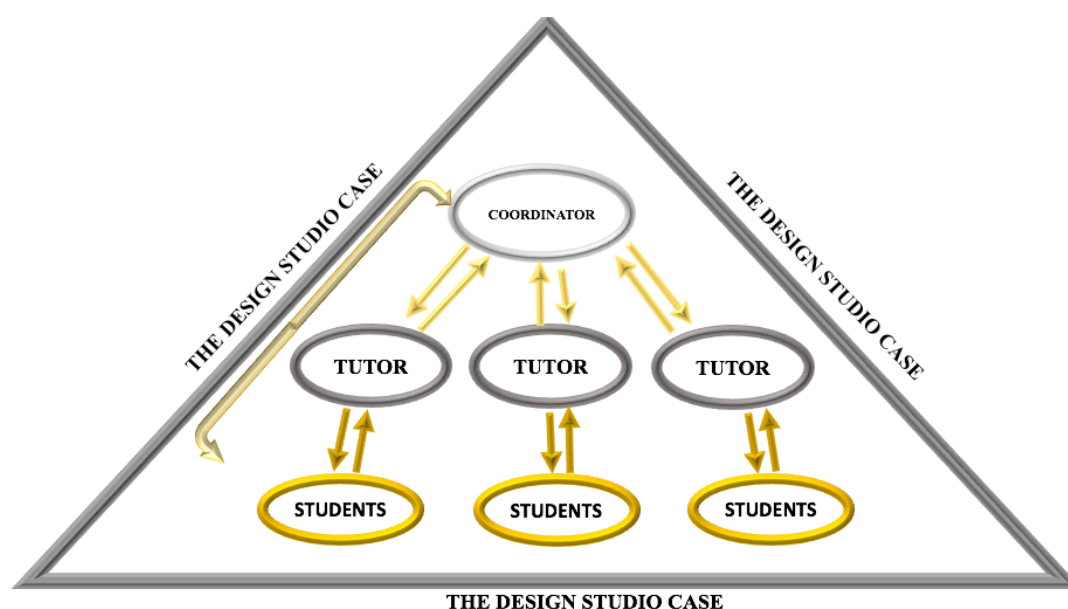


Figure 5 The undergrad design studio case - Hierarchy of the learning community within the QUT's case study

In the context of design lectures and studio tutorial learning and teaching settings the interviews in this research were intended to capture the retrospective accounts of:

- students' perceptions of their experiences of learning and teaching interactions in design lectures and studio tutorials in relation to the tutors and the unit coordinators.
- tutors' perceptions of their experiences of learning and teaching interactions in design studio tutorials in relation to the students and the unit coordinators.
- unit coordinators' perceptions of their experiences of learning and teaching in design lectures and studio tutorials in relation to the tutors and the students.

5. Analysis And Findings:

All the interviews were audio recorded and then transcribed. Each undergraduate year's members' data was collected and analysed using thematic analysis. Four data sets were created related to each undergraduate year from first to fourth year. Each data set included the unit coordinator, tutors and students for each respective year. These data sets were then used for analysis to observe repetitive patterns regarding the perceptions of collegial communication forms in the design studio and lecture settings.

Thematic analysis (Boyatzis, 1998, Braun and Clarke, 2013) can be used to analyse qualitative data. It is an analytic process that includes searching for recurring ideas (patterns) referred to as themes within a data set. Thematic analysis allows researchers to use diverse or varied information in a systematic way. This systematic information in turn develops and heightens their understanding and interpretation of accounts about events, organisations, social situations and people (Braun and Clarke, 2006). Putting it in the words of Jason and Glenwick, (2016) '*people attribute meaning to a particular phenomena in interaction with those around them in context-specific settings* (Jason and Glenwick, 2016)'.

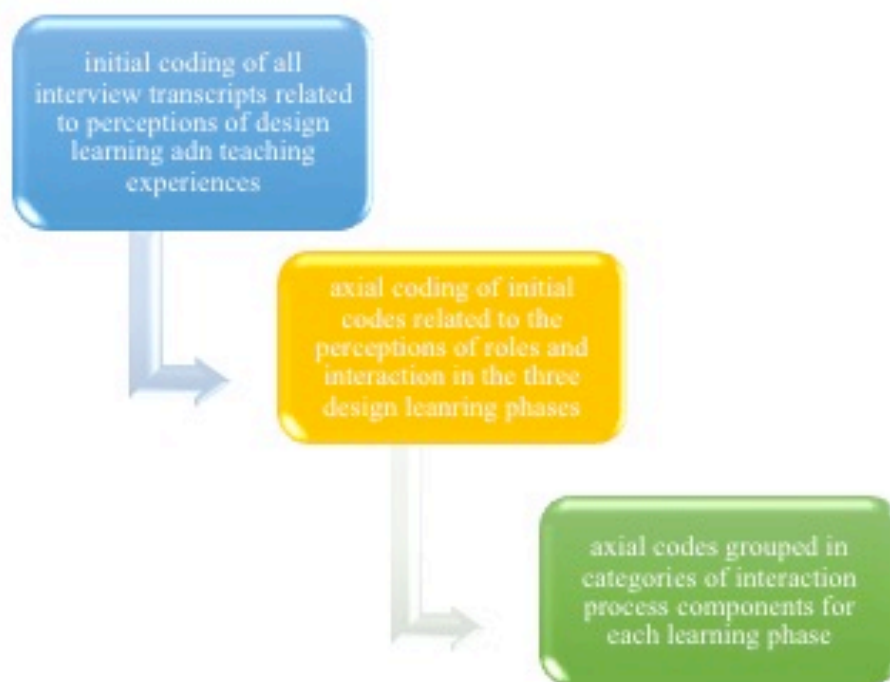


Figure 6 Process of thematic analysis

The process of analysis as shown in the figure 7 was as follows:

Step 1: Coding Process – initial and axial coding:

Each data set was subjected to initial coding. Then the initial coding was compared across data sets and further processed through axial coding.

Step 2: Axial coding and categorisation:

The axial coding of the initial codes led to the creation of categories in the form of concepts related to the design learning and teaching phases, roles of stakeholders and their respective interactions. Each stakeholder described the roles relevant to three different stages within the design learning process and the changed nature of interaction along the three phases. This led to the creation of three themes related to one another.

One theme related to the phases of the design learning process of the design project, the second theme was based on the adaptation of the nature of these roles to the learning phases and the third described the changed nature of interaction between the stakeholders in different learning and teaching settings as shown in figure 7.

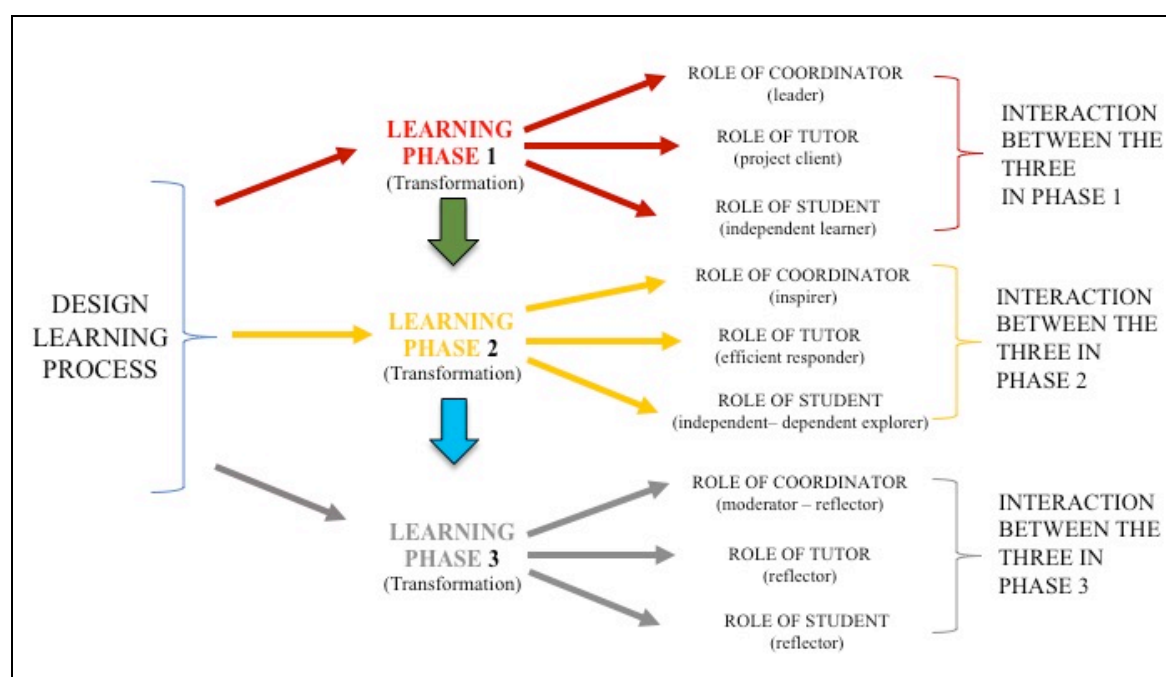


Figure 7 The correlation between the 3 phases of the design learning process, the adaptation of roles and the interaction process

Step 3: Emerging themes:

Thus, three interrelated themes that emerged from the data are as follows:

Theme 1: Design learning process:

This theme describes interactions of the design learning process which unfolds as three overlapping phases within the execution of an academic design project:

- the first phase relates to the clarity of the unit/subject's structure, intent of project, curriculum, cohorts (number and nature of students and their prior assumed knowledge), responsibilities, learning and teaching objectives/goals, learning needs/challenges. This phase sets the foundation for the design process to unfold with clear expectations regarding the aims, structure. This phase requires setting clear and

distinct learning and teaching partnership goals between academics and students.

- the second phase relates to the development and iteration of design through collaborative efforts between students and teachers. This phase is successful if the learning and teaching partnership is built on clear learning goals. The students learn effectively by working on their design projects while being inspired by their teachers who enable the students find their individuality. The collaboration between learners and teachers has to be established on trust and honest feedback to build confidence among learners.
- the third phase relates to the transformation of thinking and self-efficacy of the students and academics. This is when the students consolidate the learning in the previous two phases and present their work to complete the design project's final goals.

Theme 2: Role construction:

The nature of the roles of each of the unit coordinator, tutor, and student, described as their identities and responsibilities constructed the theme on roles. The nature of these roles gets adapted to the three phases of the design learning process. In each learning phase, the roles of the three stakeholders along with the interaction process is shown in figure 7.

Theme 3: Interaction Process:

The interaction process between the three key members is the ways, when (time), where (modes of learning and teaching) and how (unfolding of the process) the three members interact with one another in a sequential manner. The ways mean the modes of interaction, the when means what learning phase along the sequential path, the timing of how what happens and the how determines the factors or steps or activities which constitute the interaction process. The interaction process for design is iterative in nature, builds incrementally on the last interaction and has several layers of process components. Some are evident through tangible actions and some are the ones that take place within the individuals minds or intellectual capacity themselves and are intangible.

It is impossible to imply that a given set of sequential step by step processes can objectively define the interaction that exists between key members, but is representative of the perceived, experienced and lived examples of the context or the case study under research. The interaction between the stakeholders is cyclical, repetitive and incorporates the changing needs of each learning phase. The interaction gets adapted in different ways in each learning phase by having some differences across the learning phases in the interaction process components - with some new steps along the interaction and some similar to Laurillard's framework but not an exact replica of the conversational model for each phase or set of members interaction.

➤ **Interaction cycle in design learning phase 1:**

The first design learning phase is about setting the foundation for the design

project so consensus of the learning objectives among the three key members is vital. The cycle of learning and teaching design begins with the interaction between the coordinator. The concepts eminent in interaction here are conveying conceptions, revealing conceptions, interpretation, reflection, explanation description, and querying to make conceptions clear.

The coordinator introduces the unit content through the lecture mode to the students and finally the tutors set major goals with the students in tutorials.

LEARNING AND TEACHING PHASE 1 – INTERACTION PROCESS COMPONENTS

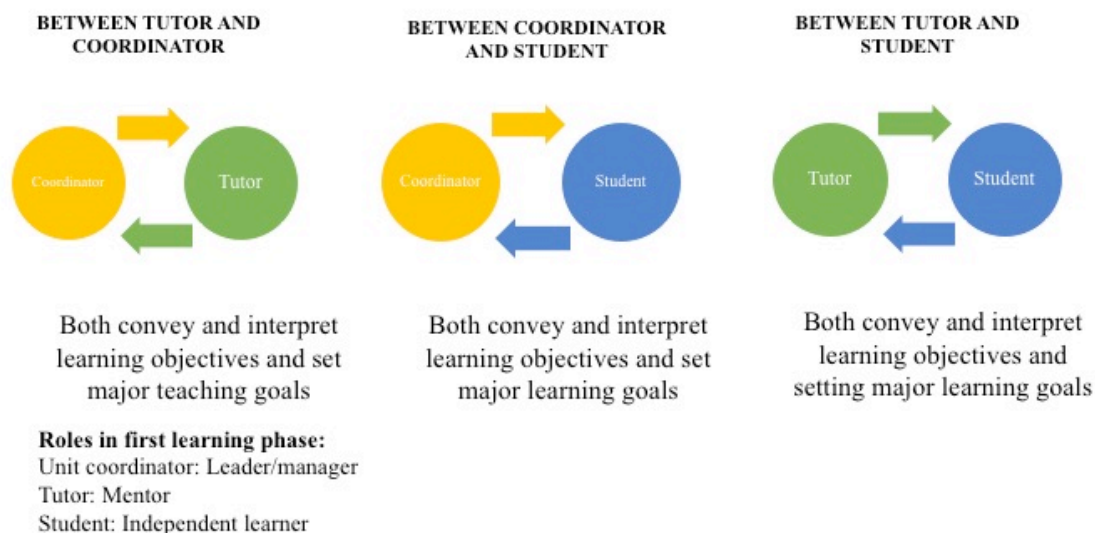


Figure 8 Design learning and teaching phase 1 - interaction process components

➤ Interaction cycle in design learning phase 2:

The interaction cycle in learning phase two begins with the unit coordinator and the student, followed by interaction between tutor and student and then among students themselves. The components of interaction build around setting sub goals that feed off the major goals set in phase 1 and then execution of those sub-goals by the unit coordinator telling explanatory stories of architectural precedents to students to inspire them, the tutor mentoring the students to not only complete their own work through the action feedback reflection cycle of teaching but also through acting as a life coach by providing students the support they need and to build a sense of community by encouraging students to interact and share ideas with each other.

LEARNING AND TEACHING PHASE 2 – INTERACTION PROCESS COMPONENTS

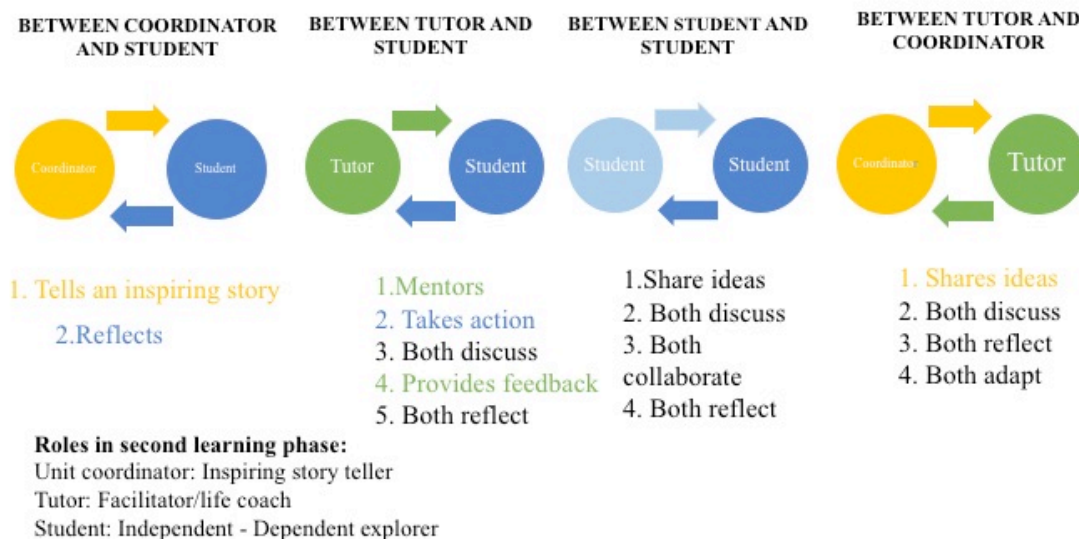


Figure 9 Design learning and teaching phase 2 - interaction process components

➤ **Interaction cycle in design learning phase 3:**

The cycle of interaction in phase three begins with the tutor empowering the student through interaction to present their final project with efficacy. The leading to student presentations which enabling them to reflect on their learning in the entire project, followed by interaction between tutor and unit coordinator to assess, moderate and reflect on the students’ progress as a measure of their own teaching success.

LEARNING AND TEACHING PHASE 3 – INTERACTION PROCESS COMPONENTS

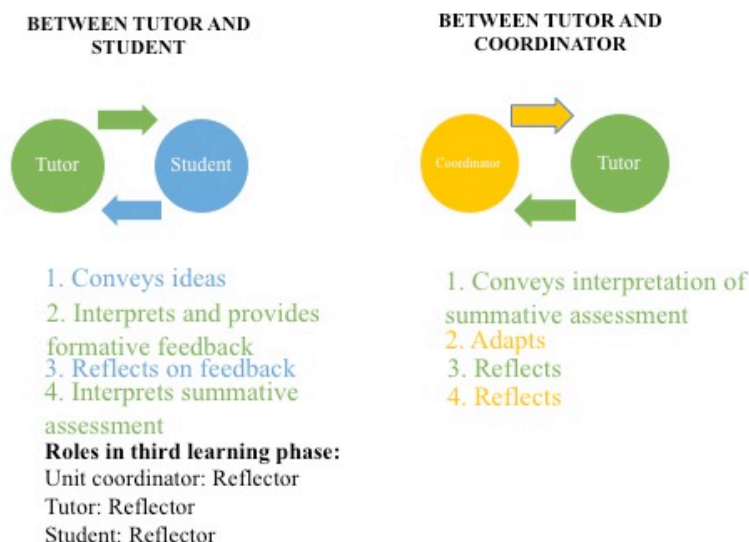


Figure 10 Design learning and teaching phase 3 - interaction process components

6. Conclusion And Way-Forward:

The research findings have provided a foundational ground for understanding the extensive interactional relationships between these three stakeholders for the contemporary design studio pedagogical model. The understanding of the shift in the design learning process for a design project, the variation in roles and the

relevant interaction process between the roles sheds light on the complexity of knowledge that surrounds the nature and modes of the communication platforms between the coordinators, tutors and students. This highlights the demands of effective communication considering the contemporary design studio learning and teaching settings and their inherent challenges.

The unpacking of the interaction process enables academics to dissect, reflect and understand their own communication patterns objectively and to improvise the dialogic process to benefit students through effective engagement - under changed circumstances of architecture design learning and teaching in times of change. In times where effective interaction equates to efficient response and is one of the major answers to effective design pedagogy.

The findings show that Laurillard's framework can be extended to incorporate the conversational forms of interaction between the stakeholders and that the framework gets adapted along the design learning and teaching phases in different ways with some differences. It also brings out the importance of understanding the aspects of the learning and teaching interactions to foster clarity, collaboration and positive transformation among students, tutors and coordinators in a similar learning and teaching setting for design education to be effective.

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***Content Design of Virtual Game for Elementary School Students:
Using Circle and Compound Graphics of Circle as an Example***

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Asian Conference on Education 2018
Official Conference Proceedings

Abstract

Recently how to take advantage of digital games to enhance learning has become a hot issue in the area of learning technologies and attracted much attention. If being well designed, we cannot only help students immerse themselves in the learning activities, but also promote students' motivation. Hopefully, we can improve students' learning outcomes. Thus in this study, we, through the design of the scenario-based learning content, aimed to transform students into leading roles in the virtual game. In this designed environment, students could play as a warrior to save the victims via problem solving in the critical situations and, meanwhile, could learn about the knowledge of circle and compound graphics of circle. Moreover, to achieve this end, we have implemented the situated mathematics digital game system used on the tablets, based on situated-learning theory, Van Hiele geometric thinking level theory and ARCS teaching mode. In order to make sure that the content design and learning process of virtual game are suitable for the study and the needs of the target users. Researcher adopted the questionnaire survey, including the feeling of using a situated digital game and views on the use of situated digital games to learn mathematics. This study is in stage of system development. We hope we can build a better content design of virtual game by the result of questionnaire to enhance students' knowledge and learning motivation of mathematics.

Keywords: Digital Game-Based Learning, Situated-Learning, Van Hiele Geometric Thinking Level, Compound Graphics of Circle

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Introduction

Today, for the “Digital Natives” elementary school students who live in the internet generations, their growing processes are often accompanied by 3C. Furthermore, visual stimulation floods video websites and digital games, so they become one of the main activities for children to use internet (Taiwan Child Welfare League Foundation, 2015). Successful game experience is from the accumulation of continuous practice. Learn is also like this. If the students have enough practice and interesting situations immerse them in it, I think it will provide positive support to learning motivation and learning outcomes.

The evolvement of students’ geometry abilities will influence each other with different grade. When students face graphic area problems, they will ignore the situation and how to extract and apply relevant mathematical knowledge. Then, this mistake may cause students to be computer robots. It’s difficult to build a solid mathematical concept for students and they will gradually lose motivation to learn (Confrey, 2012). As a result, circle and compound graphics of circle is hard to learn for elementary school students, they may use formulas directly without the understanding of compound shapes’ composing (Chen, & Wu, 2016). Hoffer (1977) thinks learning geometry concept will influence each other with improving the ability of visual consciousness. If we can improve students’ visual consciousness, they will learn better in geometry. ZHANG (2009) also proposes if students operate geometry activities (translation, rotation, superposition, decomposition and recombination), they will get basic geometric concept better and calculate the area of compound graphics successfully.

In order to solve students’ problems in circle and compound graphics of circle, this research plan to interview the present teachers in elementary school first, then discussing with research group and expert teachers, then literature review for proper teaching material design and teaching method application. At last, this research aims to develop a scenario-based learning with digital game. Specially, the scenario is adapted from “Taiwanese folk tales - Aunty Tigress”. We expect students can not only increase learning motivations and achievements in mathematics, but also understanding local culture by the scenario-based learning with digital game.

This study will discuss related literature sequentially, then, presenting the teaching content design of the situated mathematics digital game and the outcome of requirement analysis. At last, we will discuss the future usability of situated mathematics digital game teaching mode.

Current Study

Digital game-based learning is a combination of “learning content” and “digital game”. Prensky (2001) expected to combine learning contents with digital games to make the same or better learning outcomes than traditional teaching. In recent years, Game-based learning has become an important research topic in learning (Cheng et al, 2013; Hsu, Tsai, & Wang, 2012). Liang, Chen, Young, & Yang (2008) indicate that we can live up to educate children while having fun with them at the same time and increase their learning achievement by game-based learning. Some related researches show many benefits in learning with game, for example, Chen (2009) had used the

game on teaching of addition and subtraction. She found that the experimental group had reached a significant level in mathematics learning; the traditional group didn't seriously answer questions. YE(2017) considers games can stimulate students' intrinsic motivation, and overcome the difficulties to open the books to find the answers.

Brown, Collins and Duguid(1989) considers knowledge is produced by the interaction with learner and situation. For the sake of this, the best way to learn is in the specific situation (Lave & Wenger , 1991). Chan, & Lee (2005) think situated mathematics teaching is an important teaching approach. They advocate provide meaningful situational questions, let students explore various types of math problems in the situation. The more mathematics questions close to students' real live, the better students can achieve effective mathematics learning. Furthermore, situated teaching through the text, actual or simulation let students entering math problems and get the mathematics concept by interaction and experience. Scott (1985) thinks storytelling in the classroom can promote a relaxed and intimate atmosphere. The students in the atmosphere, their mind will up and downs with the characters. At the same time, it will initiate students' learning interest and generalization concept.

Netherlands mathematics educator Van Hiele (1986) proposed the geometric thinking level theory, divided into five levels. It follows as visualization, analysis, informal deduction, formal deduction and rigor. These levels are sequential and Van Hiele (1986) thinks learner should be taught from a level to the next level. Then, their geometric thinking level will be already from the basic level "visualization" to the top level "rigor". Wu (1995)'s research illustrated most of the elementary school students in lower grades are belong to level 1 "visualization", the middle grade students almost can be level2 "analysis", and the high grade students are approximately between level 2 "analysis" and level 3 "informal deduction". Therefore, this research will apply Van Hiele geometry development theory in the game design and follow the geometric concept to arrange operational activity sequentially. We hope students can upgrade their geometric ability by this game.

The curriculum policy of primary and junior high schools in Taiwan, geometric unit is considered very much. According to the curriculum's synopses of Ministry of Education, the five topics in the mathematics learning of Nine-Year Curriculum include "Number and Quantity", "Geometry", "Algebra", "Statistics" and "Connection" (Ministry of Education, 2009). Under this structure, there are three teaching objectives of students' geometric curriculum in the elementary school as follow: 1) Level 1 (The first and second grade): students can grasp the preliminary concept of Number, Quantity and Shape, 2) Level 2 (The third and fourth grade) students gradually acquire the abilities of knowing the geometric property by operating, 3) Level 3 (The fifth and sixth grade) students can know the geometric property of plane and stereo figures and understand about calculating area or volume. For students, conservation of area is the basis of area learning. However, when the fifth and sixth grade students solve the problems of area, they are still effected by visual sensation. In other words, only the figures slightly rotate, it will effect students' conservation concept (Tan, 1998). Tan (1998) indicated that, area instruction should be divided into three parts: Form the concept in conservation of area, establishment of the area measurement concept and training of area estimation ability. When students solve the problems of the area of compound graphics, teachers should stimulate them

to think about the strategy of “split, combine, shift and fill”. Thus, students will learn the geometric concept more complete (Confrey, 2012). Wu (2016) also figures that if students use the strategy of “split, combine, shift and fill”, they can round-off the compound graphics of circle. By the strategy, the compound graphics of circle will be easier figures. At the same time, the process will improve students' confidence and accuracy.

Method

This research aims to develop a scenario-based learning with digital game, which is based on situated-learning theory and Van Hiele geometry development theory, taking the sixth grade math “Circle and Compound graphics of Circle” unit as an example to research and discussion. Specially, the scenario is adapted from “Taiwanese folk tales - Aunty Tigress”. We expect students can not only increase learning motivations and achievements in mathematics, but also understanding local culture by the scenario-based learning with digital game.

In order to make sure that scenario-based learning content design and learning process of virtual game are suitable for the study and the needs of the target users. This study adopted the questionnaire survey (5-point Likert scale), including two parts the feeling of using a situated digital game and views on the use of situated digital games to learn mathematics for a total of 30 questions. The 5-point Likert scale questionnaire ranges from 1 (strongly disagree) to 5 (strongly agree). Each part of the questionnaire has 13 positive questions and 2 reverse questions. Researcher invited 24 students in northern Taiwan who are the same grade with target students to interview by questionnaire. As showed in Figure 1, there are 14 males (58%) and 10 females (42%) included. All of participants are between eleven to thirteen years old.

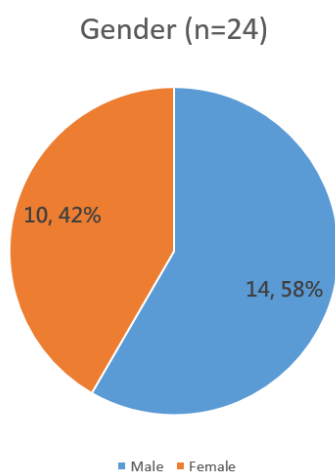


Figure 1: Gender Distribution

Results

In the research stage of system development, we expect to design a digital game teaching that meets current student needs and preferences. we have conducted questionnaires from one elementary school in Hsinchu, Taiwan. For the following were on the questionnaire of views on the use of situated digital games to learn mathematics and the feeling of using a situated digital game to analysis. The results of this formative evaluation questionnaire will be described as follows. The overall

positive question of this questionnaire is on average 4. This shows that the students' feeling about this situational digital game and view of applying it to learn mathematics are both satisfied. In the feeling of using a situated digital game part, a total of 15 questions, including 13 positive questions and 2 reverse questions. The average of the positive questions is 3.5~4.3, and the average of the reverse questions is 1.5~2. This shows that the student is satisfied with this situated digital game, but there are still some parts that need to be adjusted. Among them, "Overall, I think it is very helpful for me to learn circle and compound graphics of circle through this situated digital game." get the highest score (4.3) of this part. In the views on the use of situated digital games to learn mathematics, a total of 15 questions, including 13 positive questions and 2 reverse questions. The average of the positive questions is 3.7~4.5, and the average of the reverse questions is 1.7~2.1. It indicates that students are positive about using this situated digital game to learn mathematics. "I feel that I can use the tablet to learn math, which makes me feel very novel" get the highest score of 4.5 in this section.

Conclusion and Future Study

This research explores the impact of integrating virtual games into situated mathematics teaching, on the learning outcomes, attitudes, and analytical problem-based skills of the sixth grade students in the circle and compound graphics of circle. In order to design a digital game teaching that meets current student needs and preferences and integrates situated-learning theory, Van Hiele geometric thinking level theory and ARCS teaching mode, we conducted this survey. According to the results of this formative evaluation questionnaire, students are quite satisfied with the integration of virtual games into situated math classes. Among them, they are even more novel about the teacher's use of stories and tablets to take math classes. The game design of this study incorporates Van Hiele Geometric Thinking Level and Taiwanese folk tales - Aunty Tigress, Students focus on the learning and challenges of circle and compound graphics of circle units in a step-by-step level arrangement and interesting story scenarios. Most students agree that this situated digital game system is fun and helpful for their learning.

This research is in the stage of system development now. However, the research team will follow the result to improve the game based on students' learning requirement and preferences as well as feedback and discuss with the expert team to help students improve their learning. Looking forward to the future, this situated digital game teaching can be applied to more units or other subjects, so that technology is no longer just the object of student play, but also the best assistant for growth.

Acknowledgements

Thanks for the grant support from the Ministry of Science and Technology (MOST), R.O.C., under the grant no. 105-2511-S-007-002-MY3.

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***The Study on Teaching of Practice Skills in a Drum Set at Suan Sunandha
Rajchapat University, Bangkok, in Thailand 4.0***

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

This research's objectives were (1) to study on teaching of practice skills in drum set at Suan Sunandha Rachapat University, (2) to study problems and obstacles in teaching of practice skills in a drum set at Suan Sunandha Rachapat University and (3) to study guidelines of teaching of practice skills in drum set at Suan Sunandha Rachapat University. The sample group that was used in this research was students in a field of Music who studied "Practice Skills in Drum Set", year 1-3 of Suan Sunandha Rachapat University. Data collection by using interviews and then these data were used for analysis. The summary of this research was 1). An overview of teaching of practice skills in drum set at Suan Sunandha Rachapat University was found that the teaching status in all aspects were excellent, the teaching was planned systemically, 2). An overview of Problems and obstacles in teaching of practice skills in drum set at Suan Sunandha Rachapat University was found that most problems and obstacles mainly occurred from the students i.e. learning attention, study hour and financial aspects, 3).An overview of guidelines of teaching of the practice skills in drum set at Suan Sunandha Rachapat University, Bangkok, Thailand was found that the teachers should pay more attention to the students both in learning and consulting in various aspects. They should have teaching technics to increase motivation with more interesting and should arrange teaching with modern styles in accordance with Thailand 4.0 policy.

Keywords: Teaching, Practice Skills in a Drum Set, Suan Sunandha Rajchapat University, Thailand 4.0

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Introduction

Thailand in the present day, Music is one of subjects, which was assigned at all levels of education. It was accepted that music was both science and art, Vaha Lataivittaya (2011, Online) said that music was both science and art. It was science because it could be proved and was realistic.

Suan Sunandha Rachapat University has admitted students since 1980, starting from teacher profession courses in Higher Education Certificate, 2 Years Continuous Study Program in 1986, and admitted students in 4 years course with major of music in 1987, after that this was developed into Liberal Arts majoring in music, and then to Fine and Applied Arts majoring in music in 2006. In present day, the major of music curriculum was improved in accordance with the Institutes of Higher Education's standard criteria during the curriculum improvement plan in 2011. Studying in major of music, apart from studying in theories, music skills were also taught too. One of music skills was Western Music Skills in Drum Set. To success in study on a major of music, it was very necessary to understand in skills of music instrument playing and music theories, for creating good works or correct music performance, and for establishment of major of music's standard. This research was to study teaching of practice skills in drum set for finding out problems and obstacles in teaching of practice skills in drum set at Suan Sunandha Rachapat University including guidelines of teaching of practice skills in drum set at Suan Sunandha Rachapat University. The sample group of this research was students majoring in music who studied Practice Skills in Drum Set year 1-3 at Suan Sunandha Rachapat University. To develop the course of Practice Skills in Drum Set at Suan Sunandha Rachapat University into standard in accordance with the Institutes of Higher Education's criteria and corresponding to the university's goals.

Objectives

1. To study teaching of practice skills in drum set at Suan Sunandha Rachapat University.
2. To study problems and obstacles in teaching of practice skills in drum set at Suan Sunandha Rachapat University.
3. To study guidelines of teaching of practice skills in drum set at Suan Sunandha Rachapat University.

The Scopes of Research

This research was studied in students majoring in music who studied Practice skills in drum set year 1-3 at Suan Sunandha Rachapat University.

Basic Agreements

This research would study teaching of practice skills in drum set only at Suan Sunandha Rachapat University.

The Expecting Benefits from the Research

1. To understand teaching of practice skills in drum set at Suan Sunandha Rachapat University

2. To understand problems and obstacles of teaching of practice skills in drum set at Suan Sunandha Rachapat University
3. To know guidelines of teaching of practice skills in drum set at Suan Sunandha Rachapat University

Literatures Review

In the study of teaching of practice skills in drum set at Suan Sunandha Rachapat University, Bangkok, in Thailand 4.0, the researcher studied on the related documents and researches in the following aspects:

1. Concepts of teaching
2. Knowledge in drum set
3. Methods of teaching practice skills in drum set
4. The results of the related researches

Summary, Discussions and Suggestions

The study of teaching of practice skills in drum set at Suan Sunandha Rachapat University, Bangkok, in Thailand 4.0 to know teaching methods, problems and obstacles in teaching, and search for guidelines of teaching of practice skills in drum set at Suan Sunandha Rachapat University.

The sample group, which was used in this research, was students majoring in music who studied Practice skills in drum set year 1-3 at Suan Sunandha Rachapat University. The research data were collected during 2018-2019 by interviews and were used for analysis.

The researcher collected data and they were analyzed for understanding in various aspects of data. From the data, the research's results could be summarized according to the objectives as follows:

The Research Summary

The research's results could be summarized by categorizing in various topics as follows:

Teaching

1. The Methods of Teaching

The methods of teaching drum set of the instructors could be summarized into 1) teaching in group and teaching one by one, 2) teaching with the individual instructor's method, this method would be changed and improved for appropriate to an individual student's needs and conditions of problems. However, it still contained main subject contents for each level of classrooms e.g. first year students would study contents for adjustments of their fundamental knowledge and basic drum set rhythms. The purposes and details of teaching topics of all instructors should be in the same direction, which contained 2 main topics as follows:

1. Theories of basic notes of drum set, the method of teaching by lecturing contents in the assigned topics and let the students remember essential contents and skills, by

familiarizing each other from the beginning of a class between students and instructors, and by mention to importance of theories and practices - how they were important and why each content must be learned. These were regarded as important matters attracting the students' interests and giving more precedence to the songs. In addition, the instructors also used another technic in teaching that was encouraging and admiring the students who performed well as which was assigned.



Figure 1. Practice.

Drum Set  ♩ = 100

<p>1 </p> <p>3 </p> <p>5 </p> <p>7 </p> <p>9 </p>	<p>2 </p> <p>4 </p> <p>6 </p> <p>8 </p> <p>10 </p>
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Figure 2. Exercises used in teaching.

2. Contents of drum set practices for learning, the instructor's teaching method by lecturing contents in the specified topics for the students to remember important contents of the skills and then most instructors demonstrated by playing examples in various forms in those topics. In addition, they played songs or videos related to those teaching topics. The songs used as instrument, which was complementary to the teaching, were well known and liked by the students. For videos, the instructor intended the students to observe characteristics of drum set drumming of the drummer. Using these media as teaching materials were essential parts to motivate the students to pay more attentions in learning and practicing.

In each teaching period, most teachings were planned and recorded to know the students' developments and problems, for teaching improvements appropriate to the students, and more effective.

Example of teaching plan in the first period

Details of Teaching	Hours	Teaching Activities
- Subject introduction	4 hours	- Tests before learning
- Tests before leaning		- Explanations of basic music theories
- Basic knowledge of drum set		- Details explanations, names of drum set components and their functions

Figure 3. Example of teaching plan in the first period.

2. Teaching media and instruments

From the study, teaching media and instruments could be categorized into 2 main groups as follows:

2.1. Media and instruments provided by the university such as:

- Drum sets
- Amplifiers
- Metronomes
- Boards

Media and instruments as mentioned above were very important, any could not be lacked but some of these did not match the number of classrooms, the instructors had to prepare some of these things themselves to solve this problem.

2.2. Instructors' personal media and instruments, these things the instructors had to bring with them such as:

- Music notes for drum sets
- Complementary books
- Metronomes

Teaching media and instruments must be adjusted appropriately to the lessons.

3. Evaluations and estimations of results

Evaluations and estimations of the research's results of teaching of practice skills in a drum set at Suan Sunandha Rajchapat University, Bangkok, in Thailand 4.0 could be summarized as follows:

3.1. Strategies for evaluations of effectiveness on each course by the students

Drum Set  **Basic Funk**

BY Rungkiat Siriwongsuwan



แบบที่ 1 แบบที่ 2 แบบที่ 3

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Figure 4. Exercises used in teaching.

- Evaluations from skill developments in the students, that how much their skills could be developed
- Evaluations from the “Music Band Assembly” course
- Evaluations from interviewing for the students’ feelings

3.2. Strategies for evaluations of teaching

- Presenting musical performances and provided opportunities to the students to perform their musical talents for evaluations of the results after studying throughout a semester

3.3. Reviewing effectiveness standards of the students in each course

- Presenting musical performances for all students to show

3.4. Reconsiderations and planning for improvements on effectiveness of each course.

- Searching for new songs or exercises to be used for the students’ skills enhancements.
- Analyzing defects on the students’ skills and then corrected them

3.5. Improvements of teaching

- Study and searching for new songs or exercises and let the students to play

- Study and searching for new related evolutions for using to teach skills
4. Problems status and obstacles in teaching

Problems status in teaching, from the study and interviewing the instructors, the following problems and obstacles were found:

4.1. Problems in teaching which originated from the students such as.

- Students were absent from classes.
- Students came to university late or not on time.
- Students paid no attentions to the classes and did not practice as which were assigned by the instructors.

4.2. Problems in teaching due to teaching media and instruments

- Supplementary teaching instruments were insufficient for instructors and students' requirements or lacked e.g. double pedals, stereos, Amplifiers, computers or mirrors.
- Classrooms were not soundproof enough, and then noises happened.

Results

Discussions of the Research's Results

From the research of teaching of practice skills in drum set at Suan Sunandha Rachapat University, Bangkok, in Thailand 4.0, the results were discussed as follows:

1. Methods of technics teaching and motivations

Methods of technics teaching and motivations were regarded as the importance of teaching process and activities arrangement in classrooms for the students to learn and understand according to the instructors' objectives.

The main contents were discussed in brief and in corresponding to the theories as follows:

1. Teaching by demonstrations and then let the students to practice by imitating the instructors. This method corresponded to Sukri Charoensuk (2014: p.59), who stated that learning by imitating was instinctive, natural, and it was a traditional method. This was learning by imitating the instructors. It also was corresponded to Tissana Khammanee (2010: p.330), who interpreted teaching by demonstrating as a process that the instructor used for help learner to be learned according to the specified objectives by demonstrating or doing what he wanted the learner to be learned.

2. Methods to teach technics and build up motivations, instructors would teach how to practice simultaneously with learning theories in every period. This corresponded to Narut Suttajit (2002: p. 8), who stated that musical matters composed of 2 parts i.e. musical contents and musical skills. The instructor gave the most precedence to basic musical theories learning. All students must be able to read music notes, which corresponded to Narut Suttajit (1988: p.12), who stated that skill of musical signs reading was one of the important basic skills in music study.

3. In each teaching period, the instructors would plot teaching plans every time. Mostly, they plotted teaching plans for a short period, week by week. It might have

long-term plans, which mainly depended on individual student. In the first teaching period, most instructors gave the most precedence to this period. This period would be a chance to learn each other i.e. asking the students for personal data such as ages, which schools they graduated from, their reasons for study drum set, why they liked drum set, which types of music they preferred to listen, which drummers they liked. This was a technic and method for motivating, teaching, and familiarizing between the instructor and the students for learning and teaching with more effectiveness, which corresponded to Tissanana Khammanee (2011: p.415), who stated that technic teaching was a tactic to enhance process, step, or any action to be more quality and effective. Teaching technic was a necessity to enhance teaching with more effectiveness.

4. In each teaching, most instructors gave exercises to students to practice, which corresponded to Boonchom Srisa-ard and Nipa Sriapiroj (1988: p.20), who stated that exercising was an activity that helped learners to review knowledge and understanding, and practice to use knowledge in any situation, increase experiences in those lessons broader and deeper, get more skills. They might exercise in classrooms after understanding the lessons or after schools such as at homes or both. In addition, the instructors suggested the students to practice every time when they had free time because music was a skillful subject, which needed practices for being skillful, which corresponded to Sukri Charoensuk (2001: p.116), who stated that music was a matter of skills related to practices.

5. In the beginning of each teaching period, the instructors would motivate the students on those lessons by using psychology, mentioning to the importance of the lessons and their impacts on the students, or motivating by playing music for the students to listen. Teaching with music notes, which the students were familiar to, or they could play or let the students watch concerts or performances of their favorite artists. These would be motivations for interesting teaching, which corresponded to Tissanana Khammanee (2011: p.474), who stated that knowledge and knowledge applications such as psychology of learning, methods and various technics in each teaching situation helped make teaching was interesting, joyful and lively, and helped the learners to learn easily, conveniently, quickly, smoothly and happily, which corresponded to Daldy Max F. (1993: pp.60-63), who briefly stated that attentions made motivations. Selecting songs, which were appropriate to the musicians or matching with their imaginations was one of the good methods to create motivations. Another motivation creating, which the instructors used in teaching was encouragement. Admiring students who could practice well in which the instructors had assigned corresponded to Walberg (1984: p.22), who stated that reinforcement was a very important activity for learning. Walberg had collected the researches from 1970-1983, around 3,000 topics, he found that reinforcement was an important component which affected learning most. There were 2 types of reinforcements i.e. positive reinforcement and negative reinforcement. Positive reinforcement focused on making the learners to know what they did correctly and they were acknowledged and praised e.g. admiring with wordings (good, skillful, excellent, splendid etc.)

2. Teaching media and instruments

Teaching media and instruments were categorized into 2 main parts:

1. Teaching media and instruments those provided by the university e.g. drum sets, stereos, music note stands, which corresponded to Rungkiat Siriwongsuwan (2018, pp.86-94).

2. Teaching media and instruments that the instructors took to the university by themselves, were those supplementary instruments, which were not available at the university, and needed to be additional teaching media for the students to understand the lessons easier, which corresponded to Srimongkol Thep-re-nu (2002: p.192), who stated that teaching media meant the media, which were used in teaching for making teachers and students well understood what they transferred to each other, and they were in accordance with the objectives of teaching.

3. Evaluations and estimations of the research's results

From study of the research, the evaluations and estimations by the instructors could be categorized into the following topics:

- 3.1. Measuring from developments of the students' skills
- 3.2. Measuring from the "Music Band Assembly" course
- 3.3. Measuring from interviewing the students



Figure 5. Measuring from developments of the students' skills

Those mentioned above corresponded to Orawan Bunjongsillapa (Khantasiri), (n.d., p.69), who stated that in evaluation of the children's progressions, the teacher should evaluate both in concepts and skills, and should do continuously to know the children's effectiveness in each classroom, which would help setting up plans for the next lessons.

Suggestions

1. Reviewing and planning for improving effectiveness of each course
 - 1.1. Searching for new songs or exercises to be used for enhancing the students' skills
 - 1.2. Analyzing defects on the students' skills, and then corrected them
2. Improvements of teaching

- 2.1. Study and searching for new songs or exercises and let the students to play
- 2.2. Study and searching for new related evolutions for using to teach skills

Conclusions

This research in qualitative research. The summary of this research was

1. An overview of teaching of practice skills in drum set at Suan Sunandha Rachapat University was found that the teaching status in all aspects were excellent, the teaching was planned systemically.
2. An overview of Problems and obstacles in teaching of practice skills in drum set at Suan Sunandha Rachapat University was found that most problems and obstacles mainly occurred from the students i.e. learning attention, study hour and financial aspects.
3. An overview of guidelines of teaching of the practice skills in drum set at Suan Sunandha Rachapat University, Bangkok, Thailand was found that the teachers should pay more attention to the students both in learning and consulting in various aspects. They should have teaching technics to increase motivation with more interesting and should arrange teaching with modern styles in accordance with Thailand 4.0 policy.

Acknowledgements

The research was conducted under the policy of Suan Sunandha Rajabhat University in promoting and enhancing the faculty members' potentials in term of research. The budget was allocated research and development Institute and granted to researchers qualified. The researcher would like to express my grateful thanks to Suan Sunandha Rajabhat University the research and development Institute and more importantly, All of faculty members of the music division.

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Status of Traditional Thai Music Education in Thai Universities

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

The study of Thai music in the past was in oral form of Residence-style music education or called "The House". When the House is very famous, they may have the opportunity to be recruited as part of an ensemble of any top noble royal palace, who regularly hosts the band at their own place. This opportunity is to be an honor for the House. The period between 1857-1932, is the golden age of Thai music. Since 1932, when administration change in Thailand was influential, the administrative power and regime were transformed into the democratic regime. The constitution became the most powerful law from the absolute monarchy regime and the cultural popularity shifted from the royalty. The government then established a school of music, the College of Dramatic Arts, and introduced Thai music into the university curriculum. The Thai musicians in the Residence-style music education were fading away under the rising new Institution, which was training the musicians in the "School-Student" system. Nowadays, many universities have begun to offer Thai music as a major course of study and have expanded rapidly throughout the country. These problems over the curriculum by departing from "Thai music," from the listening and nurturing the culture into the lives of the Thai people. This article is an introduction to the teaching of Thai music from the past to the present, the current situation of the Thai music, the problems of teaching Thai music in universities, and the solutions to these problems, which are sustainable.

Keywords: Thai music in Education, Thai music in university, Thai Education

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The Development of the Thai Music Education

The study of Thai music in the royal courts in the past was divided. Since the Ayutthaya period (1350-1767), the selected ladies of the palace were divided into three categories: high class, middle class and ordinary class. The status and the opportunity with the education of the three categories vary. The high class ladies, such as the daughters of the King, were born and educated in the Royal Palace. They practice both manners and etiquettes. Their studies are the various types of embroidery, knitting, cooking, and even the teachings of Buddhism. Teaching would be terminated after they can read and write. Then the adult ladies will choose who are doing good and which ones can continue. Then they bring them to the inner court section, where they receive a pension depending on their duties. The main duty of the court ladies at that time was only for the royal palace. There is a wide range of studies, but the first is Writing and Literature. The court ladies will learn how to write and compose poems. As a court staff, they work on a regular basis in the imperial court. Advanced studies are learning music and dramatic dance, called Lakorn-nai. To be selected to enter these studies, they are often chosen as intelligent at a young age, because these studies are difficult. The learning and practice of these studies in dance and music take time before they are ready to entertain the palace people.

Whereas, the music education for the common people is training for theatrical performances, such as theatrical plays and puppetry. The music that is played is not very difficult for the audience to focus on and understand the story. The emphasis is on beat, dance or chorus. The education is a residence-host form that covers both music and dance. Income comes from the hiring of the host to play on various occasions, both sacred and secular. There is a Thai Music House in every community to entertain the community, and teach music to the children in their own communities and create their own disciples to continue and maintain the core of their music. In the Ayutthaya period, communication between the communities was rather difficult. People during this period communicate and travel by long boats and/or on foot. Larger communities have more people practicing the art of music and dance.

This teaching style and schooling continues until the Rattanakosin period (1782-present) by the community-based Music and Dramatic Arts, but there are more forms of entertainment. In addition, the new music style called Pleng Sepa in the reign of King Rama 3, in which the role of the Pipat (a Thai traditional band) began performing concert music. People listen to the Pleng Sepa, which is a narration with verse. Sepa is the narrative form of storytelling but switching to the music of Pipat.

Pleng Sepha started to gain popularity quickly, causing the birth of many houses around Bangkok (Phra Nakorn), including the Pipat of the royals and the noblemen. These musicians learn musical instruments from their teacher and followers must have faith and confidence as well as practice so that they can play a key role in earning for their houses. When their house become famous, they will have the opportunity to become a band for high-ranking palace royalties, who regularly host concerts in their own palaces. It is an honor for the Thai Music House to dream of going to the palace as a master, because it would make for them a very comfortable living.

King Rama VI, who reigned in 1910–1925, upheld the education of dance and drama during his reign. His Majesty the King founded the school called Pran Luang High School that was inherited from the Royal Military Academy under the royal patronage, to conduct education as an example in the country. The idea came from the public schools in England. The educational management of Pran Luang High School focused on the teaching of Thai music, western music and dramatic arts. Students must study common subjects. It is the first institute of music and dance education in Thailand. Upon graduation, students of Pran Luang School have the status and role as students under the patronage of the Royal Thai Chamberlain, who serves close to the King and as an artist in the Department of Arts. It made the period between 1857-1932 the golden age of Thai music that flourished in the teaching and learning system of the Royal Department of Music and Dramatic Arts and the educational system in the same way as foreign countries.

Later in the reign of the 7th King, a school of Music and Drama was established, which later became the College of Dramatic Arts, using the same teaching style as the royal school. There are three levels of admission to the elementary school. Graduates of the sixth grade receive a diploma in basic music and dramatic arts. If students want to continue studying, they will study for another three years to get intermediate music and dramatic arts diploma, which is equivalent to upper secondary school. At the end of the intermediate class, students can study for another two years. Most of the graduates at the advanced level are often taught in the field of dance, which have been established in various regions of the country and some of them work as artists in the Department of Fine Arts.

Music in Thai's Democratic Period

In the early stages of music education, there was no bachelor degree at that time. The Naval Music Academy recruited students who are talented in Thai and Western music at the end of elementary school (6th grade) to play recreational music for governmental offices and for the general public. In the early stages of Thai music, Thai music was taught in the form of a closed society for students to spend their free time. Teachers are invited from government agencies such as the Fine Arts Department and teachers from the famous music houses to train. Later, Thai music was established for higher education, so that various musical societies in the universities could meet and perform Thai music as an activity that has continued up to the present day.

Until about 1970, M.L. Pin Malakul, the Secretary of the Ministry of Education at that time, foresaw the beginning of a serious music instruction in the secondary school curriculum in 1960 (BE 2503), and instructed the curriculum of music instruction in the secondary schools and in the Department of Teacher Training to be considered.

At present, Ban Somdet Chaopraya Rajabhat University offers high school diploma programs. By 1979, it has become the first teacher training institute in Thailand. The undergraduate program majors in Thai music and followed by the International Music major program. Later, the undergraduate program of the Teacher's College began to be taught in major provinces around the country. For the music courses in the university, a general education in Thai Music History is the first stage, and Thai Music Practices was offered as a selection.

In 1977, when the demand for school music teachers increased, Chulalongkorn University opened the undergraduate music program, majoring in Thai and Western Music. The system of learning is Thai music theory and practice with other undergraduate studies. Teachers and students provide hands-on experience to students. The faculty members are Thai professional musicians. The ambition of the students is to graduate as a teacher of Thai music. At that time, around 1973, the University of Education, Srinakharinwirot University launched a two-year program of music education to complete a bachelor's degree.

For Thai musicians, they have a lot of talent because they can take part in musical performances, including ceremonial and ritual events. It was found that in that period, there are still many bands in the community able to feed themselves, and encourage children in the community to apply as students. As a result, there are more children demanding to enter the educational system than professional musicians and attend regular classes. Entering the education system, their qualifications can be packaged into becoming a public school teacher. However, university music courses is degraded in musical skill improvement because in the university curriculum, the students are required to study ordinary subjects and other specialized subjects.

The Change of Thai Music Education System (1988-2018)

The demand for Thai music graduates is growing. Many schools lack music teachers. Most of the music teachers want to enter only the big school for career development. Most institutions receive no more than 15 students on a score-based system. The proportion of general studies to music is three to two in general. Most candidates with Thai music skills achieve the intermediate level from the School of Music and Drama, which is not good in general studies and much less than those who study western music from a school with a good foundation in general studies, and who are more selective than Thai music candidates. On average, 15 students major in Thai music to 10 in Western music.

When the demand for Thai music graduates is high, they produce less. Universities cannot proceed to increase the number of students. They have limited space, as well as the inability to set up integrated faculties. Many universities tried to solve this by founding the Faculty of Fine Arts, with a guideline for producing music graduates but using the concept of producing graduates as professional artists. The Faculty of Fine Arts teaches the Arts. Music and Performing Arts, in accordance with the university's ability. Some colleges with a Faculty of Arts are covered by Silpakorn University. The Faculty of Arts and the Faculty of Architecture are not under the Faculty of Fine Arts. And Thai music was opened under the Faculty of Arts. Later, the Faculty of Music was opened, but there was no curriculum in Thai music.

The opening of music courses with the Faculty of Fine Arts and the Faculty of Humanities made the old Thai university's aspirations disappear. The universities, that are clearly defined as a university, such as Chulalongkorn University and Thammasat University, focus on law. Mahidol University focuses on medicine. Kasetsart University focuses on agriculture. Silpakorn University emphasizes on arts. Srinakharinwirot University and Rajabhat University focus on the production of teaching students. Every university is comprehensive and open to extend, and many courses are overlapped.

Although Thai music is becoming more and more popular in many universities, it only focuses on the qualifications or training of teachers who need a degree. The foundation of Thai music comes from the practices in training. The emphasis on training the traditional Thai musician's skills is divided into other subjects such as English, the Thai language, and social studies. Thai music studies is majored in the same way as other majors. They must follow the course of the university, but is not in the matter of practicing skills. Therefore, the practice of Thai music skills is less. Other basic subjects must be taught in accordance with the curriculum set by each university.

Later in the year 1990, Mahidol University launched a master's program in the field of musical cultures. Many universities have begun to offer Thai music as a major and have expanded rapidly throughout the country. There are also many master's and doctoral programs. The program includes music education, ethnomusicology and musicology. This is an option for those who want to study at a higher level, but not Thai music performance which is the root of Thai music. Problems over the course is also caused by the growing disappearance of Thai music and Thai ceremonial culture as the Thai's way of life. Many music graduates do not have the proper Thai music skills.

"Thai Music Criteria" was created by the Office of the Higher Education Commission (OHEC) in 1990. The criteria is classified into 12 steps, based on basic music to advanced music and also classified by instruments, which currently are not being brought to force the educational institutions with Thai music majors seriously.

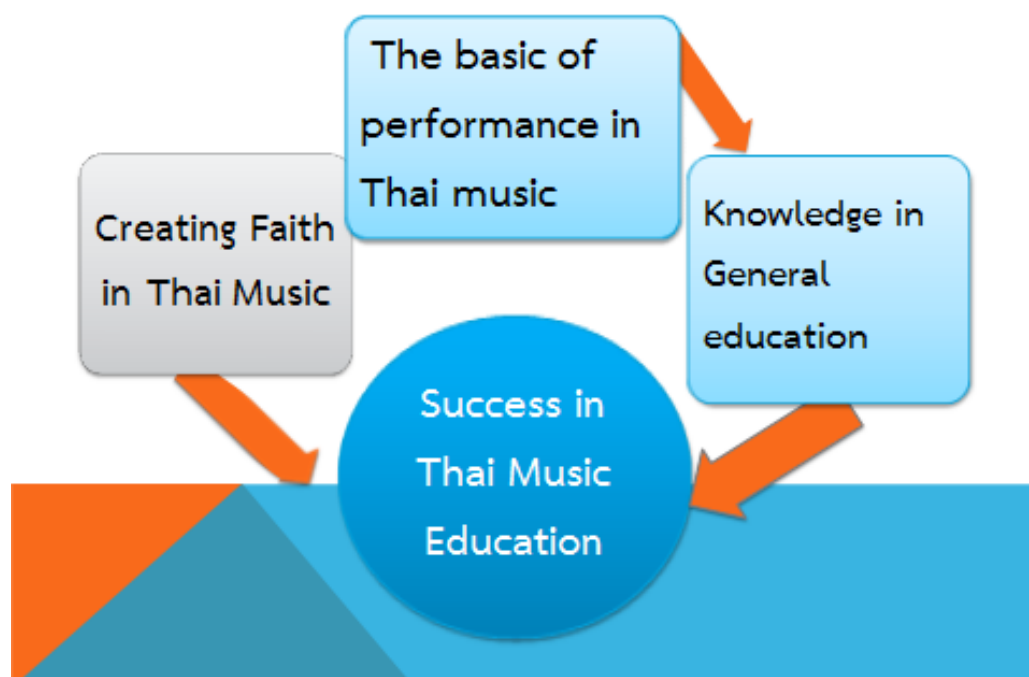
Concluding the problems of learning Traditional Thai music today

1. The Thai music program is unnecessary.
All courses are focused on the Thai teacher. The course overlaps. Even if the Thai teacher's music course is successful, not every student cannot get a place at the available positions. Some provinces lack Thai music teachers because very few, if not no one, can pass the test.
2. Low Number of FTES (Full Time Equivalence of Students)
Normally, the number of students must be 8 students per teacher, and if it is a university level, it must include a teacher who has completed a doctoral degree. Back to the main problem, the cost of studying a doctorate is quite high. At present, each university is focused on providing scholarships to teachers who want to study. Those who are not teaching must pay their own tuition fees. When this teacher graduates, there is no more demand to study and run the course at this level.
3. Number of students is not equal in each university.
Major universities are more prestigious than some of the lesser-known universities, which receive less than capacity almost every year. When there are less students, the university has to solve the problem of teaching. By the way, every music teacher does not have the aptitude to teach in every subjects and the income of the faculty is not enough to hire the need of a specialist

teacher. And if the teacher's workload is reduced, this will impact on the salary scale.

4. Scholarships are waived such as in universities with a good income. For example, universities with income from hospitals or from the land's rent. This draws competent teachers and students from remote areas. This affects the quality assurance in each institution and leads to the closure of the faculty in the future.

Ways to solve the problem



1. Establishing Thai Music Foundation

Although this may be difficult because the current basis of Thai music is not the same in each institution, there are many Thai music teachers who are better off than the ones from small schools. The solution is to train Thai music teachers throughout the country continuously. The training should be under the standard Thai professional music, in order to allow the teacher to have a similar background and students will be able to develop the same foundation basis.

2. Inputting the other academic cultures such as English to the teaching process

The disciplines should provide students with more knowledge. At the same time, these other knowledge has to be integrated into the knowledge of Thai music.

3. Building up confidence in Thai Music

It is difficult however because nowadays the way of Traditional Thai music is not part of the Thai society already. At present, Traditional Thai music students only need to be teachers to ensure that they are not unemployed upon

graduation. There are teachers who do not have confidence in Thai music. When they go to work, they cannot build up their belief. Therefore, the creation of Thai music faith is difficult, time-consuming and has to be done in accordance with various policies. Whether it is mass media must be important to Traditional Thai music. Not showcasing Thai music only by focusing on the novelty but more on disseminating its own unique aesthetics and knowledge. Nowadays the channel of the Traditional Thai culture is very limited. Without these things, believing in Thai music can be difficult.

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***Digital Technology Use of Teachers and Students and Their Perceptions of
Technology Integration into English Curriculum in Thailand***

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

In this digital age, many CALL scholars have affirmed the leverage of digital technologies and social media to access a multitude of authentic online resources. Moreover, technologies can increase students' motivation, their learning outcomes and make teaching and learning more constructive and engaging. However, no research to date has explored digital technology use of students and teachers and their perceptions about technology integration in Thai education. In response to a widespread call for teachers to incorporate digital technologies into curricula, this descriptive study investigated how English language in-service teachers and students at a Thai private university use digital technologies for academic and non-academic purposes. The study also explored their perceptions of technology incorporation into English curriculum. The study's objective is to raise the awareness of practitioners, researchers and policy-makers to create innovative technology-enhanced language learning activities to develop students' digital literacies. It is widely accepted that digital literacies are essential skills to survive in the age of emerging digital technologies. For data triangulation, the findings derived from five sources including teacher and student surveys, teacher interviews, student focus group discussions, class observations and artifact review. The findings revealed that teachers and students felt positive with technology integration into the classrooms, but some hurdles and discrepancies were discovered. The students were more skillful in using more and various types of digital technologies and social media than the teachers. Overall, this study will fill a gap of literature on digital literacies, teacher education and technology-enhanced language teaching and learning in Thailand.

Keywords: digital technologies, teachers' and students' perceptions, Thailand

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Introduction

The leverage of Web 2.0 digital technologies is widely accepted, and many scholars have called for new literacy teaching and learning approaches. Digital technologies have exposed students to a broad range of authentic online resources and have empowered them to create digitally mediated texts (Paesani, Willis Allen & Dupuy, 2015) in a gigantic globalized community. In response to evolving digital technologies and new definitions of literacies in an era of digitalized globalization, a plethora of new literacy studies (Dudenev et al., 2013; Eshet-Alkalai, 2004; Kessler, 2013; Kramsch, 2014; Lotherington & Jenson, 2011; Prensky, 2001, 2010; Willis Allen & Paesani, 2010) have argued for a paradigm shift from teacher-centered approaches, grammar-translation methods and communicative approaches to a pedagogy of new literacies. Prensky (2001) urges teachers to change their old teaching methods and incorporate digital tools to match with new learning patterns of digital natives. Many scholars (Baker & Jarunthawatchai, 2017; Chun, Kern & Smith, 2016; Erstad, Eickelmann & Eichhorn, 2015; Khamkhien, 2012; White, 2015) also agree that preparing teachers to teach digital literacies is urgent and crucial. Bates (2015) and Erstad et al. (2015) maintain that teachers in the cyber age require innovative teaching approaches to cope with advancing educational technologies.

In Thailand, too, social media and digital technologies play an important role in enhancing teaching and learning. Kitchakarn (2013) found that students significantly improve their writing when using blogs and peer feedback, claiming that the students develop critical thinking and autonomous learning. Moreover, Van De Bogart (2014) discovered that the LINE chat application facilitates English as a foreign language (EFL) class discussions and collaboration, and it creates a motivating and comfortable learning environment for Thai undergraduates.

However, challenges in technology integration into pedagogy are prevalent. Khamkhien's (2012) study reveals the "failure of integrating (computer-assisted language learning (CALL) in English classrooms" (p. 59), caused by teachers' insufficient information and communication technologies (ICTs) knowledge to select appropriate technological tools, large class sizes, and teaching overloads. An OECD/UNESCO (2016) study further indicates many problematic issues of Thai education, such as inadequate teacher education, lack of holistic strategies for teachers' professional development, teachers' administrative pressures, the poor infrastructure of ICTs, and teachers' lack of confidence and skills in using ICTs.

Thus, It is crucial that English language teachers should offer students an opportunity in using digital tools to enhance new literacies. Hongprayoon (2016) recommends that to address the demand of being a digital citizen following a new digital policy of Thailand called "Thailand 4.0", there is a need to raise awareness of English language teachers towards the value of integrating digital technology into their curricula. Thai educational institutions should provide work-related knowledge and technological skills for future members of the workforce. Thus, it seems necessary that future research should explore strategies that develop teachers' technological skills in applying digital technology effectively in teaching. It is also essential to spark the interest of practitioners, researchers and policy-makers in finding strategies to improve the digital literacies of Thai citizens to fulfill the goals of the Thailand 4.0 policy.

This study, which is part of the author's dissertation research, responds to a call for teachers to incorporate digital technologies into curricula. The findings are expected to raise awareness of teachers to find the value in technology integration to increase students' motivation and improve their digital literacy skills in the age of digital learning.

Purpose of the study

The purpose of this study aims at examining the problem that many Thai teachers are reluctant to incorporate technology into their curricula in spite of policy mandates that all teachers integrate new technologies into their classrooms to enhance students' digital literacies. Thus, the study's objective is to explore digital technology use of English language teachers and students and to investigate their perceptions of technology integration into English curricula. Two research questions are employed to guide the study as follows:

1. What digital technologies do teachers and students use for academic and non-academic purposes?
2. What are teachers' and students' perceptions of technology integration into English curriculum?

Literature Review

Potential benefits of digital technology integration into curricula

A number of studies have proven the affordances of social media and Web 2.0 technologies for teaching and learning. Siricharoen and Siricharoen's (2012) findings indicate that social media are the most popular media in comparison with print, television and radio for Thai youths. The authors argue that the social media have a good, powerful impact on learning of the young Thai generation. Van De Bogart (2014) integrates the LINE mobile app in English language teaching by creating a LINE group for his class as an alternative communication tool. The results reveal that the students are very responsive to LINE discussions, so they use English more.

Facebook has also been found to be beneficial in increasing writing quantity (Wang & Vasquez, 2014), enhancing class discussions (Roblyer, McDaniel, Webb, Herman & Witty, 2010), developing writing skills (Suthiwartnarueput & Wasanasomsithi, 2012), and in improving identity and peer interaction (Reinhardt & Zander, 2011). Hafner (2013) and Kessler (2013) maintain that it is crucial to incorporate technologies for pedagogical potentials in a world of social media to enhance interaction and negotiation of meaning. Roblyer et al.'s (2010) study reveals that students feel comfortable with Facebook in supporting learning communication, while the faculty members preferred emails. Wang and Vasquez (2014) report that Chinese learners improve their writing quantity on Facebook. They also have a positive attitude towards using Facebook as it offers good opportunities to retain Chinese characters, expand vocabulary and practice syntactic structures. Khamkhien (2012) found, after implementing blogs and a peer feedback activity, that Thai students significantly

improve their English language writing. Khamkhien makes further claims about the students' development of critical thinking and autonomous learning.

The leverage of iPads as mobile technology has been acknowledged in many ways, such as creating satisfactory learning outcome (Cochrane, Narayan & Oldfield, 2013; Kinash, Brand & Mathew, 2012), increasing motivation and student satisfaction (Perez, Gonzalez, Pitcher & Golding, 2012; Theeratheat & Srikulwong, 2015), enhancing creativity (Cochrane et al., 2013; Kim, Park, Yoo & Kim, 2016), improving interaction and collaborative work (Cochrane et al., 2013; Hargis, Cavanaugh, Kamali & Soto, 2014), and offering authentic teaching materials (Riley, 2013). Chen and Tsai (2009) argue that an interactive location-based game could support English vocabulary learning efficacy and increase motivation of students in learning English. Elias (2011) states that mobile technologies support “continuous and situated learning” and facilitate “ongoing learning to occur in multiple locations” (p. 146).

Challenges of digital technology integration into curricula

There are a few challenges of integrating digital technologies into classrooms. First, using technology can be frustrating. Tan and McWilliam (2009) found that teachers think it is difficult to integrate technology into their classes. The teachers feel frustrated when dealing with technology literacy over print literacy. Nguyen et al. (2015) add that teachers did not know how to incorporate iPads to align with the curriculum in higher education. Van De Bogart (2012) found that Thai primary school teachers lack technological skills in using a tablet computer. The study suggests that the teachers require a certain level of digital technology familiarity to teach students new literacy skills and behavioral patterns on multi-tasking competence.

Second, technical problems of technology use and its novelty hinder technology integration into instruction. Culén and Gasparini (2011) raise problematic issues about iPad use regarding note-taking features, waste of time loading webpages, and lack of Flash support. Hutchison, Beschoner and Schmidt-Crawford (2012) add that it is difficult to resize texts and images and control the sensitive touchscreen of iPads.

In addition, a plethora of scholars have reported the recurring problem of teachers' inadequate technological skills and their need for additional technology training and support (Dudeney et al., 2013; Hague & Payton, 2010; Hutchison & Reinking, 2011; Kessler, 2013; Nguyen, Barton & Nguyen, 2015; Pang, Reinking, Hutchison & Ramey, 2015; Prensky, 2001, 2010; Strickland & O'Brien, 2013; Tan & McWilliam, 2009; Van De Bogart, 2012). Hargis et al. (2014) assert that students and teachers at a college in the United Arab Emirates would like technological training because “some faculty members are not technologically inclined” (p. 52). Hutchison and Reinking (2011) call for professional development workshops for teachers to increase technology integration into pedagogy. In addition, Nguyen et al. (2015) suggests that policymakers and administrative boards should provide technological support to teaching faculties, staff and students towards mobile technologies. These findings align with Prensky's (2001) statement that teachers are “digital immigrants”.

In order to teach and study with technologies, open-mindedness and a positive attitude are vital. Pang et al. (2015) raise the notion that “teachers' beliefs are an important

factor” (p. 11). They reported that although South Korean teachers encounter less technical support, such as lack of Internet access than their USA counterparts, the Korean teachers have higher ICT integration into literacy pedagogy more often. The authors argue for more studies on beliefs about the importance and the objectives of technology use. Lakarnchua and Wasanasomsithi (2013) found that 26 Thai EFL students feel negative about using blogs because of technical problems, and lack of understanding towards blogging. Lee, Cerreto and Lee (2010) use the theory of planned behavior (TPB) to explore Korean teachers’ intentions to use computers to design and deliver teaching. They conclude that attitude toward behaviors (i.e., the better quality of teaching and student achievement) impacts teachers’ intentions to use technology much more than either subjective norm (i.e., school administration) or perceived behavioral control (i.e., reliable hardware and software, skills and training and support).

Regarding technology use of students, some research has shown that new generation students are familiar with technology use, but they still need digital literacy training. Dudeney et al. (2013) reconfirm Tan and McWilliam’s (2009) findings that students are comfortable with technology use and can use the technology much better than teachers. Dudeney et al. (2013) suggest that teachers can learn new technologies from their students. However, the authors found that many young people from the Net generation still require teachers’ guidance in using technologies. This is supported by the study of Williams, Abraham and Bostelmann (2014) who found that 50 percent of 800 undergraduates at an American university are young students do not consider themselves as “digital natives” with expertise in digital innovations.

Overall, it can be surmised that technology integration into curricula is valuable in promoting teaching and learning outcomes and in improving students’ digital literacies as well as teachers’. However, despite the challenges of integrating technologies and digital literacy into the classroom, it is also important that teachers be more open-minded and take additional technological training for their professional development in order to deliver constructive and engaging lessons with emerging digital technologies.

Methodology

The research design of the study is descriptive, using mixed methods. The data collection consumed nine weeks starting from January 8th to March 7th, 2018, during the Spring 2018 semester. The data collection started with a pilot study of the teacher questionnaire. The data were collected from five sources: 1) two attitudinal surveys of in-service English language teachers and EFL Thai university students; 2) class observations of three focal teachers; 3) teacher interviews; 4) student focus group discussions; and 5) a review of artifacts of the three English courses and the researcher’s reflective journals.

Setting

This study was conducted at a non-profit private university in the center part of Bangkok, Thailand. The university, founded in 1984, offers bachelor’s, master’s and doctoral degree programs and has an undergraduate enrollment of about 6,000 students each year. Since 2011, the university has established an innovative iHybrid

learning system, iPad 1:1. The university has provided iPads to 17,000 students and 450 faculty members. At the university, teaching and learning are afforded by a well-established and well-integrated information technological infrastructure, including a comprehensive IT department, student and staff support and help desks, modern and technologically equipped classroom facilities, and professional development training from Apple Distinguished Educators.

Participants

The participants were 37 English language in-service teachers, both Thai and native speakers of English, and 58 EFL Thai university students from various years and programs of study. In addition to general aggregate data, the study focuses on the cases of three teachers by exploring in-depth their digital literacy skills, digital technology use, and perceptions of technology integration into English curricula. The three instructors were selected based on dissimilar characteristics in terms of age, gender, teaching expertise, teaching styles and technology skills. Moreover, five students from each class were recruited to participate in focus group discussions.

Data collection

Crucially, prior to data collection, all prospective participants were asked to sign an Institutional Review Board (IRB) consent form of the University of Arizona. The surveys were developed and adapted from the studies of Ertmer, Ottenbreit-Leftwich, Sadik, Sendurur and Sendurur (2012), Hargis et al. (2014), Karabulut, Levelle, Li and Suvorov (2012), Pang et al. (2015), Reinhardt and Nelson (2004), and Williams, Abraham and Bostelmann (2014). A pseudonym was assigned to each participant for the use of reference. In addition, the participants' identities were anonymous. The quantitative data from the surveys were analyzed by descriptive statistics: mean score and percentage.

In addition, 16-hour class observations were conducted to explore the three teachers' use of digital technologies for teaching and the researcher's role was as a non-participant observer (Marshall & Rossman, 2015). Some short videos and photos were taken with the participants' permission. Based on Marshall and Rossman's (2015) topic approach, six sessions of individual semi-structured interviews with three teachers took place. Each teacher was interviewed twice around the first two weeks and the week before the midterm exam. The semi-structured interview approach was appropriate to elicit responses from the teachers. Due to busy teaching loads, each interview session took 40-60 minutes, adapted from Seidman's (2013) 90-minute length recommendation. Besides the student questionnaire, three student focus group discussions with five students per group were administered in Week 6 of the semester. Moreover, the secondary data of three courses – course syllabi, teaching materials uploaded to iTunes U, and the students' finished assignments related to technology-enhanced language learning and teaching – were collected and analyzed. An open coding strategy was used to interpret the open-ended responses in the surveys, teacher interviews and student group discussions. In addition, content analysis was utilized for the artifact review.

Results and Interpretation

Prior to presenting the main findings, it is helpful to describe the background information of teacher and student participants in this study for better understanding of the findings analysis. The student participants ($n = 58$) are 38 female and 20 male. About 70 percent of the students were 19-21 years old. The students were from three programs of study: English (29), Japanese (28) and Logistics (1). About 50 percent of the students were freshmen and the rest were juniors and seniors.

The teacher participants ($n = 37$) are 31 Thais (84 percent) and six native speakers from the United States and Great Britain. There are 25 female and 12 male teachers. It is interesting to note that all six foreign teachers are male. About half of teachers are senior teachers whose age was above 50. Almost all teachers (92 percent) have had more than ten years of teaching experience. About half of the teachers taught 15-19 hours per week. This implies they must be busy and work hard, which may contribute to having little time for additional learning about and training in use of new technologies, not to mention integrating them into the classroom.

The results of the study will be divided into two topics based on the two research questions.

1. Digital technology use of teachers and students for academic and non-academic purposes

The following findings will answer the first research question: “What digital technologies do teachers and students use for academic and non-academic purposes?”

Teachers' and students' digital technology use for academic purposes

In this study, both teachers and students used digital technologies and social media for academic purposes less than for non-academic purposes. The survey findings showed that students in generation Z who were brought up with access to technology were more comfortable with digital devices and used various technological tools and social media more than the teachers. The student discussion results indicated that students were also better at multitasking on digital devices. The students admitted that they were very addicted to social digital platforms and devices; one remarked, “I can't live without it [smartphone]”. The teachers mainly used websites and YouTube videos as resources for teaching, while students learned English from broader and more various sources, such as YouTube, mobile apps, iTunes U courses and Facebook.

Table 1: Teachers' digital technology use for academic purposes
(Teacher Survey, Item 7, mean = 2.37)

Rank	Technology type	Mean	Rank	Technology type	Mean
1	Websites	4.14	9	Facebook	2.30
2	Emails	3.62	10	Social Network Sites for Language Teaching	2.22
3	YouTube	3.49	11	Web blogs	1.62
4	iTunes U	3.30	12	Online games	1.27
5	Mobile apps	3.24	13	Pinterest	1.22
6	iPads	3.00	14	Skype	1.14
7	LINE	2.73	15	Twitter	1.11
8	Wikis	2.38	16	Instagram	1.11

The teacher survey results in Table 1 show that the average group score for teachers' use of digital technology for academic purposes is 2.30. The top three ranked digital tools were websites (4.14), emails (3.62), and YouTube (3.49).

Table 2: Students' digital technology use for academic purposes
(Student Survey, Item 12, mean = 3.04)

Rank	Technology Type	Mean	Rank	Technology type	Mean
1	YouTube	4.10	9	Instagram	2.88
2	Mobile apps	4.05	10	LINE chat app	2.81
3	iTunes U course	3.84	11	Twitter	2.78
4	Websites	3.66	12	Wikis	2.62
5	iPads	3.60	13	Blogs	2.48
6	Facebook	3.33	14	Emails	2.43
7	Social Network Sites for Language Learning	3.04	15	Pinterest	2.38
8	Online games	2.95	16	Skype	1.74

The student survey results in Table 2 show that the average group score for students' technology use for academic purposes is 3.04. The students always used YouTube (4.10), then mobile apps (4.05), and iTunes U (3.84) for learning English.

Teachers' and students' digital technology use for non-academic purposes

For non-academic purposes, the teachers and students in general shared the same preference of technology use. Both groups enjoyed surfing websites the most and watching YouTube videos for pleasure. Students also frequently used mobile apps and played online games. The focus group discussion findings revealed that students became more interested in Instagram and Twitter. The students found Skype the least popular technology for both learning and entertainment. On the other hand, the teachers were not interested in using Instagram and Twitter or online games both for academic and non-academic purposes. Interestingly, teachers mostly relied on Facebook and LINE, and it is surprising that they used LINE more often than students. This may be because the students are more interested in using Instagram and Twitter.

Table 3: Teachers' digital technology use for non-academic purposes
(Teacher Survey, Item 10, mean = 2.85)

Rank	Technology type	Mean	Rank	Technology type	Mean
1	Websites	4.62	9	Skype	1.95
2	LINE	4.51	10	Pinterest	1.86
3	YouTube	4.32	11	Instagram	1.84
4	Emails	4.05	12	Web blogs	1.78
5	Facebook	4.05	13	iTunes U	1.68
6	iPads	3.68	14	Twitter	1.46
7	Mobile apps	3.43	15	Online games	1.38
8	Wikis	2.11			

The teacher survey results in Table 3 show that the average group score for teachers in using digital technology for non-academic purposes is 2.85. The teachers often surfed websites (4.62) for fun, then used LINE (4.51) and watched YouTube videos (4.32). On the other hand, playing online games was not their favorite choice (1.38).

Students' digital technology use for non-academic purposes

Table 4: Students' digital technology use for non-academic purposes
(Student Survey, Item 13, mean = 3.44)

Rank	Technology type	Mean	Rank	Technology type	Mean
1	Websites	4.86	8	Twitter	3.47
2	YouTube	4.70	9	iTunes U	2.74
3	Mobile apps	4.47	10	Web blogs	2.60
4	LINE	4.37	11	Wikis	2.52
5	Facebook	4.21	12	Pinterest	2.48
6	Online games	4.02	13	Email	2.16
7	Instagram	3.91	14	Skype	1.63

The student survey results in Table 4 reveal that students' average score for digital technology use for non-academic purposes is 3.44, which is higher than the use for academic purposes (Q12 = 3.04). The students most enjoyed searching for news and information on websites (4.86) for pleasure. They also watched YouTube videos (4.70) very often. They liked to watch series and movies, read novels and listen to international songs.

2. Perceptions of technology integration into English curriculum

This section will answer the second research question: "What are teachers' and students' perceptions of technology integration into English curriculum?" It will be divided into two sub-sections: teachers' perceptions and students' perceptions.

Teachers' perceptions of technology integration into English curriculum

Based on the teacher survey and interviews, digital technology was primarily integrated as a tool for communicating, facilitating learning and teaching, and

searching for learning resources. Many teachers valued technology that could increase students' motivation, improve their learning proficiency, and make the class fun and interesting. However, some teachers were highly concerned with students' distraction caused by technology and the unreliability of technology if they would integrate technology into teaching. It appeared that some teachers were aware of their limited digital technology skills and their negative attitude towards technology integration into curriculum. The teachers reported that the biggest obstacles that impeded them from incorporating technology were their low technological skills, lack of sufficient time for class preparation, students' low English proficiency skills, and students' motivation. However, most teachers were willing to receive more technological training. As presented, these issues are worth serious consideration by teachers, teacher educators and policymakers to find practical and accommodating solutions for effective technology integration in the future.

Students' perceptions of technology integration into English curriculum

100 percent of students ($n = 58$) believed that digital technology should be integrated into English curriculum because technology facilitated their learning and made the class more enjoyable and engaging. The students showed a positive attitude towards emerging technologies. About 31 percent of students believed technology was easy to use and convenient to access a rich variety of online information and up-to-date resources. Twenty-nine percent of students found technology to be useful for them to expand their new knowledge and make learning easy and ubiquitous. However, the students reported their frustration of the unreliability of WiFi connectivity in the campus. The students were also worried about losing their finished work on iPads before submission because of dead battery. They were also afraid of losing their iPad because they must pay its depreciation to the university. Furthermore, the students said that using iPads for learning could give trouble to some students who use a Samsung smartphone. They must learn new technology skills in order to operate the IOS on an iPad. This suggests, however, that students have learned to solve technical problems by themselves.

In addition, students believed they had more expertise and confidence in web-searching skills and their technical skills for using digital tools and social media than their teachers. The students reported that they took a course about operating ICTs. The students found many teachers still lacked adequate technological skills when they used technology, such as computers and iTunes U courses in the class. A student complained that it was a waste of class time when some senior teachers did not know how to solve basic technical problems in the class. The students then requested teachers to take a course on technology use to better integrate technology into teaching and learning. Nevertheless, the students showed positive attitude about the teachers' effort of using technology. They realized that teachers from an older generation may not be familiar with digital technologies as much as themselves. Additionally, the students acknowledged that teachers could teach them critical thinking skills and they knew a number of useful digital tools for learning development. Thus, most of them expected teachers to guide them to use technologies productively for self-development in learning and living in the age of enormous digital information and ubiquitous social media.

Discussion

Digital technology use of teachers and students

This study's findings have confirmed Roblyer et al.'s (2010) findings that teachers preferred emails to Facebook. This study has revealed that the teachers used emails most, then LINE and Facebook for communication for academic purposes. Moreover, this study supports Roblyer et al. (2010) that students liked to use Facebook to learn and communicate with teachers. However, they also used LINE, Instagram and Twitter for academic purposes. The students also felt positive towards Facebook, as confirmed in the findings of Reinhardt and Zander (2011) and Wang and Vasquez (2014). This study also supports the potential of LINE use, such as in Van De Bogart's (2014) study that it afforded collaboration between teachers and students.

In contrast to Reinhardt and Zander's (2011) results, however, the students did not like a traditional teaching style anymore. They preferred teachers to incorporate engaging technology-enhanced learning activities in the classroom. It is worth noting that the student findings in this study support Dudeney et al.'s (2013) argument that students still need teachers' guidance about technology use. However, this study slightly differs in that students in generation Z or iGeneration can research and teach themselves about using technology.

Teachers' and students' hurdles of technology integration into English curriculum

This study's results that the teachers encountered many difficulties in applying technologies and they needed additional technology training align with other studies (Blake, 2016; Dudeney et al., 2013; Hague & Payton, 2010; Hutchison & Reinking, 2011; Nguyen et al., 2015; Pang et al., 2015; Tan & McWilliam, 2009). Even though this study was conducted in 2018, well into the age of digital technologies, some teachers still preferred print literacy as reported in the study of Tan and McWilliam (2009). The study's findings imply that many Thai teachers were not confident to integrate technology into the class, and they thought digital technologies were too difficult and overwhelming. These common obstacles coexist in the studies of Hutchison and Reinking (2011), Prensky (2001) and Tan and McWilliam (2009).

The results that most Thai teachers in this study claimed technical problems, such as the technology unreliability and Internet inaccessibility were their big barriers for technology use, are similarly presented in the studies of Lakarnchua and Wasanasomsithi (2013). However, this argument counters Pang et al.'s (2015) study. They found Korean teachers do not think lack of technical support is a barrier to integrate technologies into their teaching. This implies that teachers' willingness and open-mindedness are crucial. Moreover, the findings of this study regarding teachers' complaint of limited class preparation time align with Khamkhien's (2012) findings that teaching overload was a major obstacle for technology integration into instruction in Thailand.

Conclusions and Suggestions for Future Research

This qualitative study provides insights of teachers' and students' digital technology use and their perceptions of technology integration into English curriculum. The

study's objective is to raise awareness of teachers to embrace digital technology-based learning and teaching to improve students' digital literacy skills and their autonomous learning in the era of emerging digital technologies and ICTs. Despite the earnest effort of developing the well-designed research, it took only a nine-week period of data collection, which might not have provided a complete investigation of the teachers' and students' technology use and their perceptions of technology integration into pedagogy. Hence, future research should conduct a longitudinal study of a whole semester. For triangulation of reliability, it would be productive that future research includes policy-makers as participants besides teachers and students to explore their perceptions about language policies of promoting technology integration across the university.

Overall, this study may be helpful for teachers who aspire to integrate digital technologies in their classrooms that they can be aware of technological potentials and limitations. In addition, this study's findings may spark an interest for a future research on examining the use of popular learning apps among students and their potential in language development.

Acknowledgements

I would like to convey my appreciation to my editors, Thomas and Jim. They gave valuable suggestions to improve this study and actively edit and proofread the paper.

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APPENDIX A TEACHER SURVEY

Digital Literacies and Perceptions on Technology-enhanced Language Teaching

This survey should take you about 20 minutes to complete. Thank you very much for providing information that will be used to improve digital literacy education.

BACKGROUND INFORMATION

Email address: _____

Please **circle** your responses.

1. What is your gender? Female Male
 2. How old are you? 25-29 30-39 40-49 Above 50
 3. What is the highest degree you have completed? (Indicate the name of your program)
-

4. How many years of English teaching experience have you had?
 1-4 years 5-9 years 10-14 years
 15-19 years 20-25 years More than 25 years
 5. How many hours a week do you teach?
 5-9 Hours 10-14 hours 15-19 hours More than 19 hours
 6. Please write the course name(s) you are teaching.
-

7. Please **circle** the position on the continuum that best describes your technology use for academic purposes.

Never (1) Seldom (2) Sometimes (3) Frequently (4)
 Always (5)

- | | |
|---|-----|
| a) I use Websites as sources to teach English. | 1 2 |
| 3 4 5 | |
| b) I use iPads to teach English. | 1 2 |
| 3 4 5 | |
| c) I use iTunes U to teach English. | 1 2 |
| 3 4 5 | |
| d) I use mobile apps / software for teaching (e.g., online dictionary). | 1 2 |
| 3 4 5 | |
| e) I use social network sites for language teaching (e.g., Duolingo). | 1 2 |
| 3 4 5 | |
| f) I use Wikis to teach English. | 1 2 |
| 3 4 5 | |
| g) I use blogs to develop my writing. | 1 2 |
| 3 4 5 | |
| h) I use emails to communicate with students. | 1 2 |
| 3 4 5 | |
| i) I use Twitter to teach English. | 1 2 |
| 3 4 5 | |
| j) I use Instagram to teach English. | 1 2 |
| 3 4 5 | |
| k) I use Skype to communicate with students. | 1 2 |
| 3 4 5 | |
| l) I use LINE to teach English. | 1 2 |
| 3 4 5 | |
| m) I use Facebook to teach English and communicate with students. | 1 2 |
| 3 4 5 | |
| n) I use virtual games (e.g., Second Life, World of Warcraft) to teach English. | |
| 1 2 3 4 5 | |

- o) I use Pinterest to teach English. 1 2
3 4 5
- p) I use YouTube videos to teach English. 1 2
3 4 5
- q) I use Clickers to teach English. 1 2
3 4 5

8. What is the **most frequent technology** you use for teaching? (e.g., iTunes U course management, Facebook, YouTube, Dictionary app, Line, Google (Safari), Mail, Game apps)

9. How do you apply the technology you mentioned to teaching?

10. Please circle the position on the continuum that best describes your technology use for **NON- academic purposes**.

- | Never (1) | Seldom (2) | Sometimes (3) | Frequently (4) | Always (5) |
|---|------------|---------------|----------------|------------|
| a) I surf websites for fun to read interesting things. | | | | 1 2 |
| 3 4 5 | | | | |
| b) I use iPads for fun. | | | | 1 2 |
| 3 4 5 | | | | |
| c) I use iTunes U course to read for fun. | | | | 1 2 |
| 3 4 5 | | | | |
| d) I use mobile apps for living and fun. | | | | 1 2 |
| 3 4 5 | | | | |
| e) I use emails to communicate with family and friends. | | | | 1 2 |
| 3 4 5 | | | | |
| f) I read and write on the Wikis for fun. | | | | 1 2 |
| 3 4 5 | | | | |
| g) I read and write blogs for fun. | | | | 1 2 |
| 3 4 5 | | | | |
| h) I use Twitter for fun. | | | | 1 2 |
| 3 4 5 | | | | |
| i) I use Instagram for fun. | | | | 1 2 |
| 3 4 5 | | | | |
| j) I use Skype for fun and communication with family and friends. | | | | 1 2 |
| 3 4 5 | | | | |
| k) I use LINE chat app for fun and communication with family and friends. | | | | 1 2 |
| 3 4 5 | | | | |
| l) I use Facebook for fun and communication with family and friends. | | | | 1 2 |
| 3 4 5 | | | | |
| m) I play virtual games (e.g., Second Life, World of Warcraft). | | | | 1 2 |
| 3 4 5 | | | | |
| n) I use Pinterest for fun. | | | | 1 2 |
| 3 4 5 | | | | |
| o) I watch YouTube videos for fun. | | | | 1 2 |
| 3 4 5 | | | | |

11. What is the **most frequent technology** you use for fun? (e.g., Facebook, YouTube, Dictionary app, Line, Google (Safari), Mail, Game apps)

12. How do you use technology you mentioned for fun?

13. What are **your assumptions on how your STUDENTS** use technology in learning English?

Never (1)	Seldom (2)	Sometimes (3)	Frequently (4)	Always (5)
	a)	They use Websites to learn English.		1 2
3 4 5	b)	They use iPads to help them learn English.		1 2
3 4 5	c)	They use iTunes U course to learn English.		1 2
3 4 5	d)	They use mobile apps to learn English (e.g., online dictionary)		1 2
3 4 5	e)	They use social network sites for language learning (Duolingo)		1 2
3 4 5	f)	They use Wikis to learn English.		1 2
3 4 5	g)	They use blogs to learn English.		1 2
3 4 5	h)	They use emails to communicate with teachers.		1 2
3 4 5	i)	They use Twitter to learn English.		1 2
3 4 5	j)	They use Instagram to learn English.		1 2
3 4 5	k)	They use Skype to communicate with teachers and classmates.		1 2
3 4 5	l)	They use LINE to learn English.		1 2
3 4 5	m)	They use Facebook to learn English.		1 2
3 4 5	n)	They play virtual games (e.g., Second Life) to learn English.		1 2
3 4 5	o)	They use Pinterest to learn English.		1 2
3 4 5	p)	They watch YouTube videos to learn English.		1 2

14. What are **your assumptions on how your STUDENTS** use technologies for fun?

Never (1)	Seldom (2)	Sometimes (3)	Frequently (4)	Always (5)
	a)	They surf webs to read interesting information for fun.		1 2
3 4 5	b)	They use iPads for fun.		1 2
3 4 5	c)	They use iTunes U course to read for fun.		1 2
3 4 5				

- | | | |
|-------|---|-----|
| d) | They use mobile apps for fun. | 1 2 |
| 3 4 5 | | |
| e) | They use Wikis for fun. | 1 2 |
| 3 4 5 | | |
| f) | They use blogs for fun. | 1 2 |
| 3 4 5 | | |
| g) | They use emails to communicate with family and friends. | 1 2 |
| 3 4 5 | | |
| h) | They use Twitter for fun. | 1 2 |
| 3 4 5 | | |
| i) | They use Instagram for fun. | 1 2 |
| 3 4 5 | | |
| j) | They use Skype to communicate with family and friends for fun. | 1 2 |
| 3 4 5 | | |
| k) | They use LINE for fun. | 1 2 |
| 3 4 5 | | |
| l) | They use Facebook for fun. | 1 2 |
| 3 4 5 | | |
| m) | They play virtual games (e.g., Second Life, World of Warcraft). | 1 2 |
| 3 4 5 | | |
| n) | They use Pinterest for fun. | 1 2 |
| 3 4 5 | | |
| o) | They watch YouTube videos for fun. | 1 2 |
| 3 4 5 | | |

DIGITAL PARTICIPATION

15. How many **hours per day** do you participate in the digital community?

0 = Never 1 = less than 1 hour 2 = 1-2 hours
 3 = 2-3 hours 4 = 3-4 hours 5 = more than 4 hours

- | | | |
|---------|---|-----|
| a) | Facebook | 0 1 |
| 2 3 4 5 | | |
| b) | Twitter | 0 1 |
| 2 3 4 5 | | |
| c) | YouTube | 0 1 |
| 2 3 4 5 | | |
| d) | Instagram | 0 1 |
| 2 3 4 5 | | |
| e) | Line | 0 1 |
| 2 3 4 5 | | |
| f) | Web blog | 0 1 |
| 2 3 4 5 | | |
| g) | Online news and updates | 0 1 |
| 2 3 4 5 | | |
| h) | Online games | 0 1 |
| 2 3 4 5 | | |
| i) | Other online communities (e.g., Pantip) | 0 1 |
| 2 3 4 5 | | |

ENGAGEMENT & COMFORT WITH TECHNOLOGY

16. How do you engage and feel about the following?

Never / Very Low (1) Low (2) Medium (3) High (4) Very High (5)

- | | | |
|-------|---|-----|
| a) | I took college courses devoted to technology-enhanced language teaching. | 1 2 |
| 3 4 5 | | |
| b) | I have had sufficient training with technology usage from the university. | 1 2 |
| 3 4 5 | | |
| c) | I collaborate with other teachers to design technology -enhanced language | |

- teaching activities.
1 2 3 4 5
- d) I am interested in learning more about technology -enhanced language teaching. 1 2
3 4
5
 - e) I prefer to develop my technology skills by doing. 1 2
3 4 5
 - f) I prefer to receive technological trainings and support. 1 2
3 4 5
 - g) I am comfortable with using digital technologies for teaching. 1 2
3 4 5
 - h) I am comfortable with using digital technologies for fun. 1 2
3 4 5
 - i) I am confident about choosing appropriate digital tools to support teaching. 1
2 3 4 5
 - j) I am confident about designing innovative teaching materials with digital technologies. 1 2
3 4 5

17. What are your perceptions on different **barriers** to integrate technology into curriculum?

A Very High Barrier (1) High (2) Medium (3) Low (4) A Very Low Barrier (5)

- a) Personal Motivation 1 2 3 4
5
- b) Collaboration with other teachers 1 2 3 4
5
- c) Technological training and support 1 2 3 4
5
- d) University infrastructures and facilities 1 2 3 4
5
- e) Budgeting for new technologies (apps) 1 2 3 4
5
- f) Technology and Internet access 1 2 3 4
5
- g) Time for teaching preparation 1 2 3 4
5
- h) Classroom management 1 2 3 4
5
- i) Assessment aligned with technology use 1 2 3 4
5
- j) Technical problems in the classroom 1 2 3 4
5
- k) Institutional policies and administration 1 2 3 4
5
- l) Subject content 1 2 3 4
5
- m) Teaching methods and styles 1 2 3 4
5
- n) Teaching loads and responsibilities 1 2 3 4
5
- o) Technological skills of my own 1 2 3 4
5

- 5 p) Technological skills of students 1 2 3 4
- 5 q) English proficiency of students 1 2 3 4
- 5 r) Motivation of students 1 2 3 4
- 5 s) Learning styles of students 1 2 3 4

18. What might be the biggest obstacle that impede your technology integration into curriculum?

19. What are your perceptions on **your institution** related to technology integration into teaching?

(5) Very Low (1) Low (2) Medium (3) High (4) Very High

- a) I am satisfied with the university’s technological support and training. 1 2 3 4
5
- b) I am satisfied with the university’s technological infrastructure. 1 2 3 4
5
- c) I am satisfied with the university’s policy about increasing technology integration. 1 2 3 4
5
- d) I am satisfied with the university’s policy about taking online exams on iPads. 1 2 3 4
5
- e) I am satisfied with the university’s policy about creating iTunes U courses. 1 2 3 4
5
- f) I am satisfied with the university’s policy about encouraging the use of iPads and other technologies. 1 2 3 4 5

20. What are your perceptions on these technology-enhanced language teaching activities aimed to **promote your digital literacies**?

Strongly disagree (1) Disagree (2) Neither Agree or Disagree (3)
Agree (4) Strongly Agree (5)

- a) Having a technology mentor/ tutor. 1 2 3 4
5
- b) Creating an e-teaching portfolio. 1 2 3 4
5
- c) Creating a YouTube video project. 1 2 3 4
5

- d) Creating a digital storytelling project. 1 2 3 4
5
- e) Creating a teacher blog. 1 2 3 4
5
- f) Creating a Twitter. 1 2 3 4
5
- g) Creating a Facebook page for teachers who are interested in technology. 1
2 3 4 5
- h) Creating a teacher website. 1 2 3 4
5
- i) Creating a LINE group to discuss technology use. 1 2 3 4
5

DIGITAL LITERACIES

21. In your own words, how would you define **digital literacies**?

22. What is your level of **digital literacies** (according to your own understanding of this term)?

Very Low (1) Low (2) Medium (3) High (4) Very High (5)

23. Generally, what is your **digital literacies** compared to **typical undergraduate students**?

Much Lower (1) Lower (2) Medium (3) Higher (4) Much Higher (5)

24. Generally, what is your **digital literacies** compared to people **around your age**?

Much Lower (1) Lower (2) Medium (3) Higher (4) Much Higher (5)

25. In your opinion, are **digital literacies** necessary to be taught in your course? Why or why not?

26. What factors influence you to select particular technology in teaching? (e.g., students' need, students' motivation, your interest, your expertise, your institutional policy)

27. How do you apply **iTunes U course** management to your teaching?

28. How do you apply **iPads** to your teaching?

29. What are the **benefits and drawbacks** of technology-enhanced language teaching?

30. What do you think can help you become more confident and comfortable with technology integration into English teaching?

Would you like to participate in an in-depth interview session? If yes, please write your contact information below:

Phone number: _____ *Name:* _____

Thank you very much for your participation in this survey!

APPENDIX B STUDENT SURVEY

Digital Technology use and Perceptions of Technology-enhanced Language Learning

This survey should take you about 20 minutes to complete. Thank you for providing information that will be used to improve digital literacy education.

BACKGROUND INFORMATION

1. Please write your course code or course name: _____
2. Gender (circle one): Female Male
3. How old are you? _____
4. What is your program/ major of study? _____
5. What is your academic level? (circle one) Freshman / Sophomore / Junior / Senior

TECHNOLOGY PROFICIENCY

6. Generally, what is your skill level as a user of **desktop /laptop computers** compared to typical undergraduate students? (circle one)
Much Lower (1) Lower (2) Average (3) Higher (4) Much Higher (5)
7. Generally, what is your skill level as a user of **desktop/laptop computers** compared to people around the age of 50? (circle one)
Much Lower (1) Lower (2) Average (3) Higher (4) Much Higher (5)
8. How often do you access iTunes U courses? (circle one)
Never Once a week 2-3 times per week 4-5 times per week Every day
9. What do you usually do on iTunes U? (Please specify)

10. What is the **most frequent thing** (app / tool) you use your mobile device for when learning a language? Please DO NOT include iTunes U.

11. What is the **most frequent thing** (app / tool) you use your mobile device to do for fun? Please DO NOT include “talking on the phone”.

Technology use for academic purposes

12. Please circle the position on the continuum that best describes your technology use in learning English

- | Never (1) | Seldom (2) | Sometimes (3) | Frequently (4) | Always (5) |
|-----------|---|---------------|----------------|------------|
| a) | I use the Internet to get access to news and videos in English. | | | 1 2 |
| 3 4 5 | | | | |
| b) | I use iPads to help me learn English. | | | 1 2 |
| 3 4 5 | | | | |
| c) | I use iTunes U course to read materials, do assignments and view the test scores. | | | |
| | 1 2 3 4 5 | | | |
| d) | I use mobile apps for learning (e.g., online dictionary) | | | 1 2 |
| 3 4 5 | | | | |
| e) | I use social network sites for language learning (e.g., Duolingo) | | | 1 2 |
| 3 4 5 | | | | |
| f) | I use Wikis in learning English. | | | 1 2 |
| 3 4 5 | | | | |
| g) | I use blogs to improve my writing in English. | | | 1 2 |
| 3 4 5 | | | | |
| h) | I use emails to communicate with teachers in English. | | | 1 2 |
| 3 4 5 | | | | |
| i) | I use Twitter to learn English. | | | 1 2 |
| 3 4 5 | | | | |

- j) I use Instagram to learn English. 1 2
3 4 5
- k) I use Skype to communicate with teachers and classmates in English. 1 2
3 4 5
- l) I use LINE chat app for learning (e.g., communicate with teachers and participate in group discussions) 1 2
3 4 5
- m) I use Facebook to learn English and communicate with teachers. 1 2
3 4 5
- n) I use virtual games (e.g., Second Life, World of Warcraft) to improve my English. 1 2
3 4 5
- o) I use Pinterest to learn English. 1 2
3 4 5
- p) I watch YouTube videos to learn English. 1 2
3 4 5

Technology use for non- academic purposes

13. Please circle the position on the continuum that best describes your technology use for fun.

Never (1) Seldom (2) Sometimes (3) Frequently (4) Always (5)

- a) I surf the web for fun to find interesting things to read and watch videos and listen to music. 1 2 3 4 5
- b) I use iTunes U course to find books to read for fun. 1 2
3 4 5
- c) I use mobile apps for living and fun. 1 2
3 4 5
- d) I use emails to communicate with family and friends. 1 2
3 4 5
- e) I read and write on the Wikis for fun. 1 2
3 4 5
- f) I use blogs for fun. 1 2
3 4 5
- g) I use Twitter for fun. 1 2
3 4 5
- h) I use Instagram for fun with family and friends. 1 2
3 4 5
- i) I use Skype for fun and communication with family and friends. 1 2
3 4 5
- j) I use LINE chat app for fun and communication with family and friends. 1 2
3 4 5
- k) I use Facebook for fun and communication with family and friends. 1 2
3 4 5
- l) I play virtual games (e.g., Second Life, World of Warcraft). 1 2
3 4 5
- m) I use Pinterest for fun. 1 2
3 4 5
- n) I watch YouTube videos for fun. 1 2
3 4 5

14. Explain in detail in the space below how you would define **digital literacy**.

15. Please indicate your level of **digital literacy** (according to your own understanding of this term).

Very low (1) Low (2) Medium (3) High (4) Very High (5)

16. Please indicate your ability to do the following. (Circle your response)

On a scale of 1 to 5 to indicate how difficult or easy it is

	very difficult (1)	difficult (2)	average (3)	easy (4)	very easy (5)
a. Type English texts	1	2	3	4	5
b. Create a multimedia presentation.	1	2	3	4	5
c. Upload a video to YouTube.	1	2	3	4	5
d. Use the main features of Facebook.	1	2	3	4	5
e. Use the main features of Twitter.	1	2	3	4	5
f. Use the main features of Line Chat.	1	2	3	4	5
g. Use the main features of Instagram.	1	2	3	4	5
h. Use a search engine (Google, Safari).	1	2	3	4	5
i. Create/ send / receive phone text messages.	1	2	3	4	5
j. Take photos and record videos with smartphones.	1	2	3	4	5
k. Download and use mobile phone apps.	1	2	3	4	5
l. Use computer programming to create software.	1	2	3	4	5
m. Decide if online information is accurate.	1	2	3	4	5
n. Identify the original source of online information.	1	2	3	4	5
o. Determine the viewpoint/bias of online information	1	2	3	4	5

17. In your opinion, should **social media or technology** be integrated into English language curriculum? Why or why not?

YES because _____

NO because _____

18. Is it important for you to receive digital literacy instruction for learning English?

YES because _____

NO because _____

19. How often do you create projects that use videos, music, images for school and work?

Never (1) Seldom (2) Sometimes (3) Frequently (4)
 Always (5)

20. How often do you create projects that use videos, music, images for fun in your free time?

Never (1) Seldom (2) Sometimes (3) Frequently (4)
 Always (5)

21. Would you like to participate in a focus group discussion session? Yes

No

If yes, please write your contact information below:

Phone number: _____

Email: _____

Thank you very much for your participation in this survey!

Collaborative Assistive Technology in Mathematics Learning for Students with Special Needs

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

This study is an interactive and collaborative assistive technology in mathematics learning for students with special needs. The participants in this study were 3 first grade of elementary school students who with autism spectrum disorder, intellectual and developmental disability and developmental delay respectively. The purpose was to promote interpersonal interaction, active participation, and understanding in mathematics for students with special needs. The researcher has used 3D printing adaptive switches and modified toy combined with addition and subtraction arithmetic, to advance their interpersonal interact, participative of initiative, and comprehension of mathematics. Description of design activity : 1. Introduced students to 3D printing adaptive switches and modified toy. 2. Guide students to calculate the number of small fish on the modified toy. 3. Game descriptions. 4. Students are divided into 2 groups, one person operates the adaptive switch and the other is responsible for fishing (This section has student assistants participating in the grouping). 5. Write mathematical problems on the blackboard. 6. Assist students to operate and compete. 7. Sharing and giving feedback after the event is over. During the process, improve students' learning performance through specific operations; the emphasis on team cooperation, to cultivate more cooperative behavior; improve learning motivation through interesting teaching materials. Via case study paradigm, collect professional advice and feedback from their participants and special education teachers.

Keyword : assistive technology, adaptive switch, students with special needs

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Introduction

Technological advancements have been achieved one after another in the 21st century. The number of users of assistive technology continues to increase and this makes choice and application of appropriate assistive technology devices and services all the more important. The condition of each user has to be taken into account, including individual characteristics, preferences, perception and attitude, in order to prevent users from abandoning assistive technology as consequence of unsatisfactory results.

It is pointed out in the study by Badian (1999) that close to 7% of students have trouble learning math. Among students with special needs, whether in learning math or other subjects, the ratio of learning difficulty is even higher. Unified teaching and progress is often emphasized in the courses of regular classes and the individual differences and needs of students with special needs are neglected (Hou, 2004). Under such circumstances, students with special needs are unable to catch up with the progress and eventually have to be removed from regular classes and put in special education or resource classrooms for individualized instruction.

At present, application of assistive technology in special education continues to develop and bring a variety of positive influence on learning and everyday life for children with special needs. However, considerable differences exist between such children. They face dissimilar problems and needs. For this reason, particular design and modification are required in application of assistive technology in special education, whether regarding teaching materials and instruments or teaching strategies, to help children with special needs to learn more effectively.

Studies conducted by scholars have indicated there are four reasons why students have low achievements in math learning, including math being difficult to comprehend, math learning being boring, math learning making them feel lonely and math being inapplicable in daily life. Therefore, improving learning motives, simplifying math-teaching strategies, increasing the fun in learning and applicability in everyday life, and making it possible for students to learn through teamwork can improve the effect of learning for students (Liang, 2011). Meanwhile, games are an important part in children's life. Incorporation of games in teaching can achieve the following: 1) making learning more fun, 2) eliminating external purposes, 3) turning learning into a voluntary, active and free choice, 4) stimulating enthusiasm in participation and 5) linking learning to things in daily life (Liebmann, 1991). Integration of technology and games is bound to become an important direction in special education. The authors of this paper have applied the abovementioned concepts in special education. Through integration of assistive technology and games, the motives of students for learning math have been improved. Learning through teamwork has promoted interactions between children with special needs. Students have improved their ability to comprehend mathematics and associate their learning with everyday life.

Method

The case study method was adopted. Teaching activities were particularly designed while assistive technology and toy games were integrated to conduct learning intervention. Special switches produced with 3D printing were used in combination with modified toys and applied in addition teaching for first graders. Students

cooperated to calculate and answer math questions. Afterwards, the professional suggestions and feedback from special education teachers participating in the activity were obtained.

Study Subjects

The study was performed on three first graders with special needs. Their handicaps were respectively autism spectrum disorder(ASD), developmental delay (who was suspected as intellectual and developmental disability), and intellectual and developmental disability(IDD). The two students with developmental delay and intellectual and developmental disability had been pulled out of regular classes and put in the special education classroom for math learning. The other student with autism spectrum disorder had been assessed by the special education teacher as needing interaction ability enhancement and was therefore included in this study to improve the ability to interact with others.

Study Instruments

1. Special switches produced with 3D printing

The team called Excellent Assistive Technology, AxcellenT for short (see Fig. 1), created by the graduate institute the authors are attending designs and produces various special switches in accordance with the conditions of different children with special needs, including push switches, wobble switches and pull switches (see Fig. 2). Such special switches are pressed to activate modified toys. In this study, the participants had to activate modified toys through teamwork to execute their missions. In order to help more children with special needs, AxcellenT offer the public to use its special switches design for free service (see Fig. 3).



Fig. 1 AxcellenT website



Fig. 2 Various Switches

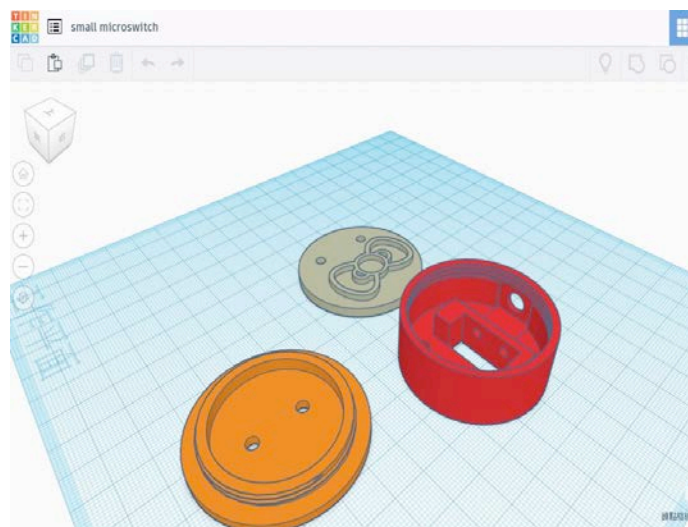


Fig. 3 Public Special Switches Design

2. Fishing toys available on the market

The power source for the motor of fishing toys available on the market was modified (see Fig. 4), so that a special switch could replace the power source and the toy could be activated by pressing the special switch



Fig. 4 Toy Modification

3. Audio cables

The audio cable is an important medium to connect and activate special switches and modified toys. After each end was hooked up, the participants could activate the toy by pressing the special switch (see Fig. 5).



Fig. 5 A modified Toy and a Special Switch Connected with an Audio Cable

Teaching Process Description

1. Introducing the special switches and rotating fishing toys

In their daily life, many people with physical and mental disabilities are unable to operate different objects, such as household appliances, toys, environmental control equipment, etc. With special switches complying with their needs, these people will be able to reduce the gap between them and the environment and even improve their connection with the outside world. Hence, it is particularly important that the purposes of special switches and how they are to be used have to be explained to the participants (see Fig. 6).



Fig. 6 Introduction of Special Switches and Rotating Fishing Toys

2. Guiding students to count the quantity of fish in the fishing toy

Many people have the experience of counting from one to one hundred in childhood. Learning math is learning language. Making the participants count the quantity of fish can help develop their mathematical language and improve their calculation ability and cognitive integration (see Fig. 7).



Fig. 7 Students Counting the Quantity of Fish in the Fishing Toy under Guidance

3. Game explanation:

Due to the disability and age of the participants, the game was explained without using difficult words. Simple and structural explanations were given to assure the participants could fully understand the rules of the game and how the game should be played (see Fig. 8).



Fig. 8 Game Explanation

4. Grouping

The participants were paired up, one to operate the special switch to activate the toy and the other to do the fishing. Since there were three participants, a volunteer who was a university student had to be included to complete grouping (see Fig. 9).



Fig. 9 Grouping and Discussion

5. Display of mathematical questions on the blackboard

Initially, a simple one-digit addition question ($2+1=$) was written on the blackboard for demonstration. After it was certain that the participants really understood the game and how to operate the toy, the actual teaching began and questions were given (see Fig. 10).



Fig. 10 Game Explanation

6. Students operating the fishing toy under assistance to engage in a competition

Addition questions appropriate for first graders were written on the blackboard for the team members to discuss and find the solutions before the number of fish corresponding to the solutions were to be fished out. The participants had to activate the modified toy and start fishing through teamwork. The team member responsible

for pressing the special switch had to continue to press the switch for the fish to turn and open their mouths, so that the one in charge of fishing could catch the fish (see Fig. 11).



Fig. 11 Students Operating the Fishing Toy under Assistance and to Engage in a Competition

7. Participants sharing experience and giving feedback after the activity ended
After the competition ended, the participants were praised for their performance and also given the opportunity to share experience and give feedback about the activity (see Fig. 12).



Fig. 12 Experience Sharing and Feedback Giving

Conclusions and Suggestions

Application of assistive technology integrated with games in special education has gradually become a tendency. Based on the study process, observations and feedback from the special education teachers of the participants, the authors have come up with the following conclusions and suggestions:

Conclusions:

1. Design of interesting teaching materials and teaching methods in combination with integration of assistive technology and games can improve the motives of children with special needs to learn.
2. When teamwork is stressed to encourage children with special needs to cooperate, such cooperative learning can increase the opportunity and ability of students with special needs to interact with others.
3. Actual operation of assistive technology devices, besides improving the ability of children with special needs to comprehend and calculate, can also help them apply what they learn in daily life and upgrade their cognitive abilities.
4. This teaching method is easy to understand. Parents of students with special needs can learn to apply it to allow their children to operate the game at home.
5. Post-activity reflection is emphasized, so that related experiences can be accumulated to lay the foundation for improvement of mathematical knowledge.

Suggestions:

1. The instruments used in this study can be adopted to develop more teaching approaches, such as for subtraction calculation, continuous application of addition and subtraction, etc. to enhance the mathematical comprehension and application of students with special needs.
2. The teaching method using games is not suitable for every student with special needs. Assessment of the condition of each student is required to determine whether the method is appropriate.
3. The time of teaching method using games also needs evaluation. If students with special needs have other classes afterwards, learning by playing fun games may cause them to make comparisons with subsequent classes and they might not be able to learn effectively as a result of loss of attention or physical exertion. For this reason, it is recommended that the teaching using games can be conducted before lunch break or during the last class of the day.

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Manufactory: Promoting 3D Spatial Skills with Productive Failure and Educational Games

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

This research study investigated an innovative teaching and learning framework that incorporated educational games utilizing the proven concept of Productive Failure (PF). The aim of the research study was to enhance students' learning experience and improve their understanding in the threshold concepts of product design, manufacturing and assembly. As a measure to promote active learning, an educational game was introduced in the problem-solving phase of PF. A 3D puzzle game titled "Manufactory" was designed, developed and implemented to assist students in improving their 3D spatial abilities. In order to test the presented framework, an experiment was conducted where students were allocated to either a Productive Failure (PF) or Direct Learning (DL) group. For the PF group, students were first required to solve problems in the puzzle game independently during the problem-solving phase, before instructions were given in the second delayed instruction phase. A conventional teaching approach was conducted for the DL group. Results from the experiment reflected that students in the PF group achieved a distinctive improvement, raising their average score by 40 percent and outperforming students in the DL group with 22 percent greater progression during the post-test. The experiment displayed evidence that the 3D educational game design provided an engaging environment for the problem-solving phase, which served as the primary motivation for effective absorption of the concepts in the delayed instruction phase.

Keywords: Productive failure, 3D spatial skills, Educational games, Game based learning.

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Introduction

Cultivating and improving 3D spatial skills is crucial for students studying in the fields of product design/ industrial design/ mechanical engineering and is the most fundamental determinant of future success (Sorby & S.A., 2009). 3D spatial ability is one of the most important factors that can influence a students' design performance (Liao & L.H., 2017). In product design, the ability can be represented as the capacity to imagine 3D models or shapes in the mind (Martín-Gutiérrez, J., Saorín, Contero, Alcañiz, Pérez-López & Ortega, 2010). Specifically, spatial conversion ability (Liao & L.H., 2017), reflecting transformation between 3D perspective and 2D perspective, is claimed to be the most critical among the spatial abilities.

However, students often have trouble visualizing a two-dimensional blueprint drawing of a three-dimensional object, which severely affects their understanding on how features of a product like case walls, bosses, snap fits and ribs are drawn. Additionally, students may overlook including one or many of these features in their drawings, which is detrimental to designing high-quality products.

Conventional instruction for creating two-dimensional blueprint drawings did not necessarily bridge the gap between students' academic backgrounds and the subject matter and principles. These gaps can be reduced by first creating a cognitive connection between the academic content and the student's ability, the method proposed for this project was to transform the learning content into a playful medium to attract students' attention. A second method of giving detailed instructions was also employed to help students to consolidate knowledge and develop their learning abilities. This learning design was inspired by a scientifically proven theory called "*Productive Failure*" (Kapur, 2008).

Productive failure (PF) is a recently proposed learning design that encourages students to get involved in searching and generating original solutions to complex and ill-structured problems before the instructional course (Jasper, 2013). PF has been applied and tested in the British Advanced level (A-Level) curriculum; therefore the same benefits are expected when integrating PF design in tertiary education. Since failure is an integral and unpleasant part of both learning and playing video games (Jasper, 2013), there is a prospect for mapping failure in games and failure in productive failure from a psychological perspective. What is relevant for this research project is that the approach to a product design consists of the abilities to address ill-defined problems, apply solution centered strategies, use productive thinking and adopt spatial modelling techniques (Cross, 1990).

Previous research has identified the importance of 3D spatial skills for product design students, along with the demand to figure out the relationship between 3D spatial ability and design performance in 3D product design (Liao & K.H., 2017). With this in mind, an educational game combined with productive failure learning design titled *Manufactory* was developed with an aim to help students in improving their skills in orthographic projection, sectioning visualization and spatial awareness.

To answer those assumptions, we listed the following three pertinent research questions:

- *Can the concept of Productive Failure be successfully translated to tertiary education?*
- *To what extent can tertiary educational content be transformed into educational games?*
- *Can educational games serve and function as ill-structured problems in the productive failure design phase?*

The methodology involves three key constructs: The first challenge is to translate the key learning contents of product design into an attractive game that could foster cognitive absorption and comprehensive understanding. The second consideration is to use the game as an ill-structured mediator nested in the productive failure design structure. Finally, in the third phase of the project, an evaluation is carefully planned to test the overall effect of the game and productive failure.

Related work

With the rapid development of multimedia technology, educators have developed creative solutions and training approaches to help students develop their spatial visualization skills.

Jorge Martin and his research group developed a book based three dimensional visualization tool using Augmented Reality (Martín-Gutiérrez et al, 2010) where fiducial markers on the book were captured by webcams and 3D models were displayed through the markers. Students could observe different perspectives of virtual models by turning or rotating the book, this tool was perceived positively by students. However, the system lacked interaction, and the indirect interaction could cause a disconnection between what was seen and what could be manipulated. The system mainly relied on camera detection, which could have lighting issues and distortion problems. Furthermore, vision was constrained to limited areas (marker size) and could cause strain on eyes (Van Krevelen, D. W. F., & Poelman, 2010).

Ahmad Rafi (Rafi, Anuar, Samad, Hayati, & Mahadzir, 2005) introduced a web-based virtual environment, which was designed to provide an immersive learning system and improve students' spatial ability. The students could involve themselves in interactions like rotating virtual objects to identify orientations or folding and unfolding 2D surfaces that could be transformed into 3D models. Overall, learning with web-based virtual environment turned out to be more efficient than the traditional learning practices. However, the system offered very limited interactions. It is hard to conclude that the operations are intriguing and engaging from a long-term perspective.

Apparently, learning games have gained widespread popularity in educational fields. Stephen W. Crown (Crown & S.W., 2001) developed a well-received web-based game to help students improve their visualization skills through instant feedback and instructional puzzles. It shared mixed features of a puzzle game and a visualized quiz and had gradually increasing levels of difficulty. It could be noted that the challenges in puzzle formats had motivated students to develop a more profound understanding of difficult concepts.

Manufactory: The game design

The game includes many features and interactions that are familiar to students studying product design and provides a controlled environment where they can explore elements of the game on their own and use different strategies to complete the game. In such a controlled environment, students can fail and have a chance to learn from their failures and discover what is needed to succeed. Students are encouraged to refer to their learning materials based on hints that the game provides and find solutions to areas in which they are unsuccessful.

Technology

The game was developed in Unity, a popular game engine among the independent game developer community. Unity was chosen due to its low learning curve, powerful scripting engine and asset store containing many useful scripts and game assets, a good community and reliable answers-solution forum. The engine allows quick prototyping and has helped during the development of the game where design results can be seen rather quickly and be iterated.

Mechanics

Manufactory contains 11 levels, arranged in ascending order of difficulty, where each level is a product, which students must assemble from pre-built parts by selecting appropriate blueprint images on the left, as seen in Figure 1 below.



Figure 1: A level being played in the game.

The images are rendered in 2D orthographic views, in both cross-sectional and orthogonal views, ranging from bad quality to good quality, which can be seen in Figure 2 below. The goal of the player is to identify blueprints drawn in the highest quality and selecting them to fabricate the parts and assembling them into a set of electronic components to create the product, an example of which can be seen in

Figure 3 below. A sound cue is played when parts are correctly assembled in place. In an event of a misjudgment or carelessness, players can detach and or delete parts.

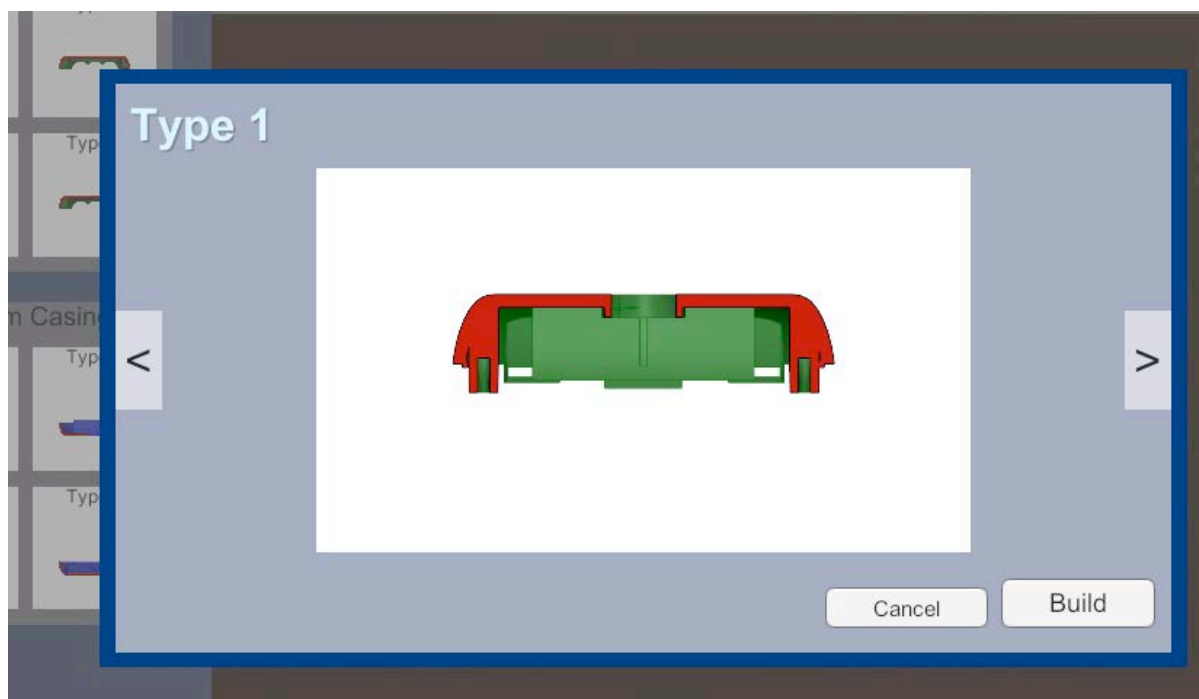


Figure 2: Dialog that appears when a blueprint image is selected.

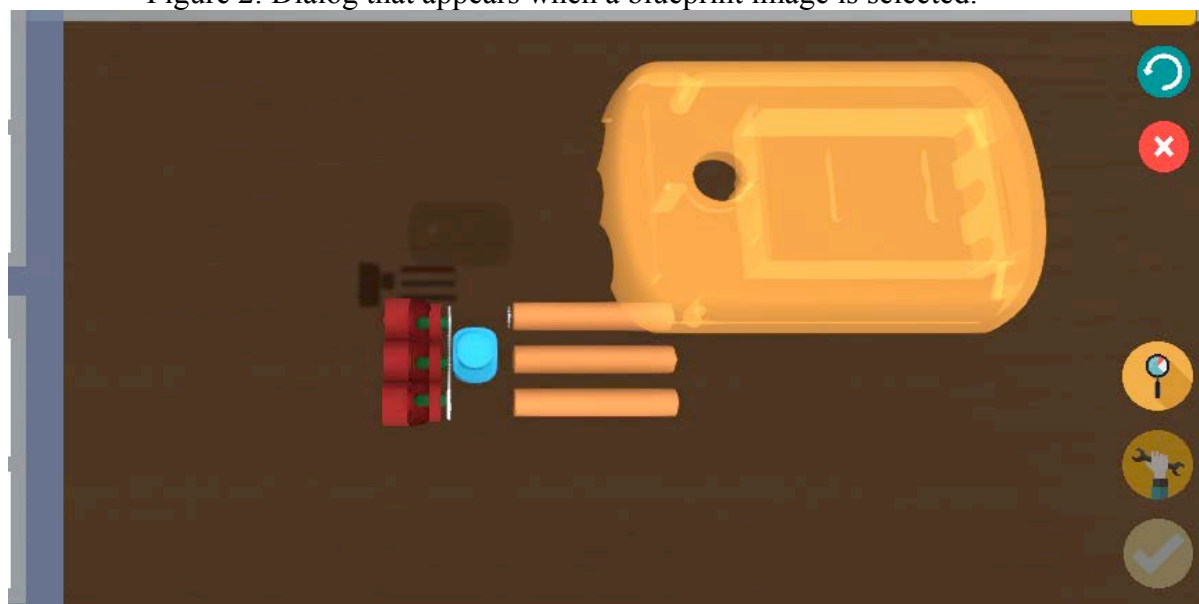


Figure 3: Assembling fabricated part onto electric components.

A button to complete the level will reveal once the product is assembled and clicking on the button will reveal a result screen displaying the completion time, score, and mistakes. The result screen as seen below serves as a form of feedback from the game and the consequence of their actions in the game.

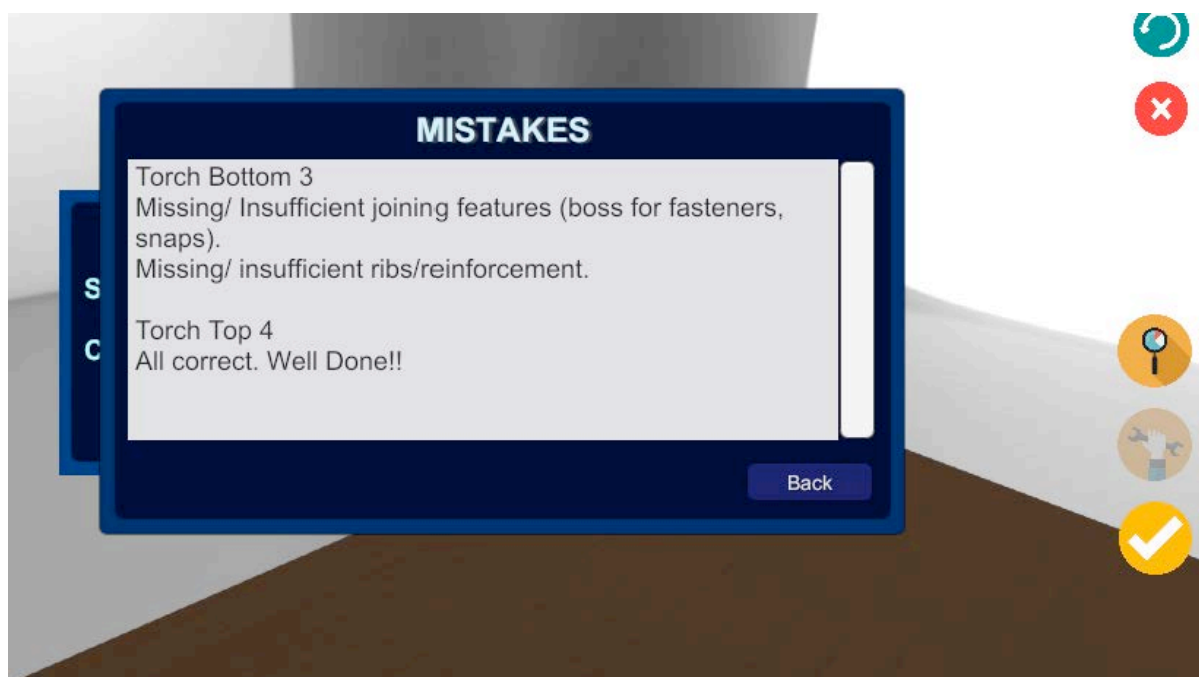


Figure 4: Feedback window after players complete the level.

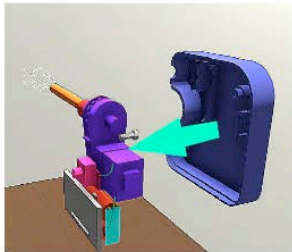
The students are familiar with 3D computer-aided design programs such as Rhinoceros, Keyshot, and Solidworks for modelling and creating renderings, thus the game's control scheme operates in a similar fashion to those programs. Controls include:

1. Viewport navigation controls such as zoom, dolly, and rotation using the mouse buttons.
2. To move objects around, common controls found in such 3D programs like the transform gizmos, object translation and rotation are provided. This creates familiarity and reduces the learning curve for the game.

A manual as seen in Figures 5 to 7 is included in the game to guide players who are new to the game. It introduces all the interactive elements in the game, the controls, rules and objectives of the game. The manual presents itself in a book like manner, introducing each element in a guided, progressive way.

Objective

The objective of the game is to correctly determine if the sectioning images of a part is correct and assemble the product carefully with the selected part. Selecting the correct part will yield a higher score, while selecting a wrong part will yield a lower score or no score at all.



Assemble by moving the casing part towards the electronic components.



If the product is not complete, you cannot complete the level as seen with this greyed out checkmark.



Once the product is done assembling, the checkmark will be enabled. This allows you to complete the level.



Figure 5: User's manual showing the objectives of the game.

Buttons



Inspect Mode

Used to inspect parts. Click on a part to focus on them and look around them. Parts cannot be moved in Inspect Mode.



Build Mode

Build mode will display the parts drawer on the left of the screen. Click on a desired part to build them onto the world.



Figure 6: The manual showing the game's interactive elements.

Camera Controls

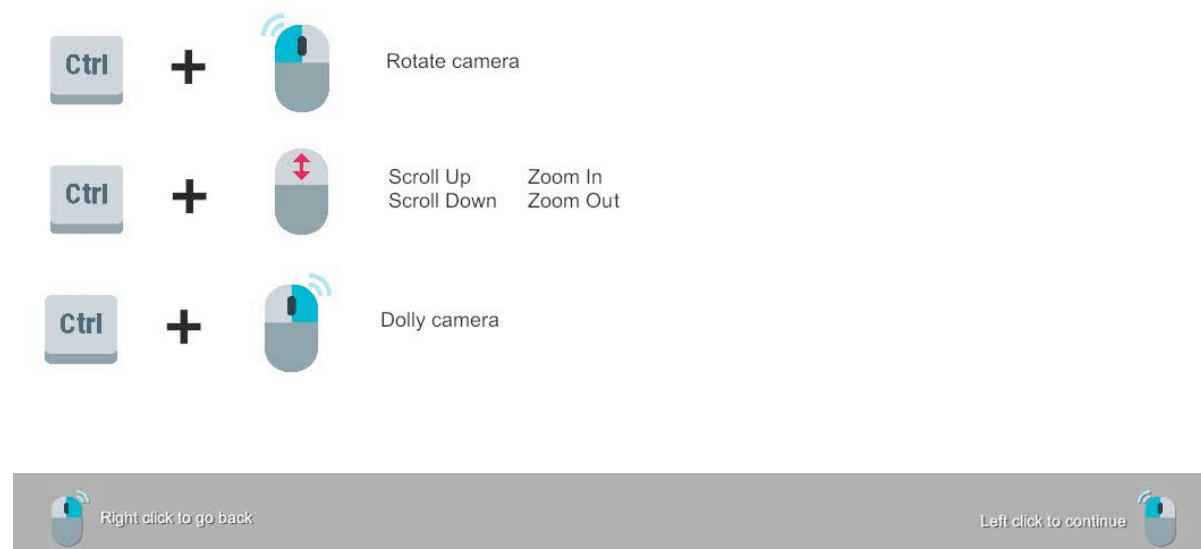


Figure 7: Camera controls in the manual.

The mechanics were designed in such a way to cultivate the improvement on three-dimensional spatial skills and projection skills of students. The game contains similar control schemes to Rafi's (Rafi et al, 2005) work. However, in contrast to Rafi's solution, ours comes with added interactions like the puzzles and providing players with goals that create better long-term engagement. Our game includes roughly the similar kind of mechanics in Crown's solution (Crown & S.W., 2001) including puzzle-based levels, increasing level of difficulty and instant feedback. However, there was no emphasis on making failure of students as part of the motivation required to further understand the subject on a deeper level. Our solution highlights this, so that students can create a more profound understanding of their subject and become better at their craft in the long term.

Aesthetics

Creating immersion and suspension of disbelief among players is important as it creates the perception and illusion among players that they are involved in the game world, which can further increase motivation to complete the goals in the game (Schell, 2014).

With the target audience being product design students, the game needs to fulfill their expectations of what a product design game should look and feel like. With that in mind, the game world is set in a modern product design studio environment. The game intends to emulate elements of a product design studio, primarily the interior design, lighting and color scheme and feel.

As a result, the game uses a simple color palette filled with whites, greys, subtle yellows, subtle blues and purple tints and is littered with things that can be typically found in a design studio.

By creating an environment, which the target audience can relate to, they can feel more connected and involved in the world. Combined with the standard 3D program-like controls, which should be familiar with the target audience, as well as the mechanics where players' goals are to assemble the product from parts through a thorough selection of sectioning images further amplify the immersion because players can interact with the world in a meaningful way.

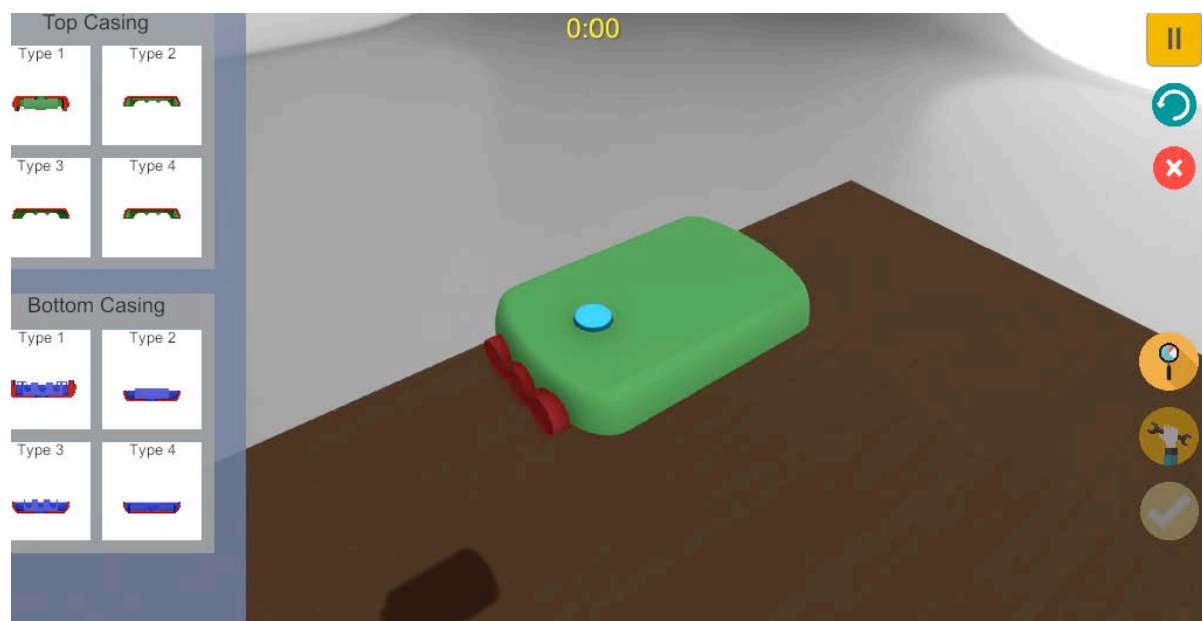


Figure 8: The main game screen.

In the figure above, the game utilizes the minimalist approach in its aesthetic to reduce clutter, be in the game world or its user interface. Animations and sound contribute to the overall aesthetic in a meaningful manner as well. An animation of an injection molding machine included in the game is played along with sounds the machine makes when players construct a part from selection of a blueprint image. Since many product designers will be working with such a machine in their industry, resulting in an even more relatable environment to the target audience.

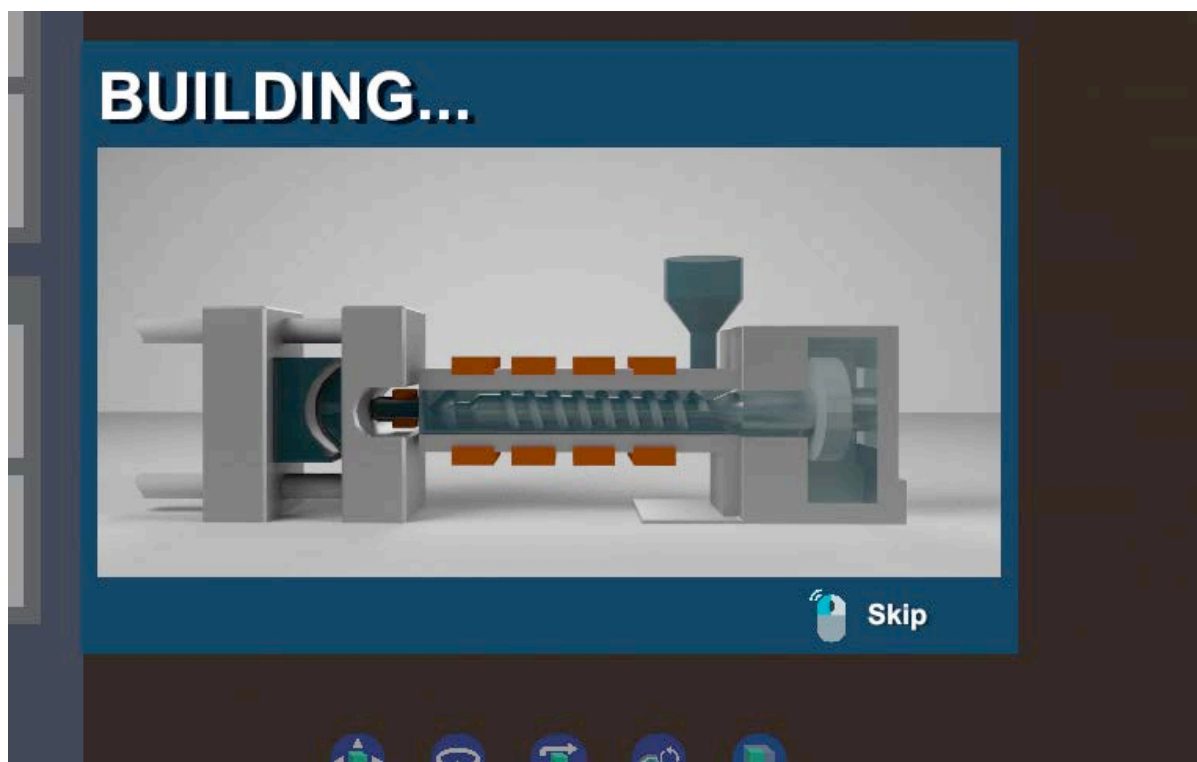


Figure 9: Building animation showing the injection molding machine.

Many of the solutions mentioned do not seem to have a world or space specifically crafted to create additional immersion to create engagement among players. For example, with Martin's AR solution (Martín-Gutiérrez et al, 2010), there was the issue of disconnection between the interaction and visuals on the screen where parameters and variables of the real world can affect how the players perceive themselves in the game. They may not feel part of the game as the digital and physical realms are clearly divided in AR. Other solutions such as Rafi's (Rafi et al, 2005) and Crown's (Crown & S.W., 2001) also do not offer a world but just the learning content, which can be fine on their own but may not offer the long-term engagement that can be beneficial in the goal of making students learn and understand the subject at a deeper level.

Experiment design

Theoretically, it looks promising that educational games and productive failure are somehow compatible with each other, practically however, there is no precedent, this experiment design presents an attempt to assess their compatibility.

Participants

The experiment was conducted in a product design classroom with an experienced tutor. Due to limits in class size, there were 14 participants in the entire experiment. Students aged from 20 to 27 who were enrolled in the course voluntarily took part in the experiment. The participants were naturally divided into two groups based on different schedules. The control group consisted of 6 students (67% of all the attendees) were given the traditional instruction by the tutor. Meanwhile, the experimental group consisting of 8 students (67% of all the attendees) followed the

new learning design.

Process

It was very difficult and challenging to come up with a solid experimental scheme especially when we need to embody the duality of the game associated with productive failure along with the students' schedules. Students in the experimental group were only available on Tuesday, and students in the control group were only available on Thursday. The conceptual experiment procedure is illustrated in Figure 10. The learning time for both groups is balanced so that their performance can be measured fairly.

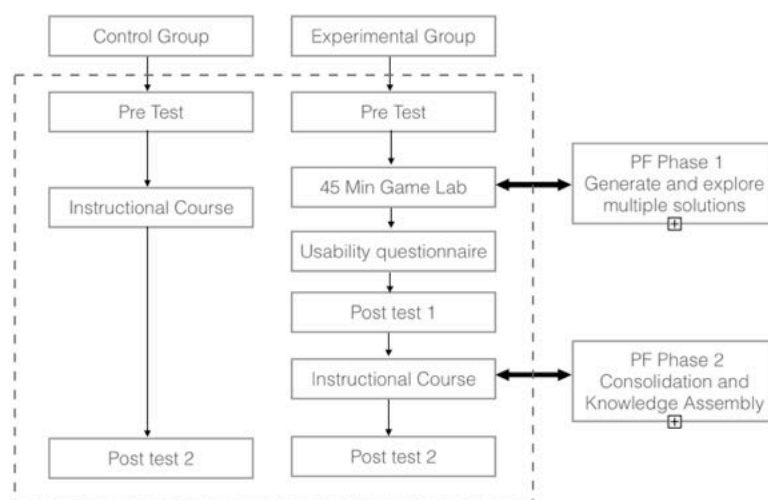


Figure 10. The experiment flow of two groups. PF phases (Kapur & Bielaczyc, 2012)

At the beginning of the experiment, both groups were notified of the upcoming process. A pre-test was conducted for both the experimental and control groups to examine the innate spatial ability and related prior knowledge of the students.

In the following week, the experimental group was asked to partake in playing the *Manufactory* game. They were given 45 minutes to play while there were no instructions related to the learning concepts or game provided during the play. The students were expected to navigate through the game using the tutorial provided within. There was also no assistance from the tutor or experiment designers. The students played in isolation and silence, such that no external factors would cause disturbance or affect their performance. If the students were stuck on a level, they were expected to analyze their mistakes by reading the level report and re-attempting the levels. The students were also free to stop playing whenever they wanted if they felt tired, frustrated or bored. Once they finished playing, they were asked to fill out a user experience survey. Meanwhile, the control group did not engage in the game and had their regular classes for the same time interval as the experiment group.

After this, the experimental group is given an examination as post-test 1. This is to understand how the learning game and resulting occurrence of failures could help students to understand concepts like visualizing sectioned views of object/models without explaining it using traditional textbook or slides in classrooms.

Following this test, the experimental group is given an instructional study by the tutor. Equally, the control group shares the same amount of instructional time. Finally, both groups participated in post-test 2 to test their knowledge from the instructional study. The scores of these tests are tabulated and compared for discussion and results.

Data collection

Game Data

Score - A performance metric for a level the players have played in. It can be used to measure the understanding of players when making choices in the level.

Completion Time - Used to measure how fast a player completes the level. It is used in conjunction with the score to assess player behavior in the game.

High Score - The overall performance of players in the game. It is the cumulative score of all levels that players have played.

Drawing Test Scores

The drawing tests were scored on a scale of 1 to 10, with a good drawing reflecting a higher score.

As described in the experiment design, for the pre-test (Figure 11), both experimental and control groups were given a series of tasks to create 2D section sketches of an existing product. Students' performance in the exam can sufficiently reveal their 3D spatial ability. Scores for the pre-test were given based on the orientation of the drawings in relation to the joining of parts in either a top/bottom or left/right configuration, and on the line-work representing where the parts were cut in section view.

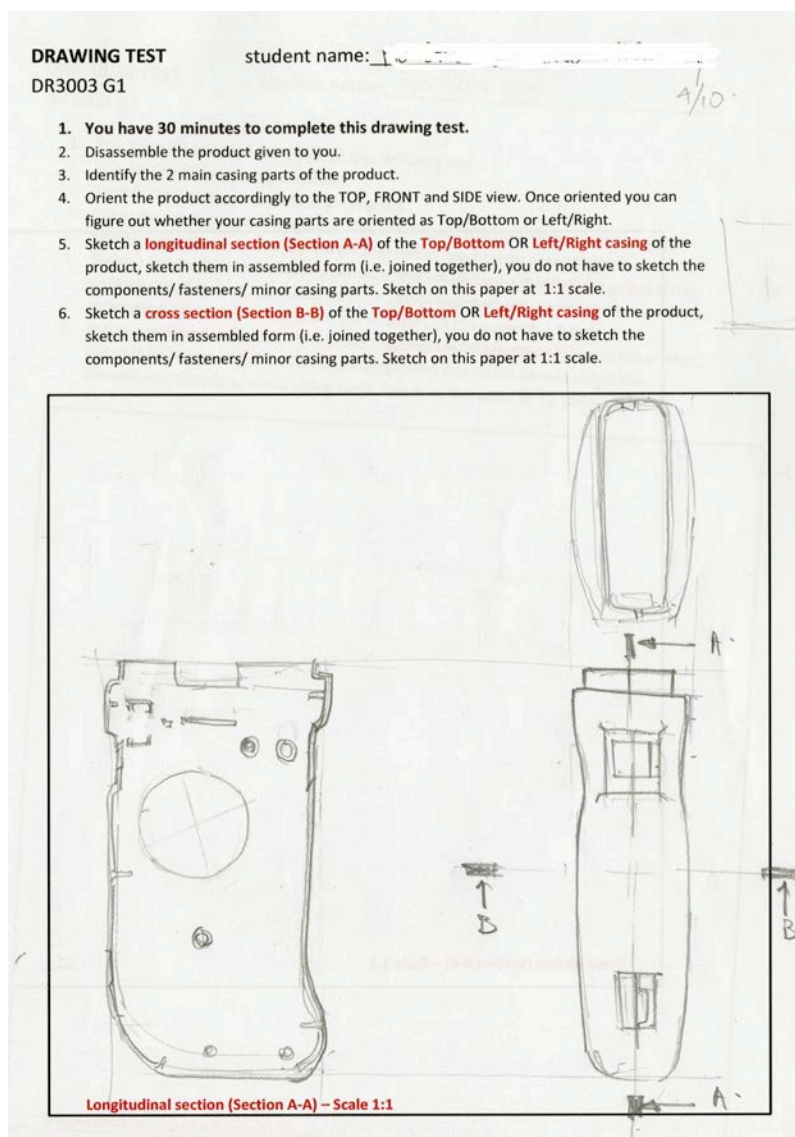


Figure 11: Sample pre-test Drawing

For post-test 1, after playing Manufactory, the experimental group was given a series of tasks to create 2D section sketches of the similar existing product used in the pre-test. Scores for post-test 1 were given based on the same criteria as the pre-test.

For post-test 2 (Figure 12), both experimental and control groups were given a series of tasks to create 2D section sketches of a different existing product than that used in the pre-test.

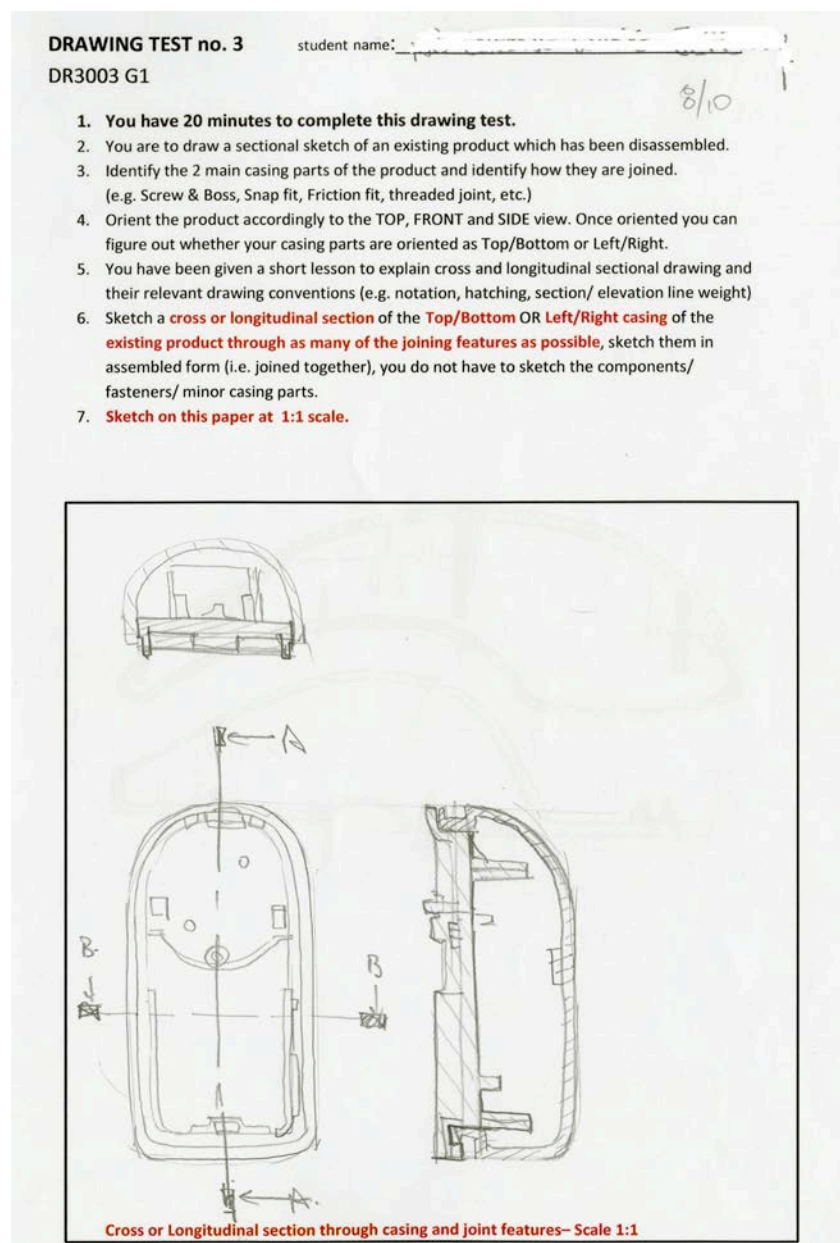


Figure 12: Sample post-test 2 drawing

Questionnaires

Game experience is vital as it determines user engagement and learning efficiency. Thus, through questionnaires, we can better understand users' subjective feelings during the gameplay and reflect on the answers of their learning outcome. Functionality, usability and aesthetics are three essential properties defining the quality of game experience (Calvillo-Gómez, E. H., Cairns & Cox, 2015). Since our game resembles a puzzle, the questions have more focus on usability, engagement and aesthetics.

In this study, we designed two questionnaires to collect user information and feedback after each learning phase.

The first questionnaire presented to the experimental group immediately after the 45-minutes gameplay was the usability questionnaire. It consists of four sections; the first

section was used to collect basic user information like age, gender, and their previous game experiences. The questionnaire was modified from a Game Engagement Questionnaire from a journal article in the Journal of Experimental Social Psychology (Brockmyer, Fox, Curtiss, McBroom, Burkhart & Pidruzny, 2009). The second and third section was designed to evaluate the usability and aesthetics from the Human Computer Interaction perspective. The questions in these two sections are referenced from papers in the Proceedings of the 2016 CHI Conference Extended Abstracts on Human Factors in Computing Systems (Bernhaupt & Mueller, 2016) and Computers in Human Behavior (Aldemir, Celik & Kaplan, 2018) and adjusted accordingly. Finally, there's a fourth section including questions associated with the learning effect. The second questionnaire is used for an overall study of the learning experiences after the instructional phase. Questions were selected and modified from the paper (Bernhaupt & Mueller, 2016).

Results

We carried out a systematic analysis after collecting all the data from the experiment. Since the study involves with-subject and between-subject design, the statistics and analysis methods, therefore, include the average values, paired t-test, and One-way ANOVA. Paired t-test was used to compare the before and after game performance of the experimental group. One-way ANOVA was performed to understand whether exam scores statistically differed between groups. The statistical analysis was conducted with IBM SPSS.

Results of Experimental Group

The results are presented in the following tables. The examination scores measured the mastery of the procedural knowledge of 3D spatial visualization. And the questionnaires are designed to reveal the usability of the game and quantify students' attitude toward such learning experiences.

Experimental Group	Pre test	Post test	Post test 2
Mean	5.50	6.13	7.75
SD	1.92	1.88	0.71

Table 1. The average scores of three paper exams

Exam score	N	Mean	P-Value
Pre-test	8	5.50	0.33>0.05
Post test1	8	6.13	

Table 2. Paired t-test result of Pre-test and post-test 1

Exam score	N	Mean	P-Value
Post test1	8	6.13	0.042<0.05
Post test2	8	7.75	

Table 3. Paired t-test result of post-test 1 and post-test 2

Exam score	N	Mean	P-Value
Pre-test	8	5.50	0.005<0.05
Post test 2	8	7.75	

Table 4. Paired t-test results of pre-test and post-test 2

Table 1 shows all the learning outcomes in sequential order. The results indicate a gradual improvement on the average scores of the students, and show significant improvement after they played the game with an average difference of 0.63 points. The performance continues progressing with an average difference of 1.62 points. Paired t-test results in Table 2 shows that in comparison with the pre-test, statistically, there is no enhancement on the learning outcome right after they experienced the game. Interestingly, the p-value in table 3 and 4 indicates statistical improvements after they complete the follow-up instructional courses.

Results of Control Group

Control Group	Pre test	Post test 1	Post test 2
Mean	4.83		5.67
SD	1.72		2.76

Table 5. The average score of two paper exams

Exam score	N	Mean	P-Value
Pre-test	6	4.83	0.54>0.05
Post test 2	6	5.67	

Table 6. The paired t- test of pre-test and post-test 2

The result shows that the improvement of the average score with traditional learning structure is limited (0.84). Meanwhile, the p-value further indicates that average scores of the pre-test and post test 2 were not significantly different.

Comparing two groups

We also conducted a between-group study to layout the difference after they've experienced the different learning strategies.

Pre test	N	Mean	P-Value
Experimental Group	8	5.50	0.52>0.05
Control Group	6	4.83	

Table 7. One-way ANOVA of pre-tests

Post test 2	N	Mean	P-Value
Experimental Group	8	7.75	0.02<0.05
Control Group	6	5.67	

Table 8. One-way ANOVA of post-tests 2

Although we can observe a small difference (0.67) between the pre-test means of two groups, the p-value shows statistically, there's no difference. A greater variation could be observed with a difference of 2.08 points. The p-value of the two post tests results is seen as a strong indicator of the experimental group outperforming the control group.

Results from the questionnaires

Detailed results collected from the questionnaire are presented as follows:

1. Basic user information: Among all the eight test subjects, three of them are male and five of them are female. Two of them often play games and 3/8 students consider themselves good at playing games and five of them prefer puzzle games. Although we have a very small sample size, it is interesting to find that there's gender difference in the favorite game genre.

2. Engagement and usability: The answers imply a more neutralizing attitude. Although the game is not as appealing to the students as we expected, 7/8 students have confidence in complete the whole gameplay. Six of them believed that their ability enhanced through the gameplay. Additionally, all of them agreed that the game objectives are very clear.

3. Learning Effect

All of the eight students agreed that through the gameplay, they could comprehend the importance of 3D spatial ability in practical application. And six of them thought that they could learn 3D sectioning ability more efficiently with the game. Six of them could correlate the virtual sectioning diagrams and 3D models with their visualization ability.

Discussion

Study within the experimental group

The significant differences in the results confirm the positive effect of our learning design. The progress of learning outcome is incremental. Although superficially, the potential impact of the game is limited from the test result, students shared positive comments on the intriguing game experience compared to the traditional experiences. The immersive gameplay activated players' inherent nature to investigate new knowledge and to keep pursuing correct answers. The challenges and levels of difficulty in the game established the proper atmosphere to engage students continuously. Game score points and level reports displaying mistakes and instructions served as efficient feedback for the students to maintain their focus on the game objective. The role of different designs of 2D sectioning images is not only applicable to puzzles or traps in the game, but also an indirect instruction of product design. Students agreed that the transformation from 2D section views to 3D models deepened their knowledge of 3D visualization. The game is designed as a medium to activate the notion of key learning concepts in developing 3D visualization skills. More importantly, students also shared feedback that the interactive learning experiences in the game had contributed to a reflection of the relation between 2D sectioning view and 3D perspective view. As shown in the results, students had achieved a much higher score after they received the instructions from the tutor. Such significant improvement implies a positive effect of productive failure learning design. The follow-up instructions were perceived by students as a reinforcement strategy to consolidate and enhance their 3D spatial ability.

Though the students could not directly master the entire concepts through the game, the impact of the game on developing the interest of 3D visualization could leverage knowledge and skills in the instruction phase. The correct solutions given by the tutor after post-test 2 further helped to redefine and enrich students' comprehension of 3D spatial skills.

On the one hand, students displayed relatively positive attitudes to the educational quality of the game. Yet, students also criticized that the game experience was comparatively boring. Students suggested that the game design needs further improvement to make it more appealing. One issue with the game design is that the levels were exposed to players at once. The paradox is that such design allows more freedom of choice, but the game appeared to be less mysterious and challenging. Different solutions could be attempted to address this issue. We could either unlock the levels by increasing difficulty or group the levels by difficulty and make players choose the difficulty while starting the game. As the game is structured as a puzzle, the number of solutions is limited and the best/ correct answer can always be found through several trials. As there is little narrative content in the game, it is a potential area to explore to maximize the potential power of narrative to immerse students more in the game.

Contrast between experimental group and control group

We also compared performances between two groups. Since there is no significant difference in the pre-test, it is reasonable to conclude that students in both groups had the same level of knowledge before the experiment. Thus, the significant difference in post-test is strong evidence indicating that the *Manufactory* game is effective in learning key concepts in university classrooms.

The positive feedback from the final questionnaire also indicated that students' learning experience was augmented with the game.

Furthermore, despite the opinions from some participants that failure in the game is frustrating, the students still appreciated the challenges and were motivated to find the best solution. Ultimately, the result demonstrated that game technology has potential to provide problem-solving contexts in PF phase while enhancing user engagement. It suggests that the medium to deliver the questions in PF was no longer constrained to plain text, as it could be more dynamic or interactive like a game.

Due to the limitation of data collection from games, we cannot statistically correlate the game performance with the learning outcome. Meanwhile, it is arguable that whether success could be allowed in the problem-solving phase of productive failure. Theoretically, playing a game is often a continuous process of alternating failure and success; it is difficult to capture the exact moment when a player fails and to keep tracking the performance after the failure. The team was unable to collect such detailed level of data and provide more precise analysis based on objective figures from the failure perspective. The results are limited to subjective opinions from students.

Conclusion

The purpose of the study was to explore the potential of a unique learning design incorporating educational game to enhance students' mental faculties, including abstract 3D visualization and learning ability. The study is a compound learning design. To weigh the impacts of game and PF, further study is recommended to obtain more detailed data collection relating to game elements and failures in games. The

study also needs a bigger sample size, for better comparison and analysis. In addition, we can observe different behaviors between male and female students during gameplay. The answer from the usability questionnaire implies gender preference. Thus, a reliable survey on user gender or player type will be interesting. The game design can be further improved to make it more appealing by maximizing the narrative component of the game; increasing challenges and difficulty in levels and improving the aesthetics and UI design. For this study, game technology was nested within the productive failure learning phases. Further studies could consider investigating the possibility of including productive failure mechanisms in games.

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***Improvement of Listening Skills of Thai Elementary Japanese Learners
Using the Top-down Shadowing Approach***

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

A common problem for Thai elementary Japanese learners is a failure in listening comprehension despite learning quite a lot of vocabulary and grammar. Thus, the author conducted a study by using the top-down shadowing approach for approximately three months to develop the listening skills of a group of Thai elementary Japanese learners. This study found that this approach could improve their listening skills, which enhanced their listening comprehension. A significant change involved the scores they achieved on the post tests, including the SPOT Test and the JLPT Test (Level 3). Based on an inquiry with the learners, they believed that shadowing was beneficial for the improvement in their listening skills and they would practice it on their own in the future.

Keywords: Listening Skills, Thai Elementary Japanese Learners, Top-down Shadowing

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Introduction

Communication plays a key role in human life, especially at the present time with an overload of information, which is called the globalization era. Beneficial to both to individuals and society, communication broadens knowledge and worldviews. Language is a critical factor in communication, especially with respect to both spoken and written language. In the globalization era, Thais need to communicate with foreigners more than in the past, for trade and investments, education, tourism, and daily activities. This has alerted Thais to the development of skills in foreign languages, e.g. English, Chinese, Korean, and Japanese.

According to a survey of Japanese language institutes overseas in 2015 by the Japan Foundation (2016: 1), in Thailand, there were 173,817 Japanese language learners, 606 Japanese language institutes, and 1,911 Japanese language instructors. These figures showed an increase from the 2012 survey. Across the country, there are many secondary schools and universities where Japanese is taught as a major subject. More and more Thai Japanese learners take the Japanese Language Proficiency Test (JLPT), which measures and certifies Japanese proficiency for non-native Japanese speakers held both inside and outside of Japan. Developed for measuring the overall Japanese communication proficiency level, the test consists of three parts – Language Knowledge (Japanese characters, vocabulary and grammar), Reading, and Listening. There are a lot of Thai Japanese students who have passed the JLPT at the N4 or N3 Levels but are poor in listening comprehension in actual conversations. Some may understand what is being said when they converse with others, but they are unable to respond, failing to communicate using their knowledge about Japanese grammar, vocabulary, or idioms in an appropriate manner in actual situations.

To develop learners' Japanese communication skills, different foreign language learning strategies are utilized, e.g. role play, listening skills training using computer programs, and shadowing. Tamai (2005: 37) defines shadowing as repeating what one has heard correctly immediately or a little while after, which is a basic technique for those who will become interpreters.

1. Related Research

There are a significant number of research works on shadowing-based language skill development for English learners, while that for Japanese learners is limited. Below is a discussion on the research on Japanese skill development using the shadowing technique.

Sakoda and Matsumi (2004) investigated the effects of shadowing of four native English speakers who studied in Japan, whose Japanese proficiency was at an intermediate level. They all had to practice shadowing in Japanese class once a week for a period of 10 months, during which their instructor recommended that they practice it every day, if possible. These learners were lent a portable audio recorder for shadowing practice. The 10-month experiment was divided into four periods. The experiment showed a dramatic increase in the number of words and parts of speech which they used from the first week to the fourth week. Furthermore, their working memory was assessed using the reading span test, which was held one month after the end of the shadowing practice. The test revealed an improvement in their Japanese skills at the end of the shadowing practice. Later, Sakoda & Matsumi (2005) carried

out an experiment to compare the effects between the shadowing and reading aloud techniques. The samples in this experiment consisted of 29 Korean university students who took a one-month Japanese course. They were divided into two groups, with Group A practicing shadowing and Group B practicing reading aloud approximately 15 minutes before and after class. The materials involved upper basic Japanese articles, each containing 500-600 characters. After the end of the practice, their Japanese proficiency was evaluated using the following tests: 1. SPOT Test, 2. Japanese Language Proficiency Test (JLPT, Level 3, Vocabulary, Grammar, and Reading Parts), 3. Dictation, 4. Digit Span Test, and 5. Listening Span Test. The finding was that the post-test scores of Group A learners were higher than their pre-test scores for the SPOT Test, JLPT Test, and Dictation. Group B learners' post-test scores were significantly higher than their pre-test scores for the SPOT Test and Dictation. The JLPT pre-test and post-test scores were similar. The post-test scores for the Digit Span Test were significantly higher than the pre-test scores for both groups, while their pre-test and post-test scores for the Listening Span Test were similar. Given the scores, shadowing and reading aloud resulted in an improvement in their Japanese proficiency and memory span. However, only shadowing enhanced their vocabulary, grammar and reading proficiency – it provided them with the improvement in their semantic processing proficiency.

Sakoda, Furumoto et al. (2006) investigated the effects of shadowing in a group of Japanese language learners with different Japanese proficiency levels. They were divided into three groups – elementary, intermediate, and advanced learners. In this experiment, the learners had to practice shadowing for 15 minutes before and after the Japanese class every day. This experiment utilized two sets of articles, the first one featuring a speed of 3.5 characters per minute and the other, five characters per second. After the end of the practice, they were evaluated through the following tests – 1. SPOT Test, 2. Japanese Language Proficiency Test (JLPT) (Level 3, Vocabulary, Grammar, and Reading Parts), 3. J Test, 4. Digit Span Test, and 5. Listening Span Test. A significant difference was only found between the pre-test and post-test scores of the JLPT Test (Level 3) and the J Test of elementary learners. This showed that even one-month shadowing dramatically affected their Japanese proficiency. The impact of the difficulty levels of these articles was assessed on 30 Korean Japanese learners, whose Japanese proficiency was at the same level. They were divided into two groups, with Group A using an immediate learner textbook and Group B using an advanced learner textbook. The speed and the number of words were controlled to be at the same level. The pre-test and post-test based evaluation involved the following tests: 1. SPOT Test, 2. Japanese Language Proficiency Test (JLPT), Level 1-2, 3. J-Test, and 4. Listening Span Test. The post-test test scores for the SPOT Test and JLPT Test for Groups A and B were significantly higher than their pre-test scores. For Group B, which used the advanced learner textbook, their post-test scores for the J-Test and JLPT Test were significantly higher than their pre-test scores in the listening and vocabulary sections. Given the scores, Sakoda & Matsumi (2007) concluded that using a textbook, the level of which is above learner proficiency ($i+1$), can improve learner proficiency.

Only one study on the effects of shadowing on Thai Japanese learners is available, which was conducted by Methapisit, T. (2011). This study investigated the impact of shadowing among Thai Japanese learners in terms of speaking skills improvement. The speed of reading aloud before and after shadowing and the accuracy of

pronunciation during shadowing served as indicators of speaking skills. The study found that: 1) Shadowing was beneficial to the improvement of speaking skills in terms of speed and fluency; 2) Shadowing helped to correct inaccurate pronunciation, and in particular, the accuracy of pronunciation was significantly better in the second practice; 3) Errors found in pronunciation included stress, intonation in compound words, pronunciation of words with *ち* or *つ*, pronunciation of loan words, and pronunciation of expressions at the end of a sentence.

2. Research Objectives

This research aimed to study the effects of shadowing through the use of two questions, as follows:

- 1) How much can shadowing improve Japanese listening comprehension?
- 2) What are the learners' views about the outcomes of shadowing?

Research Methodology

The research was divided into two parts – 1. Experiment and 2. Questionnaire-based survey. The experiment consisted of the following:

2.1 Sample group

The samples of this research consisted of 27 Thai elementary Japanese learners, four of whom passed the JLPT Test, Level 5.

2.2 Lessons in the experiment

The lessons in the experiment consisted of text and audio files from the textbook entitled “Listening Tasks For Beginners Everyday Listening in 50 days Vol.2” 『初級日本語聴解練習 毎日聞き取り50日 下』 (L), published by BONJINSHA.

4.3 Shadowing process

- 1) Listening
- 2) Mumbling
- 3) Synchronized reading and checking meanings.
- 4) Prosody shadowing.
- 5) Content shadowing.

The learners practiced shadowing for 10-15 minutes at the beginning of the class twice a week for a period of 10 weeks. For each class, the learners were given an assignment to practice shadowing. In the subsequent class, each of the learners was asked to shadow the article they had reviewed in class.

2.3 Data collection and analysis

The assessment of the listening skills development of the experimental group was conducted using the following pre-test and post-test questions:

- 1) SPOT (Simple Performance-Oriented Test)

Developed by Tsukuba University, this test aims to evaluate the actual Japanese proficiency of learners. A sentence with one pair of brackets appears on the screen and the audio track for the sentence is played simultaneously. After listening to the track, they have to select one of four hiragana choices to fill in the brackets (Obayashi et al.: 1995).

- 2) Old JLP Test (Level 3, Listening Part)
- 3) Statistical analysis and questionnaire-based inquiry.

2.4 Results and Discussion

Shadowing helped to develop Japanese listening comprehension based on the pre-test and post-test results.

1) SPOT pre-test and post-test results

Table 1: SPOT Pre-Test and Post-Test Results (27 Samples)

	Pre-Test	Post-Test
Mean (M)	71.59	81.70
Standard deviation (S.D)	6.27	3.48

The mean post-test scores of the SPOT Test had approximately a 10 point increase. The standard deviation (S.D.) of the pre-test scores was 6.27, and that of the post-test scores had a 3.48 decrease, which showed that the listening ability of the sample group had a similar increase.

2) JLPT (Level 3) pre-test and post-test results

Table 2: JLPT (Level 3) Pre-test and Post-test Results (27 Samples)

	Pre-Test	Post-Test
Mean (M)	81.15	86.07
Standard deviation (S.D)	2.78	3.60

The post-test score of the JLPT Test, Level 3 test showed a significant increase (2.78 → 3.60, $df = 26$, $t = -5.93$, $p < 0.05$).

1) Summary of shadowing in the experimental group.

Table 3: Summary of the Results of Shadowing Practice in the Experimental Group

No.	Item	Mean score (Out of 5)
1	I feel that my listening skill after shadowing is better than before shadowing.	4.32
2	While shadowing, I think of the content of the article I have listened to.	4.21
3	While shadowing, I understand the content without translating it into Thai first.	3.98
4	While shadowing, I think of the sentence structure at the same time.	4.35
5	While shadowing, I use the basic knowledge about that matter to improve my comprehension.	3.72
6	Difficulty and easiness of the content affects shadowing practice.	4.24
7	Speed of reading of the content affects shadowing.	4.16
8	Shadowing allows me to have better comprehension of what I have listened to.	4.58
9	I like shadowing and will practice it on my own.	4.45

The questionnaire used for surveying the experimental group's opinions about the effects of the shadowing technique consisted of five rating-scale points (1-5): Strongly disagree, Relatively disagree, Neutral, Relatively Agree, and Strongly Agree. There were 27 respondents. The mean scores are presented in Table 3.

As it can be seen from the above table, the group of learners strongly agreed that their listening skills were better than before shadowing. They believed that shadowing provided them with a tool to have a better comprehension of what they had listened to. This was because while shadowing, they thought of the sentence structure, which provided them with listening comprehension without having to translate it into Thai. This enhanced their overall Japanese listening skills. They also believed that the level of difficulty of the content had a great impact on shadowing and that the speed of the audio tracks affected their shadowing practice.

Conclusion

Based on the two objectives of the study, the following conclusion was developed:

- 1) Shadowing helped to improve listening skills of elementary Japanese learners, which resulted in improved listening comprehension. A clear improvement was witnessed through the post-test scores for the SPOT Test and JLPT Test (Level 3). This was because top-down shadowing practice helped the learners to observe sentence structures and understand the overall contents of the articles without having to translate them into Thai first.
- 2) According to the inquiry with the learners, they felt confident that shadowing was beneficial to the improvement of their listening skills. More importantly, they liked to practice shadowing and said they would practice it on their own in the future.

This research was experimental research, which had the following limitations:

- 1) The number of samples was limited, which made it impossible to compare two groups: with and without shadowing practice. In addition, the results between the bottom-up shadowing and top-down shadowing should be assessed in order to identify how the shadowing practices will have an impact on listening skill development. Furthermore, the experimental group's proficiency should be evaluated using standardized tests to ensure that they do not have a different Japanese proficiency level.
- 2) The evaluation of learners' language proficiency should include a test which encompasses all skills, e.g. role-play.

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The Context of Curator in the 21st Century: A Study at Museums in Bangkok Area

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

The purpose of this research is to study the context and progression of curator in the 21st century. Since the millenium, the flood of technology and economy growth significantly affected the context of curator. The curator is not only a keeper or collector of digital data cultural heritage as before, but must also be a marketer and organizer as well. The research instrument is the in-depth interview with curators from 4 museums located in Bangkok: 1) Museum Siam 2) Rattanakosin Exhibition Hall 3) Suan Pakkad Palace Museum 4) Sai Suddha Nobhadol Building Museum. The result are that 3 out of 4 (75%) agreed that the stream of technology and economic is the main factor affecting the curator context. All about 100% agreed that marketing and coordinative skills are required as a context of the 21century curator. In conclusion, the context of curator is not a curator literally, but additionally business knowledge especially marketing and coordinative skill must be cultivated.

Keywords: the 21Century Curator, Museum, Museums in Bangkok

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Introduction

Since the millennium, the flood of technology and economy growth significantly affected the context of curator. The curator is not only a keeper or collector of digital data cultural heritage as before, but must also be a marketer and organizer as well. Curator now can't be only experts in their own field, but curator need to be tech operator, researcher, statistic planner, marketer, project manager, and more with underpaid salary. (Museum association, 2004) This situation decrease work concentration of curator in general.

Technology plays the important role in the world society now, especially computer-mediated technology and taking time to develop overtime. "A good number of technologies now coming into use will take years or even decades to reach the point of significant consequence for society. On the other hand, the history of technology in the industrial era tells us that it is usually fifteen to forty years from the time of a fundamental scientific discovery to its effective application in society" (Coates, Joseph & Jarratt, 1998). Curating context also change over time in term of character and data collecting. Curator context of 21 century might be affected by stream of technology and economic. It is important to know what is particularly the main factor that cause significant change.

The Visitor

Museum visitor is also changing attitude or purpose of museum visiting over the time. Each visitor has individual reason that incurs them to visit the museum, which mean different ages or gender is part of individual decision making.

Katie Gillespie and Dr. John H. Falk analysis from 22 museum visitors revealed that four factors seemed to influence the memories of all 22 of these visitors are things or activities that interests and support their needs, things that were novel, things that had high individual emotional content, things that were supported by later experiences (John H. Falk, 109)

Knowing what the museum visitor needs is meaning the same thing that knowing what is your customer needs.

Digital Museology

Data collecting and searching of museum now is digital, which mean most of museum now need to compete in term of data collection standard. In term of economy, the growth of computer media makes a change in economic system too. "Museums are an enlightenment dream that has prospered in the face of capitalism and globalization, and now needs to find a new way to prosper in the age of digital economics" (Chris Michaels, 2017). Curator is really important part of building the core and develops data collection system, which is different from curator context in the past. The result from interview specialties and expert curator in Bangkok will be valuable.

The purpose of this research is to study the context and progression of curator in the 21st century. And by in-depth interviewing with curators from 4 museums in Bangkok, will indicate better and deeper understanding to 21 century curator in real

time. What curator needs to develop or manipulate in the future. Nowadays, curator is not only a keeper or collector of digital data cultural heritage as before, but must also be a marketer and organizer as well. The museum itself is a business company. Curators need to adapt the different role depend on the situation. Sometime, they need to be organizer, marketer, or even the dealer of the event or activities, or even many others. (Museum association, 2004) Curator now need to develop knowledge in this research to give most direct solution for both develop curating society and be satisfied the future visitor as well.

Methodology

The reach out the most accurate information in-depth interview with specialty. The research instrument is in-depth interview with curators from 4 museums located in Bangkok:

1) Museum Siam, this museum was found in 2007 by Thai government. The concept of this museum are play and learn philosophy. The exhibition in this museum is all about Thailand social history. “The Museum has also presented a series of temporary exhibitions, ranging from “Beads of Southeast Asia,” ”The Portugese: At World’s End,” to the recent ”The Body Project: Rethinking the Concepts of Beauty”. It has also created a large museum network in Thailand to help each other in many aspects” (Asemus, n.d.).

2) Rattanakosin Exhibition Hall is a museum that collects the history of Rattanakosin era and also represent in many different type of exhibitions. On March 9, 2010, the museum had been launched officially and represent cultural legacy and Rattanakosin resources for the first time.

3) Suan Pakkad Palace Museum, this museum represents the royal highnesses prince and princess Chombhot of Nagara Svaga private residences. There are 4 Thai tradition houses collect historical Thai Traditional items, such as BanChiang and Marsi gallery.

4) Sai Suddha Nobhadol Building Museum is the resident of royal family. The museum is the building itself that represent beautiful architect. Highlight of this museum is Duriya Kastr exhibition. All of the museum have its their own identity and qualify for being parts of the interviews.

The question of the interview is about the personal opinion on curator context of 21 centuries. The discussion questions divide into 3 different categories, personal information, experiences and proficiency, and context of curator in 21 centuries.

For personal information, the question will discuss on different background of interviewed participants to get point of view on how to become a curator. The experiences will be also discussed with most following questions. It really important to understand participants because It will be used in case of comparing. By comparing, we will eventually get the best result out from the interview. The final category remains most important interview section because this section experienced curators will represent their opinion on context of curator in 21 centuries.

This is the part of interviewed questions: 1) what is your definition of Curator? 2) What you need to do as a curator in your museum intuition, and Global context is continued changing? 3) How is it affect the contextualization of the curator? 4)The result will indicate the skill that curator in 21 century need from experience curator perspective? The results will indicate the skill that curator in 21 century need from experience curator perspective.

Result

The result are that 3 out of 4 (75%) agreed that the stream of technology and economic is the main factor affecting the curator context (Figure 1). Participants strongly agree that those skills are needed. Nowadays, technology and online communication are become everything. One of interviewed participants mentions that “to work in 21 centuries, you need to know staffs online.” By this statement, it means curators also need to know at least some aspect of technology. Technology topic that will be discussing in this paragraph are marketing and coordinating. In one section of the interview is about working as business people. All of interview participants has experience in the world of business. Museum is now a business, and need to promote for getting more visitors. (Chris Michaels, 2017)

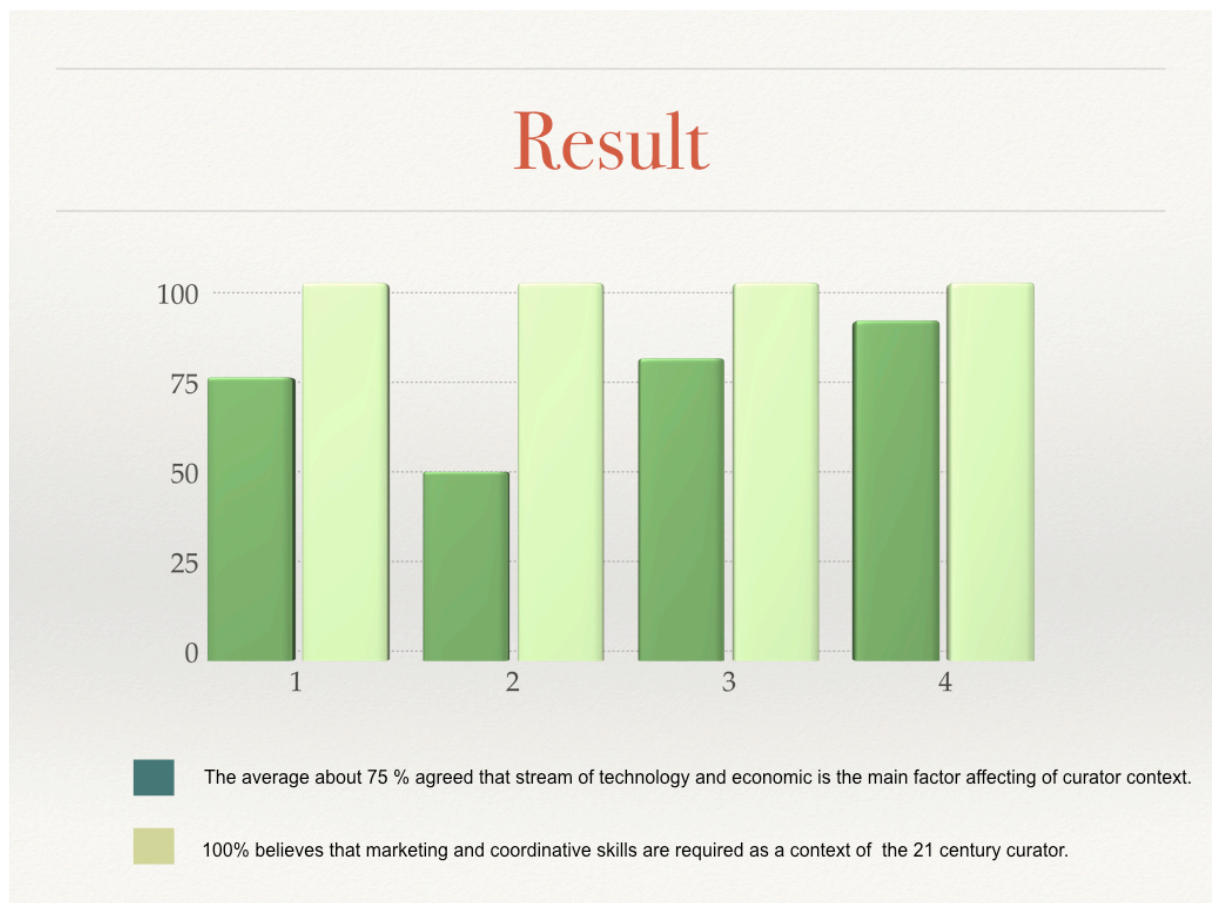


Figure 1: Result from curator in-depth interview

Curator need to have that skill in order to maintain the growth of the audience. Moreover, curator now need to organize the event, so coordinative skill is required too. One curators from the interview section mention interesting opinion, “Curator is not a curator anymore. We are an entrepreneur” The tone of the opinion

set really strong emotion on work responsibility. “Curator responsibility is not to run the business or sells like an entrepreneur” said interviewed curator”. It means curator contexts from what we know need to change now.

Some of interviewed participants still not think that telecommunication or technology growth is not the main cause of curator context change. Those don’t need to be change just need to be improve to be more conservative. 25% still think that curator context should remain the same as before because others category of technology and economy jobs in the museum require specific skill. When curators can focus on their tradition contexts, they are likely to work professionally. If curator took many part of it. It might have negative effect on the main character of context.

In question no. 3 of the interview most of interview participants suggest that marketing and collaborating skill are important context of 21 century curator. And, the result are about 100% participants agreed that marketing and coordinative skills are required as a context of 21 century curator.

Conclusion

In conclusion, the context of curator is not a curator literally, but additionally business knowledge especially marketing and coordinative skill must be cultivated. The result make researcher understand that future curator need to be multi skills based. They need to do those in order to maintain the condition of museum in general. Although, many curators disagree on doing others tasks that they aren’t related to traditional curator context. Those others skills include IT operator or accouter require specific skill sets. So, those skills need some experts to be in charge. In further research, one of participants suggest that researching on museum visitor behavior pattern is might be another great topic to touch on. We understood how curator thinks now. It times to understand your future visitor.

Acknowledgement

Suan Sunandha Rajabhat University
Staff of Music Department
Staff of Sai Sunandha Noppadol
Museum Siam
Rattanakosin Exhibition Hall
Suan Pakkad Palace Museum
Sai Suddha Nobhadol Building Museum

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*The Effects of Software Interaction Mode on Nominal Group Creativity in
Online Classes*

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Asian Conference on Education 2018
Official Conference Proceedings

Abstract

When students work together in a group in an online class, often times they work in a “nominal group”—a term used to address the situation when individuals work separately—rather than an actual group. This paper focuses on an electronic brainstorming task in nominal groups in online classes, where group members can work from their own location and generate ideas independently rather than sharing them with other group members. A facilitator, or one of the group members, is responsible for collecting and collating the ideas at the end of the brainstorming session. Some research has shown that nominal group can result in higher performance than actual groups. This paper also examines creative software interactive mode, the factor that is believed to influence group performance in electronic brainstorming, and its effect on idea creativity in nominal groups in online classes. There are two major software modes: graphic and outline, and users can switch between the two modes or stay with one mode. We aim to investigate how three different uses of the interaction mode (graphic, outline, and switching between the two) can affect group performance of online nominal groups. Group performance is assessed by four aspects of idea creativity (fluency, flexibility, elaboration, and originality). We believe that our findings will have an academic implication for educators who are teaching ever-growing online classes, as well as for researchers who are interested in electronic brainstorming or other Group Support System (GSS) tasks in different time/place settings.

Keywords: Nominal group, idea creativity, online classes, electronic brainstorming, software interactive mode

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Introduction

Students often work in groups when they are enrolled in a class, whether it is a traditional face-to-face or an online class, and students' group work often involves idea generation. Idea generation has been described as a process that produces a list of ideas—either by a group or by an individual. Of all the idea generation techniques, brainstorming is the most basic and most frequently used technique (Hender, Dean, Rodger, and Nunamaker, 2002). Brainstorming is the implementation of the free-thinking technique originally proposed by Osborn (1957). Researchers (Hender et al., 2002; MacCrimmon and Wagner, 1994) have reported that brainstorming is a useful technique for organizations seeking to be more innovative.

Several Group Support Systems (GSS) studies have investigated the impact of brainstorming tools in electronic brainstorming. The use of electronic brainstorming tools can resolve several issues, including anonymity and evaluation tone (Connolly, Jessup, and Valacich, 1990), group size (Gallupe, Dennis, Cooper, Valacich, Bastianutti, and Nunamaker, 1992), production blocking (Valacich, Dennis, and Connolly, 1994), and facilitator effects (Anson, Bostrom, and Wynne, 1995). Though past GSS studies have focused on different aspects of electronic brainstorming, none of these studies has investigated in depth the use of various software interactive modes in different group settings, the features that help facilitate the brainstorming process on nominal and actual brainstorming groups in online classes.

Electronic brainstorming can be done both in a virtual group and in nominal group. Nominal Group Technique (NGT) is a systematic approach to soliciting individual inputs into group project design and planning (Asmus and James, 2005). In online classes, students typically participate from different locations, whether synchronously or asynchronously, resulting in nominal group work rather than actual group work. Studies (Kramer, Fleming, and Mannis, 2001; McGlynn, McGurk, Effland, Johll, and Harding, 2004; Rietzschel, Nijstad, and Stroebe, 2006) have shown that nominal groups outperform face-to-face groups and generate more ideas than interactive groups. Also, the ideas generated by nominal groups are more original than the ideas generated by interactive groups. Like computer-mediated communication, NGT can be used to hide or avoid the identification of the source and thus reduce process loss or production blocking because the group members do not have to wait for their turn to contribute their ideas (Dennis and Reinicke, 2004).

This study addresses the software interactive mode and group settings as an important factor that influences idea creativity in both nominal and actual groups. In this context, group performance is assessed via four aspects of idea creativity: idea fluency, idea flexibility, idea elaboration, and idea originality.

Nominal Group Technique in Electronic Brainstorming

When it comes to group work, most people tend to think about actual groups rather than nominal groups. However, the concept of nominal groups has been examined in GSS research. The term “nominal group” is used to address the situation when

individuals work separately (Gallupe and Cooper, 1993; Gallupe et al., 1992). In nominal brainstorming, group members can work in the presence of each other or work from their own location. The members generate their ideas independently rather than sharing them with other group members, and a facilitator or one of the group members is responsible for collecting and collating the ideas at the end of the brainstorming session (Dennis and Reinicke, 2004). Thus, there can be very little or even no communication within the group in the idea generation stage. However, when a facilitator collects the generated ideas, she has to communicate with the other group members and the level of communication in this stage can be high or low.

Nominal group technique has several advantages over actual group technique. For example, all group members have equal opportunity to participate in the group activity and thus participation is balanced among group members (MacPhail, 2001). Production blocking and/or process loss cannot occur in the nominal group setting, and no one can dominate the group activity. Hence, both nominal group technique and computer-mediated communication (such as electronic brainstorming) have advantage of avoiding the blocking effect or the identification of the source (Pissarra and Jesuino, 2005). However, group members' evaluation apprehension depends on the structure of the brainstorming session. Evaluation apprehension will decrease if the ideas are submitted anonymously, and evaluation apprehension will increase if the ideas are not submitted anonymously (Dennis and Reinicke, 2004).

Several researchers have reported that nominal groups generate more ideas than actual groups. Dennis and Valacich (2001) pointed out that the synergy or cognitive stimulation that group members received in an [actual] electronic brainstorming group was an important difference between electronic brainstorming group and nominal group. Synergy is from the pool of ideas generated by and shared among the group members in electronic brainstorming. This is similar to the concept of group memory discussed by Satzinger, Garfield, and Nagasundaram, 1999. Nominal groups do not interact and thus do not have the synergy, cognitive stimulation, or group memory. However, Dennis and Valacich (2001) claimed that nominal groups generated as many or more ideas than [actual] electronic brainstorming groups for groups of eight or fewer members. Actual electronic brainstorming groups outperformed nominal groups only when there are nine or more members in the groups. Similarly, a study by McGlynn, McGurk, Effland, Johll, and Harding (2004) also reported that nominal groups of four individuals outperformed face-to-face groups of four individuals in brainstorming performance, yet the advantage of nominal groups declined when brainstorming took place later in the task where there was a large amount of accumulated evidence to consider.

A study by Dowling and St. Louis (2000) explored whether computer-assisted asynchronous (CAA) implementations of the nominal group technique (NGT) were as effective as noncomputer-assisted synchronous (NCAS) implementations of the nominal group technique. An experiment was performed to compare the outcomes for groups that used the nominal group technique both synchronously and asynchronously. Their study reported that computer-assisted asynchronous implementations of the nominal group technique were more effective than

noncomputer-assisted synchronous implementations; that is, they generated more and better ideas in less time. According to these authors, the results implied that if meeting participants did not have to come together at the same time and were spending more time than was necessary in meetings, then organizations were wasting substantial economic resources in the form of travel expenditure and time spent arranging, traveling to, and participating in meetings.

Barki and Pinsonneault (2001) used four brainstorming technologies: nominal brainstorming, verbal brainstorming, electronic brainstorming-anonymous, and electronic brainstorming-non-anonymous, and compared the effectiveness of these technologies in terms of idea quality. In their study, nominal brainstorming sessions allowed each participant to generate ideas individually and keyboard them without interacting with other members of their group. The results indicated that nominal brainstorming groups generated ideas that were at least as good as electronic brainstorming groups. The authors explained that the participants might have perceived the brainstorming topics as being socially more or less sensitive depending on their individual experiences; that group members might have generated the connection and involvement as a group since they brainstormed four times during the experimental session, and ad hoc groups did not remain “purely ad hoc” after the first task; that the synergy and stimulation effects of electronic brainstorming might not actually be as strong as they were initially believed; and that small electronic brainstorming groups might not be able to produce ideas of better quality than small nominal brainstorming groups (Barki and Pinsonneault, 2001).

Other researchers have also reported similar results. For example, a study by Kramer et al. (2001) revealed that actual, face-to-face groups generated as many ideas as nominal groups when the face-to-face groups were assisted by a trained facilitator. Rietzschel, Nijstad, and Stroebe (2006) also indicated that nominal groups generated more ideas than interactive groups and the ideas generated by nominal groups were more original and less feasible than the ideas generated by interactive groups.

The aforementioned results seem to indicate that in participating in online class group work, nominal groups can result in greater performance than actual groups. However, we believe that it is appropriate to conduct our research on both nominal and actual groups in order to investigate the impacts of different software interactive mode in different group settings.

Software Interactive Mode

This study explores a specific feature of idea generation software, the software interactive mode, and examines how different software interactive modes affect the outcome performance of electronic brainstorming in nominal as well as actual group work in online classes.

Software Mode: Graphic and Outline

Different idea generation software provides different features; nevertheless, there are features they have in common. Examples include anonymity of group members, graphical aid in the brainstorming session, a tutorial on the problem-solving process, a storage area for recording ideas, etc.

Most creativity software contains a feature that organizes ideas in outline or graphic interaction mode. The software's outline mode is a text-based configuration that facilitates users in prioritizing and rearranging ideas or topics by using notes text, toolbar, and checklist features. The graphic mode is a graphical configuration that includes diagrams, pictures, icons, symbols, arrows, etc.; hence, users can differentiate the generated ideas with colors, shapes, patterns, shadows, fonts, and styles. The software's outline mode allows users to transform their thoughts into written statements, while the graphic mode enables users to create diagrams, concept maps, and transform their ideas into different graphic forms. The graphical aid, sometimes referred to as a "Diagram View," can help "visualize" the idea generation process and hence provides better understanding for the group members. The outline feature, referred to as an "Outline View," allows users to transform their thoughts into the foundation of written projects. Both graphic mode and outline mode are believed to result in clearer thinking, more creative projects, better organized writing, and improved group performance. Figure 1 shows the graphic and outline modes of a creativity software package.

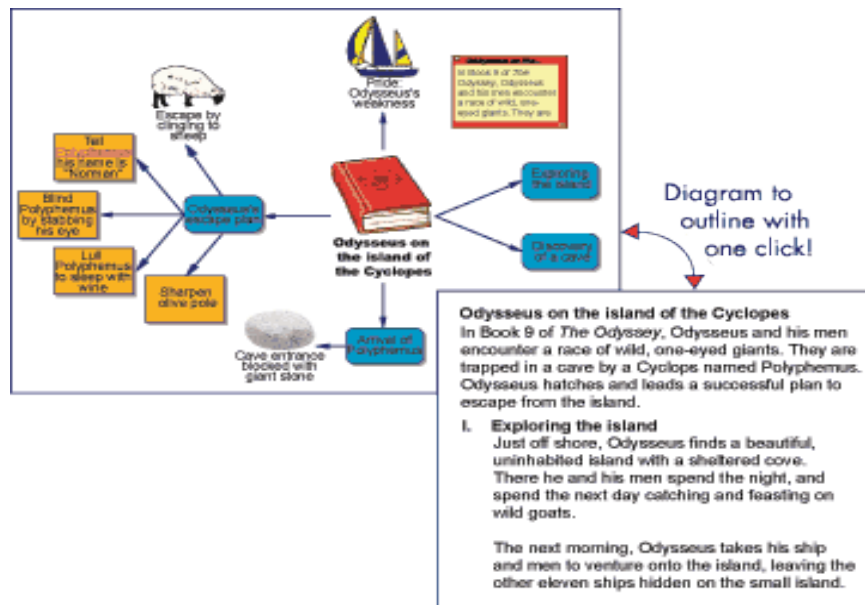


Figure 1: The Graphic/Outline Interaction Mode of Creativity Software.

Besides the problem statement and emerging pool of ideas, additional stimuli such as ideas generated and browsed by other group members can influence group members' creativity. Productivity can be increased by utilizing the stimuli that intentionally lead users' attention to different parts of the solution space (Hender et al., 2002). The software's graphic/outline mode can demonstrate the problem statement and the ideas generated by other group members, which can act as the creative stimuli for the

creation of further ideas. A single stimulus often activates different associations across group members because each member has already developed a different set of associations, and the stimulus then exposures to others' ideas activates additional frames (Hender et al., 2002).

Madsen and Finger (1978) suggested that the written feedback procedure—group members generating ideas independently (as in nominal groups), receiving written copies of each other's ideas, and then resuming to work independently—yielded higher productivity than group brainstorming does. Similarly, a study by Paulus and Dzindolet (1993) indicated that performance levels in brainstorming groups were strongly affected by exposure to information about the performance of others, and that social matching of low performance levels by interactive group members might be an important factor in the productivity loss observed in group brainstorming.

In one experiment, presenting three subproblems instead of a combined intact problem resulted in an increase in three combined quantity/quality measures: number of unique ideas, total quality, and number of good ideas. In addition, the production of more unique ideas with a higher concentration can be achieved by providing verbal and visual cues—question derived from criteria for effective solutions (Hender et al., 2002)

Even though both graphic mode and outline mode are believed to enhance the performance of electronic brainstorming, the graphic mode is more visual than the outline mode and studies have shown that high visual subjects perform better than low visual subjects (Davis and Bostrom, 1992; Hawkins, 1999; Marinilli, 2003; Virvou and Kabassi, 2002).

Perception of Group Performance in GSS Research

Various measures of the performance of groups have been discussed in the literature. Some example are quality of group discussion (Benbunan-Fich et al., 2002); task completion (Fisher and Kingma, 2001; Holsapple and Joshi, 2002; Kamel and Davison, 1998; Lee, Strong, Kahn, and Wang, 2002) process satisfaction (Connolly et al., 1990; Mejias, Shepherd, Vogel, and Lazaneo, 1997; Miranda and Bostrom, 1999; Reinig, Briggs, Shepherd, Yen, and Nunamaker, 1996; Reinig 2003) and outcome satisfaction (Mejias et al., 1997; Huang, Wei, and Tan, 1999) However, this paper focuses on the idea generation task and proposes that idea creativity is an important indication of group performance in the idea generation setting. Idea creativity is discussed in the following section.

Idea Creativity

Creativity is defined as the quality of creating rather than imitating, and *creative ideas* are original rather than regular, newly created rather than “picked off the shelf” (Gautam, 2001). Sosik, Kahai, and Avolio (1998) define *group creativity* as a group's divergent production of ideas and claim that researchers have paid much attention to group creativity when examining groups interacting in face-to-face meetings. There

are four basic categories of divergent thinking: fluency, flexibility, elaboration, and originality (Sosik et al., 1998). *Idea fluency* is the number of ideas generated by groups, *idea flexibility* is the number of approaches used to produce solution units, *idea elaboration* is the number of comments that add detail of new features to a solution, and *idea originality* is the number of original solutions (Sosik et al., 1998). We assess idea creativity using all four aspects of divergent thinking.

Even though the notion that there is a positive correlation between idea quantity and idea quality has not yet been theoretically supported or empirically examined, researchers have proposed this relationship. While the notion of a constant proportion of high quality ideas to all ideas generated has yet been refuted, we believe it is acceptable to include idea fluency as one of the four dimensions of idea creativity.

Research Questions

This research suggests that group setting (nominal or actual) in online classes, as well as idea generation software interactive mode, can significantly influence idea creativity in electronic brainstorming—assessed by idea fluency, idea flexibility, idea elaboration, and idea originality. Our research model and research questions are stated below.

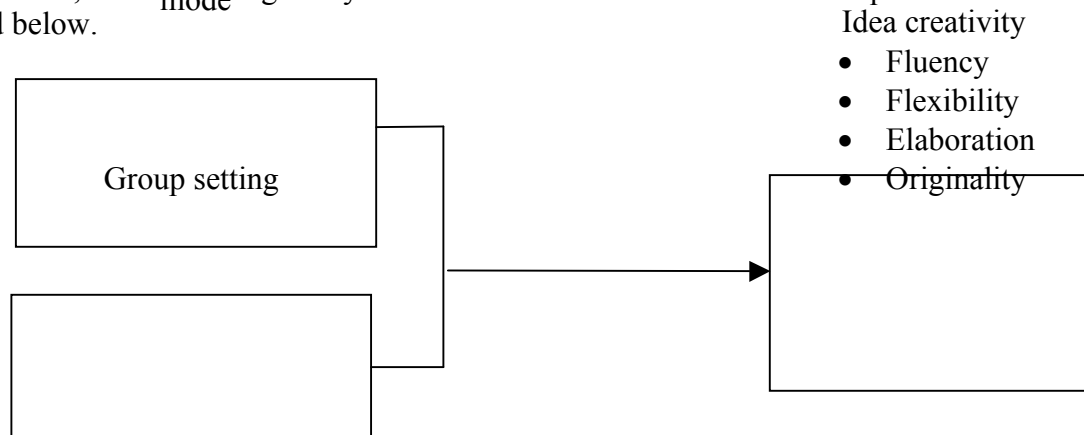


Figure 2: Research Model.

Question 1: How does idea generation software interactive mode (graphic/outline/switching between the two) affect group's idea creativity?

Question 2: How does group setting (actual/nominal) affect group's idea creativity?

Question 3: How does the interaction between idea generation software interactive modes and group setting affect group's idea creativity?

Conclusion

This study focuses on the effects of the use of software interactive modes on different group settings—nominal and actual groups—in online classes. We plan to employ an experiment using undergraduate and graduate students enrolling in an online class and

engaging in a specific idea generation task. Students will be randomly assigned to a nominal or an actual group. The idea generation software modes will be manipulated such that groups will be provided with graphic mode, outline mode, or switching between the two modes. In addition, idea creativity (idea fluency, idea flexibility, idea elaboration, and idea originality) will be assessed through existing measures in the GSS field (Connolly, Jessup, Valacich, 1990; Sosik, Kahai, and Avolio, 1998; Torrance, 1965), and data will be analyzed to identify the significant relationships within and between each experimental condition.

This study is not without limitations. First, this study assumes a one-time meeting of the electronic brainstorming groups while in reality there could be multiple meetings, which may increase or decrease the effectiveness of the brainstorming session. This repeated usage could create “group history” which affects group members’ interaction, perception, or sense of belonging to the group. A longitudinal study may provide different results (Giovagnoli and Romano, 2004; Huntley, 2003; Kemerer, 1992).

Another limitation is the use of university students. However, this study focuses in electronic brainstorming in online classes and university students are an appropriate group of users. We also employ a simple task (idea generation) and thus assumes that students can accurately represent business people that conduct electronic brainstorming in their job. Therefore, we believe that using students should have a negligible effect on the result’s generalizability when applying the results of this study to practitioners outside of classroom.

We believe that the results of this experiment will have both practitioners and academic implications. Practitioners such as managers and educators can use the results of this study when brainstorming in different group settings (nominal and/or actual groups), especially in online classes. These practitioners will be able to identify the best software interactive mode (or a combination of modes) and best group setting, according to their group setting in order to achieve the highest degree of idea creativity. Researchers can further investigate the interaction and correlation between the software modes, group settings, and idea creativity. The results of this study can be used as a guide for future research in GSS-support activities such as multiple use of software, which will create group history. Future research can also examine different subject pools such as managers, designers, etc. instead of students. This stream of research can also help our understanding of group performance in both online classes and business settings.

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*A Study on a Method of Integrating AR Markers into a Foreign
Language Learning System for Task-based Activities*

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

In this paper, we investigate a method to integrate Augmented Reality (AR) into a foreign language learning environment for task-based activities. We accomplish that task by focusing mainly on two objectives. First, AR markers can be applied to integrate some objects into the language learning environment as learning materials. Second, movement of an AR-tagged object used in the activities can be recognized and tracked, based on the AR marker's positional information. AR technology is the integration of digital information with the user's environment in real time. AR uses the existing environment and overlays digital information on it. We developed a prototype tool with the AR markers, and conducted an experiment to investigate the objectives mentioned above. In the experiment, 22 university students participated in the activities with the prototype tool. Concerning the first objective, the results of the experiment suggest that the prototype tool is easy to use as learning materials. The tool with the AR markers shows the possibility of achieving task-based style activity objectives. Concerning the second objective, an AR-tagged object moved by the learner was successfully recognized and tracked by the system in the activities. The results suggest that the AR marker's positional information could help track the learner's movement in the learning activities. It should be noted that the ability to track an AR marker sometimes suffers from the problems caused by the amount of light in the classroom. Evenly distributed light is preferable when trying to identifying and detecting AR markers.

Keywords: augmented reality, task-based activities, foreign language learning system

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Introduction

With the rapid advance of globalization, the development of proficiency in English as a common international language is crucial for Japanese students. In 2020 the Tokyo Olympic and Paralympic Games will be held. With an eye to those events, the Ministry of Education, Culture, Sports, Science and Technology-Japan (MEXT) (2014a, 2014b) will proceed with studies on new reforms of English language education.

In order to promote foreign language communication skills, providing students with more opportunities to use English should be considered. The TPR (Total Physical Response) approach and task-based foreign language activities are expected to be among the methods employed to improve oral proficiency in English.

Constructing a foreign language learning environment could be one of the measures to support task-based activities based on the approach mentioned above. In particular, if we apply Augmented Reality (AR) technology, it is possible to embed real-world objects into the language learning system as learning materials.

AR technology is the integration of digital information with the user's environment in real time. AR uses the existing environment and overlays digital information on it. There are two main approaches to generate events from AR: marker-based and placed-based. Placed-based AR uses GPS-supplied locations, similar to Pokémon GO. Marker-based AR relies on optical sensors and uses a camera with some type of visual marker to produce a result only when the marker is sensed by a reader (Kato, 2002). Distinct, but simple, black and white square printed patterns are used as the markers. These patterns are used because they can be easily recognized and do not require a great deal of processing power to read. The position and orientation are also calculated, using a process in which some type of content or information is then laid over the marker.

Research projects with AR applications have been conducted to help teach vocabulary in situated, task-based language learning (Li et al., 2014; Valle, 2014; Godwin-Jones, 2016; Santos et al., 2016). In these projects various types of multimedia information, such as text, audio, images, and animations are associated with physical objects attached to the AR markers in order to enhance language learning.

In our study, we consider applying the positional information of AR markers to the learner's activity logs. Based on our previous research (Kashiwagi et al., 2013), in this paper we investigate a method of implementing a task-based foreign language learning system by using AR markers. In doing so we focus on the following two objectives:

- (1) The AR markers can be applied to integrate some objects into the language learning system as learning materials;
- (2) Movement of an AR-tagged object used in the activities can be recognized and tracked by the system, based on the positional information of the AR marker.

With regard to objective (1), we use some objects as learning materials by attaching AR markers to them. That way, learners can interact with the system using these

objects. Learners are required to respond to the instruction from an instructor. An instruction might be the following: “First, go to the department of internal medicine, then go to the department of otolaryngology.” The learner would then move an AR-tagged object to the appropriate places on the map. Interaction between a learner and the system’s AR-tagged object implements task-based activities that differ entirely from repetitive model conversation practice. We anticipate that learners will gradually acquire words and expressions using such activities in a simulative manner.

With regard to objective (2), the AR marker’s current position is recognized. Movement of the AR-tagged object and the time logs are tracked and saved in the system. These activity logs are expected to allow teachers to better understand individual learner’s learning process.

In the next section, we describe the prototype tool. The experiment, its results and a discussion are included in the following sections. Finally, we present our conclusions and recommendations for further studies.

Prototype Tool

In this section, we present a prototype tool in which AR markers and a map are integrated.

AR Markers as Learning Materials

Figures 1 and 2 illustrate the prototype tool developed in this study. As shown in Figure 1, this system consists of a PC, a USB document camera, an AR marker, a map, and a projector for displaying a computer screen. The tool was implemented using Processing (a programming language).

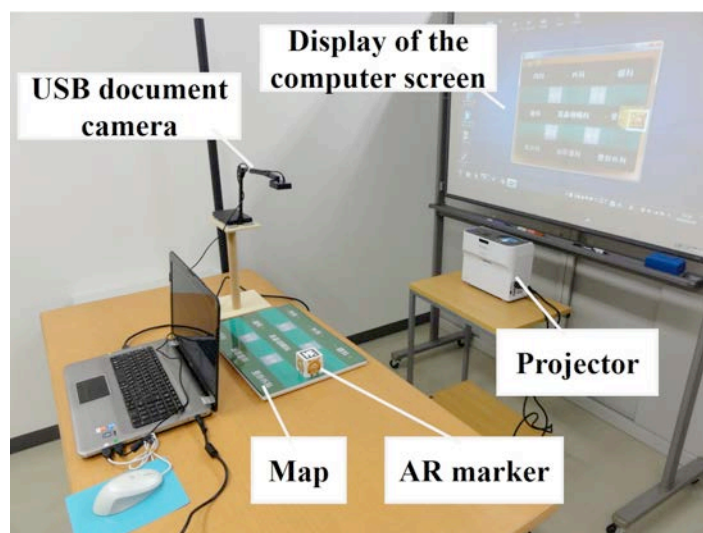


Figure 1: A prototype tool

The interaction between a learner and the tool is implemented using an AR marker on the map (Figure 2) in the process described below.

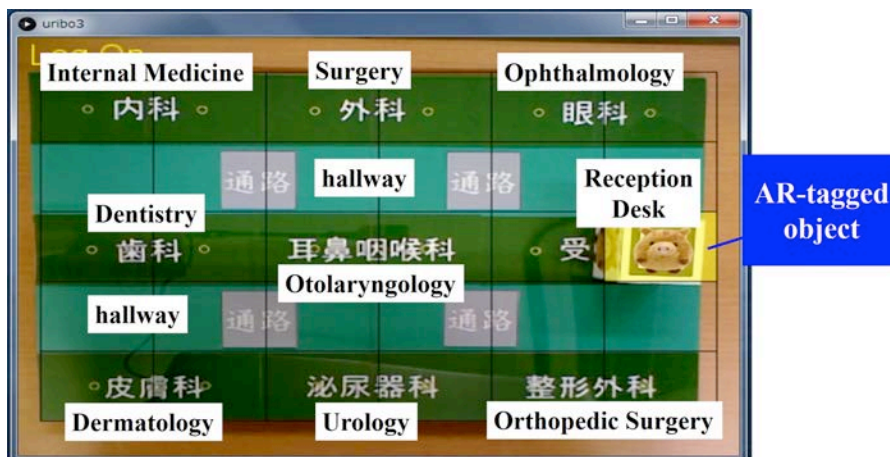


Figure 2: An AR-tagged object on the map of a hospital

- (1) An instructor gives an instruction to a learner. As an example, the instructor might say, “You are at the reception desk of a hospital. First, go to the department of internal medicine, and then go to the department of otolaryngology.”
- (2) The learner listens to the instruction and responds to it, by moving an AR-tagged object to the appropriate places on the map as shown in Figures 3 and 4.

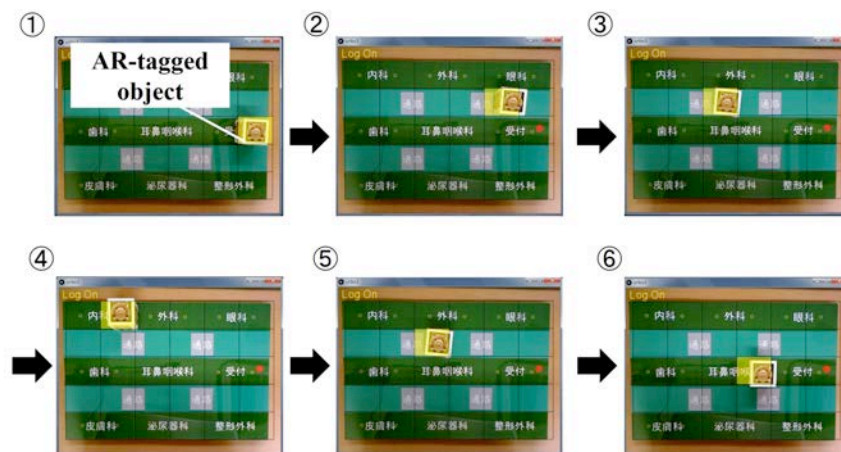


Figure 3: Example movement of the AR-tagged object

00	10	20	30	40	50
Internal Medicine		Surgery		Ophthalmology	
01	11	21	31	41	51
Dentistry		Otolaryngology		Reception Desk	
03	13	23	33	43	53
hallway					
04	14	24	34	44	54
Dermatology		Urology		Orthopedic Surgery	

Figure 4: Example recognition of the movement of the AR-tagged object

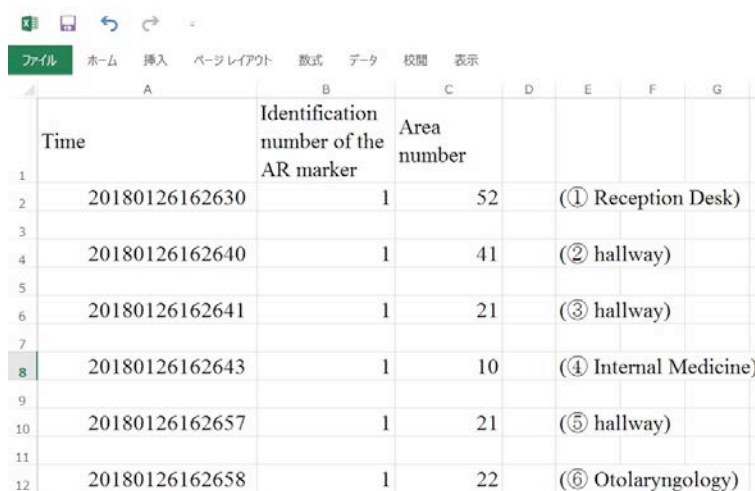
- (3) The AR marker's current position is recognized by the system. The movement of the AR-tagged object and the time logs are tracked and saved as described later in this paper.

Recognition of the Movement of the AR-tagged Object

The movement of an AR-tagged object used in the activities can be recognized and tracked by the system, based on the AR marker's positional information. An area map, shown in Figure 4, is employed to recognize and track the AR-tagged object's movement. When the AR marker's specific positional information is detected, the corresponding area number on the map is acquired. For example, in Figure 4, the area number 52 is detected from the positional information of the AR marker.

Activity Logs

The AR-tagged object's movement and the time logs are tracked in the system. As shown in Figure 5, when the AR marker's movement occurs, the time, the AR marker's identification number and the area number on the map are saved as activity logs in a CSV file. With these logs, we can observe the learner's detailed behavior in the activities, such as when the learner hesitates over whether he or she should go to area A or area B.



	A	B	C	D	E	F	G
Time		Identification number of the AR marker	Area number				
1							
2	20180126162630	1	52		(① Reception Desk)		
3							
4	20180126162640	1	41		(② hallway)		
5							
6	20180126162641	1	21		(③ hallway)		
7							
8	20180126162643	1	10		(④ Internal Medicine)		
9							
10	20180126162657	1	21		(⑤ hallway)		
11							
12	20180126162658	1	22		(⑥ Otolaryngology)		

Figure 5: Example activity log in a CSV file

Experiment

Participants

This study's participants consisted of 22 second-year students at a university in Japan. They used the prototype tool and evaluate the activities with AR markers. Their evaluations were assimilated with the help of a questionnaire.

Procedures

First, each participant used the tool and experienced the activities with an AR marker after receiving the necessary instructions on its use. Subsequently, they were asked to

complete a two-item questionnaire and to comment on the potential use of applying AR markers to various educational applications.

Results and Discussion

Here, we discuss the introduction of AR markers into task-based foreign language learning activities.

Introduction of AR Markers into the Language Learning System as Learning Materials

Twenty-two participants were asked to select the statements that best described what they had observed. Q1 in Figure 6 concerns their experiences in using AR markers. In the bar graph, blue represents “This is my first time using them,” and red represents “I have heard about them, but this is my first time using them.” Green represents “I have used them before.” According to the results of Q1, 41% of the participants agreed with the statement, “This is my first time using them,” while 36% agreed with the statement, “I have heard about them, but this is my first time using them.” Finally, 23% agreed with the statement, “I have used them before.” A total of 77% tried the AR markers for the first time.

Q2, shown in Figure 6, concerns using the tool with AR markers. According to the responses to that question, a total of 81% (36% strongly agreed and 45% agreed) agreed with Q2, “The tool with AR markers is easy to use.” Meanwhile, 14% chose the statement, “Neither agree nor disagree,” and 5% chose the statement, “Disagree.”

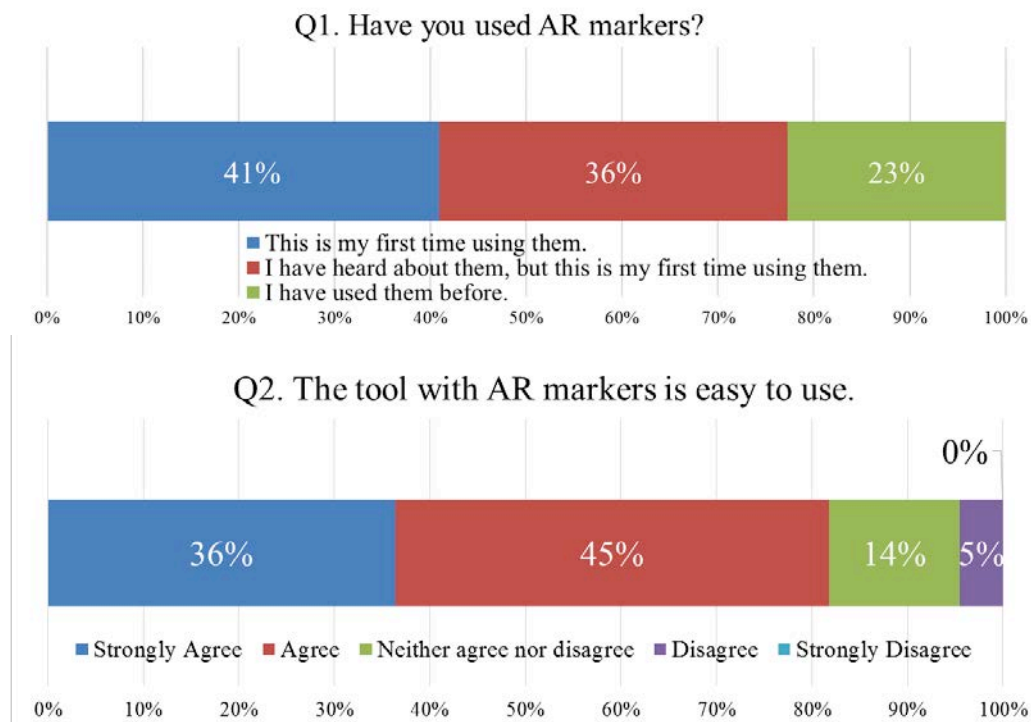


Figure 6: Results of the questionnaire on the tool with AR markers

The results indicate that the tool with AR markers was easy to use as learning materials for many participants, although for nearly 80% it was their first time. The participants who did not agree with Q2 proposed some ideas on the application of AR markers. Based on these comments, AR markers had a positive impact on them.

Regarding the activities with AR markers in this experiment, some participants stated, “These activities with physical responses might help elementary school children to concentrate on their activities.” In this experiment, a map of the hospital printed on paper was used. These maps can be easily replaced to produce various locations, such as a school map, a building map, and a town map, and so on.

Furthermore, regarding the comments on the possibility of the application of AR markers to various educational fields, several application fields were mentioned. These included educational uses such as problems concerning plain/solid shapes, multiplication tables, special local products found on the map of Japan, an escape route in the event of an emergency for children, and confirmation of daily/weekly schedules for elderly people.

These results suggest that the activities with AR markers had a positive impact on the participants. This conclusion demonstrates the possibility of implementing task-based activities with AR markers. That possibility would broaden the variety of activities not only in language learning but in other educational fields as well.

Movement of an AR-tagged Object

In the experiment, the time logs and the positional information of the AR markers were successfully tracked and saved. The results of the experiment show that the system recognizes the current position of the AR marker. The movement of the AR-tagged object and the time logs can be tracked and saved in the system.

These logs show learners’ detailed performance. That information will assist teachers to understand the behavior of the individual learner in these activities. For example, although a learner was eventually able to reach the appropriate destination on the map in the experiment mentioned above, we can observe that it may take some time to get to that destination. These logs may help understand learners’ current level in detail and provide learners with sufficient feedback. The logs may offer a good approach to evaluate and support learners’ growth.

From the learners’ perspective, they can also monitor where they need improvement, determine what they already know, and what else they need to know in any given situation. These logs may help learners to know more about themselves.

Meanwhile, the ability to track an AR marker sometimes suffers from the problems when the marker is occluded and cannot be seen in its entirety. AR technology relies on optical sensors for the marker tracking, most commonly by using a web camera. Good results can be achieved with evenly distributed light. Fluorescent lamps on the ceiling of the classroom, however, may prevent AR-marker identification and detection. We should take measures to prevent occlusion problems. Evenly distributed light is preferable in the classroom environment in order to facilitate AR-marker identification and detection.

Conclusion

In this paper, we investigated a method of implementing a task-based foreign language learning system by using AR markers. That method focused on two objectives: (1) AR markers can be applied to integrate some objects into the language system as learning materials in task-based language activities; (2) Movement of an AR-tagged object used in the activities can be recognized and tracked by the system, based on the positional information of the AR marker.

In the experiment, 22 participants used the tool and experienced the activities with an AR marker after receiving the necessary instructions on its use. Subsequently, they were asked to complete a two-item questionnaire and to comment on the potential application of AR markers to various educational fields.

We found that the tool with AR markers was easy to use as learning materials for many participants, and had a positive impact on their experience. This result suggests that the tool with AR markers has the potential to achieve task-based style activities and would broaden the variety of activities in other educational fields in addition to language learning.

The learning logs including time logs and the positional information of the AR markers were successfully tracked and saved in the system. These logs show learners' detailed performance, and will assist teachers and evaluators to understand a part of the learner's behavior in these activities. From the teachers' perspective, these logs may help provide learners with sufficient feedback. Further, they may offer a good approach to evaluate and support learners' growth.

At the same time, AR-marker tracking sometimes suffers from the problems caused by the amount of light. Fluorescent lamps on the ceiling of the classroom may prevent AR-marker identification and detection. We should seek to resolve occlusion problems. For example, evenly distributed light is preferable when trying to identifying and detecting AR markers.

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*All On Screen: The Effects of Digitized Learning Activities
on Increasing Learner Interest and Engagement in EFL Classroom*

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

With digital natives as learners, today's EFL classroom has become a challenging field for teachers to design a lesson which will effectively capture and maintain learner attention and engagement. This study attempts to elaborate a technology-based learning environment in order to increase learner interest and deeply engage them in classroom activities. "All On Screen" scheme is developed by transforming paper-based exercises into interactive digitized learning activities (DLA). On-screen drills and game-based practices created on digital platforms are used as tools to trigger learner intrinsic motivation which eventually leads to increasing interest and learning engagement. The study examines an English classroom of first year undergraduate students at the researcher's faculty, in perspective of (1) the effects of DLA on students classroom behaviours -- to what extent DLA can retain learner attention throughout the whole lesson, (2) students perception of DLA -- how DLA increase learner interest and engagement in classroom, and (3) students academic performance -- to what extent DLA can enhance learner language learning. The result of the study reveals positive reactions from learners: increasing interest, longer attention span, and higher level of participation and engagement. Nevertheless, it is suggested that the implementation of digitized learning activities will be more effective in terms of improving learner language learning when enhanced and well-balanced with teacher's scaffolding strategies. This implementation could be a considerable strategy for EFL classroom design.

Keywords: ELT, EFL, digital learners, digital natives, learner interest, learner engagement, digitized learning activities, technology-based classroom

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Introduction

“You can’t spell TEACH without T-E-C-H!”

-- Kevin Jarrett --

(International Society for Technology in Education, 2008)

Forget about the time when we were in classroom and the teacher, before starting the class, told us to turn off our mobile phone for that the ringing or beeping sound would not interrupt the ongoing class. In this Digital Age, mobile phone, instead of being a distractor, has turned into a learning device where students can look up for the information they need right at the instant their doubt arises. They do not need the teacher’s revelation of the meaning of the words anymore when they can google search it right away.

In today’s language classroom, media and technologies are powerful tools which cannot be neglected when the classroom involves young learners in this age who are all digital natives, or in another words, the “native speakers” of the digital language of computers, video games and the Internet (Prensky, 2001). Teachers of the 21st Century therefore have to embrace the changes. Teaching must be transformed to better meet the needs of a digital learner (Prensky, 2005).

Embedding information technology (IT) in language classroom is not new. English language teachers around the world have been using media in their classroom for decades. As well as researchers continue their study on investigating the effects of implementing IT in EFL classroom in every aspect. Thailand in particular has embraced technology-assisted learning since its kick starter, as evidenced by the ICT Master Plan (2009-2013) announced by Thailand Ministry of Information and Communication Technology in 2009 to promote the e-Education framework. Technology has been proved to support interactive and collaborative learning (Richards, 2006; Voogt & Plomp, 2010). Therefore, implementing technology in learning is considerably essential for today’s classroom.

In case of Prince of Songkla University International College (PSUIC), new students are recruited into the program from various admission channels. The diversity of the students ranges from their interests, their background knowledge, their expectation towards the program, to various other aspects including their English proficiency level, which is one of the most crucial factors affecting students learning performance. Every year there are numbers of students whose English proficiency is quite low (CEFR A2-A2+). The problem of this group of students is that they have to learn all courses in English, while their English proficiency is insufficient to execute it.

it is discovered that the true cause which hinders student development in English learning is rooted in student attitude toward language learning due to their past experiences, their interest and also their motivation to learn. As a consequence, students with language challenges suffer in understanding other courses content and find it is difficult to improve their English skills because they have to learn English in English which makes things more complicated when it comes to technical terms or grammar explanation. This results in a demotivational effect on student’s learning interest and engagement in class. The mentioned effect can clearly be seen through

students' classroom behaviors like when they avoid teacher's eye contact, do not volunteer or hesitate to express themselves, or even end up missing classes.

With the purpose to cope with the aforementioned problem, the researcher attempts to design a constructive sequence of lesson and create a motivational classroom atmosphere by implementing digitized learning activities (DLA) to trigger students learning motivation and maintain their concentration throughout the whole class session. The study examines the effects of DLA on increasing students interest and engagement through an analysis of students' perception of DLA and their classroom behaviors, including whether DLA can enhance students' academic performance.

Methodology

This study was carried out in two consecutive English courses for first year students in an international program throughout two semesters (15 weeks per semester) at Prince of Songkla University, Hat Yai Campus, in Thailand. The two courses were taught by the same teacher. The content of both courses followed the scope and sequence of a selected course book, but the delivery methods were designed differently. The data were collected through two sources: teacher's observation on student's classroom behaviors and an insight interview with each individual on their learning experiences and perception towards the introduction of technology in classroom.

Participants

The participants in this study are Thai, both male and female, first year undergraduate students (N=15) whose English proficiency is lower than TOEIC 450 or IELTS 4.5 which is considered A2-A2+, according to the Common European Framework of Reference for Language (CEFR). They can use simple English language in communication. Mostly they are good at listening but not productive skills. CEFR has provided the description of A2 level users as follows:

A2 (Basic User)

Can understand sentences and frequently used expressions related to areas of most immediate relevance (e.g. very basic personal and family information, shopping, local geography, employment). Can communicate in simple and routine tasks requiring a simple and direct exchange of information on familiar and routine matters. Can describe in simple terms aspects of his/her background, immediate environment and matters in areas of immediate need.¹

All of the participants are in Digital Media program. Their interests always concern technology and media development. Therefore, of all the learners in this digital age, Digital Media students are very tech-savvy, keen on games and programming. Their everyday lives and classes always involve computer-assisted learning, electronic gadgets and technology.

¹ University of Cambridge ESOL Examinations, Using the CEFR: Principles of Good Practice, October 2011: 7-9.

Classroom Design

In the first semester, classroom activities were based on worksheets, role plays and tasks without technology assistance, except classroom audio and visual media like videos. The teaching strategy relied on the teacher as a facilitator and discussion leader. On the other hand, in the second semester the ‘All On Screen’ model was implemented with the idea of using media after media to extend the interactive atmosphere and retain students interest and engagement. Digitized Learning Activities (DLA) were introduced instead of worksheets on the purpose to change students’ perception of ‘more exercises’ into ‘interactive tasks’. However, DLA were applied on biweekly basis in order to avoid the overuse of the tools (See Figure 1).

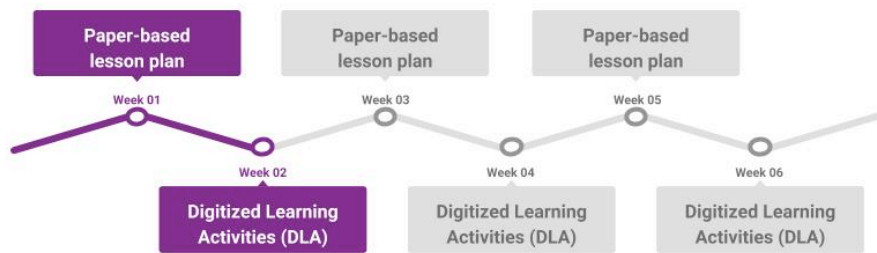


Figure 1: Digitized Learning Activities implementation on biweekly basis.

In both semester, unlike language classes in general which are organized twice a week (2 hours’ lecture and 2 hours’ practice on different day), the studied class was arranged only once a week and extended to 4 hours long with 10-15 minutes break at half of the whole session. This purposeful long hour was aimed for allowing a huge scenario for students to get tired or distracted, and also expanding the time for teacher’s observation on the effectiveness of DLA tools. The structure of the classes was designed as an interval session of teacher’s teaching and practice time. On the controlled week, the DLA tools are implemented in the sessions where practices are. The division of the 4 hours class is as demonstrated in Figure 2.

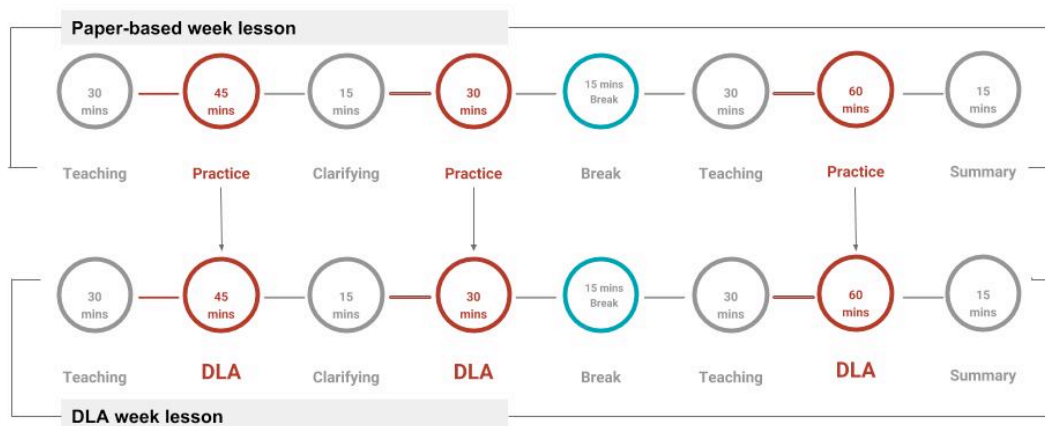


Figure 2: Digitized Learning Activities in replacement for paper-based practices.

The 4-hour session combines both teaching and practice together. The practice tasks occupy longer session than the teaching as to reduce teacher talking and expand students' engagement time. The duration of time students exposed to the paper-based exercises is controlled to be the same as the DLA exposure to avoid invalid results.

DLA Tools

In general, DLA refer to any types of learning activities facilitated by technology, basically operated on digital platform such as on internet, mobile application, social network, online educational quizzes or games, etc. For this study, the researcher exploits different types of DLA like multimedia, audio-visual reading, but the two main tools were on-screen drills and game-based practices on online platform.

On-screen drills are worksheets or paper-based exercises which have been 'digitized'; they were recreated on digital format, transformed to be displayed on screen. This is meant for the students to gain the sense of doing the practice as a whole class, not individual worksheet. On-screen drills are expected to help in enhancing students' discussion as a whole class and diverting students' perception of 'exercises' to 'whole class tasks'. On-screen drills in this study were both created by the researcher and adapted from the course books iTutor program². The characteristics of the on-screen drills appear basically like worksheet exercises, but appearing on projector screen and assisted with sound and animation effects when inserting the correct or wrong answers. Figure 3 is the example of on-screen drills adapted from the iTutor program of New Headway Pre-Intermediate Student's Book, Oxford University Press.

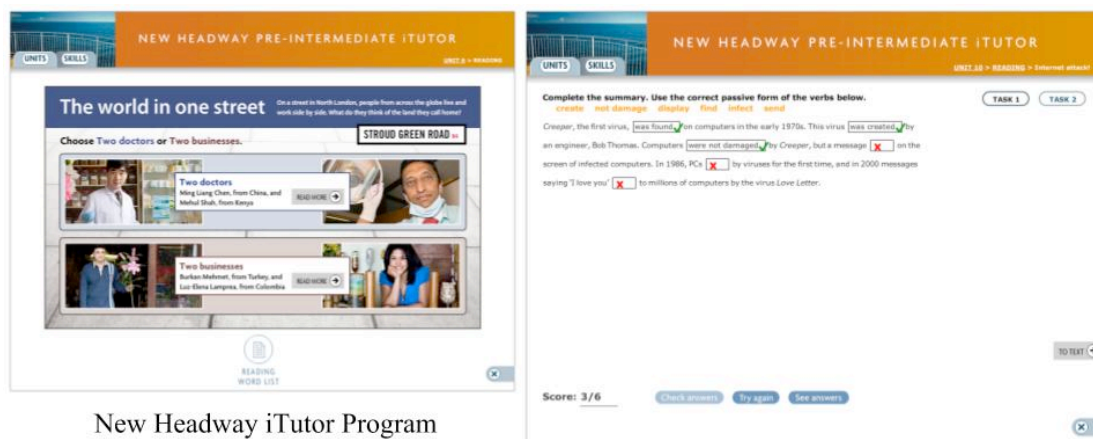
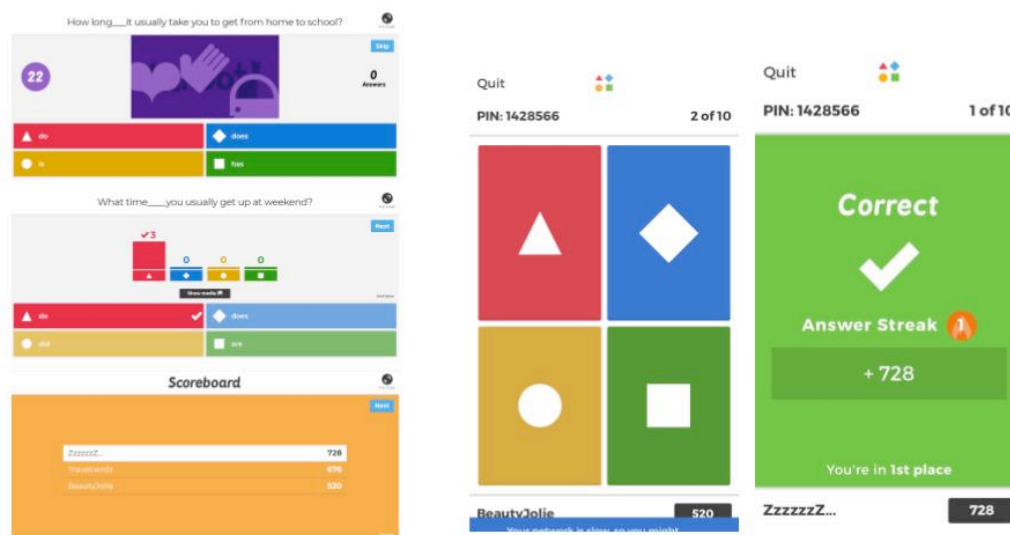


Figure 3: On-screen drills adapted from the selected course book resources.

Game-based practice is designed to higher up the level of classroom interaction. Exercises and quizzes were turned into challenging quizzes on free online educational platform like Kahoot! (www.kahoot.com) and Socrative (www.socrative.com). These websites allow teachers to create their own interactive and entertaining, yet constructive quizzes and games for students to challenge themselves against the clock and their peers. When playing, the drills or questions will be displayed on projector screen for the whole class to see. Students, using the Kahoot application on their

² Soars, J. & Soars, L. (2015) New Headway Pre-Intermediate Student's Book. Oxford University Press, Oxford.

mobile phone, will get an access code to join the game. The teacher will control the games pace and normally each question is time-controlled. The quizzes can be played in both individual and team mode. After each question, students will receive an instant feedback which is the answer to the question, so they know what to improve in the next question to come. The score will be displayed after each question as well, so the students can see the ranking, who have got the score and who is the fastest to answer. By this means, there are opportunities for students to practice the skills or content learned in classroom, correct themselves when making wrong answers, and have fun while learning both individually and through team discussion. Figure 4 demonstrates game-based quizzes created by the researcher on Kahoot.com.



Screen display on class projector
(Teacher's control)

Student's mobile screen while playing

Figure 4: Screen captures of quizzes created as DLA on online platforms.

The ideology in creating these digitized learning activities is the idea of speaking the same language with the learners. Since the audience of the class are all digital natives, they are familiar with technology-assisted tools, the method to communicate with them effectively is to communicate in the same channel to tune our mutual interests. DLA tools are designed for students to feel familiar and comfortable in their physiological routine contexts like using mobile phones, sliding and touching the screen and being embraced in multimedia.

Results

Teacher's observation

Based on teacher's observation on students' classroom behavior, DLA have changed students' behavior in a positive way. First of all, students were more attentive and focused when DLA were introduced. They were more engaged in on-screen drills that everyone participated. There were times that students who always sat in the back row of the class moved to the front row to help their peers solve the problems. Second, discussion came natural. When they were really engaged in the tasks and were really motivated to solve the problem, they asked for their friends to brainstorm and discuss without necessity of teacher encouragement. The discussion leaders have shifted from the teacher to students themselves. It is observed that passive learners who were quite

shy and quiet in classroom showed signs of learning from their peers' discussion over the problem. Instead of ignoring what was going on in class, passive learners turned to listen to what their friends were discussing, nodding their head for understanding, comparing the suggested answers with their own ideas, sometimes murmuring what they thought was the correct answer. It is obvious that they are still shy to speak out, but they learned. When the teacher revealed the correct answer, the whole class would continue the discussion for more clarification. This brightened up the class atmosphere to be more collaborative and constructive. Third, when Kahoot and Socrative were introduced, students showed eagerness to play. Even if the quizzes were simply questions about grammatical features or normal exercises, they were still active to play. Online game-based practices have drawn attention and retain students interest and engagement the best.

Insight Interview

From the insight interview with each individual, firstly, students were asked to compare their learning experience between the two semester, the classroom with and without the presence of technology. 100% of the students preferred the presence of technology. Some of them find using technology in classroom more interesting and attractive to learn. Some of them feel that technology-based classroom is more modern. Some of them feel it is easy to do the tasks since it is their familiar behavior to use mobile phone, sliding and tapping on the screen.

Then, students were asked to rank which DLA tools they find interesting and engaging them in the activities the most. They were asked to rank all the tools used throughout both semester: worksheet, multimedia, audio-visual reading, game-based practice and on-screen drills. The result came as expected; the online game-based practice was the most popular one. However, it was followed by the multimedia in the second place, the audio-visual reading in the third place, on-screen drills in the fourth place and lastly the worksheet. The percentage of the students ranking of each learning activity is demonstrated in the following Figure 5.

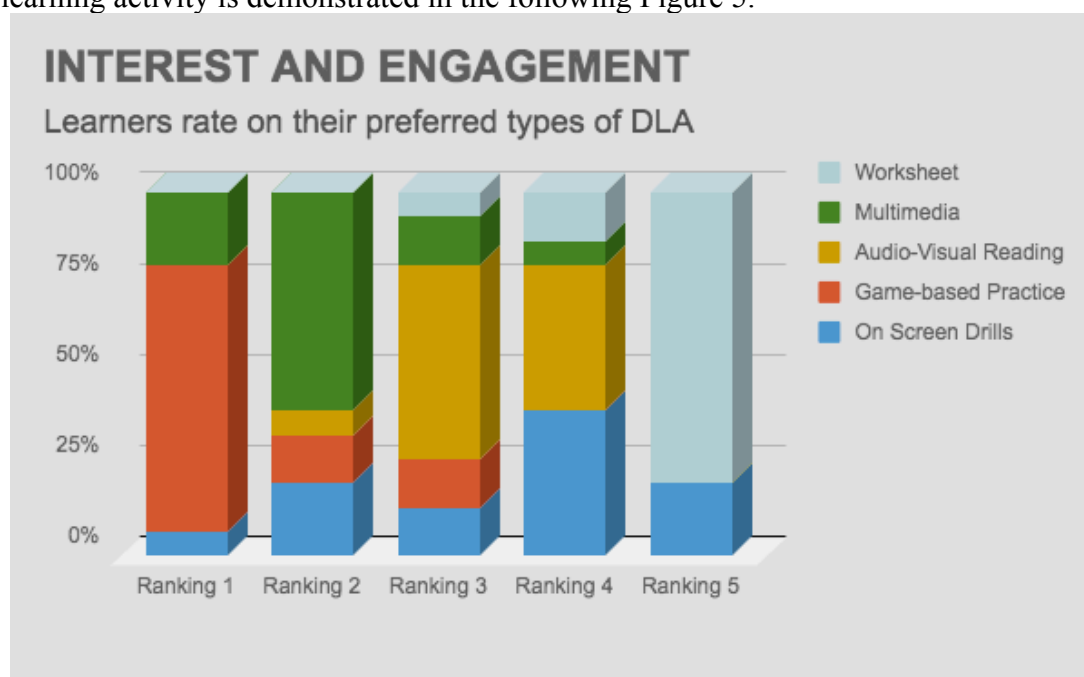


Figure 5: Students ranking of their favorite learning activities

From the revealed result, students have given an interesting comment that game-based practices were really enjoyable and could really raise their interest and engagement, even if they knew well that all the quizzes were basically exercises, but when it comes in form of challenges, it intrigues them to participate and learn. On-screen drills were ranked in the first and second place by some of the students, but not the majority of them. Those who preferred this tools have commented that on-screen drills were fun and constructive, they can do the tasks with the whole class which make them feel less stress. There was no pressure as they usually feel when doing the paper-based exercises.

In order to assess their learning performance, students were also asked to rank the tools from which they could learn the most. The result is as shown in the following Figure 6.

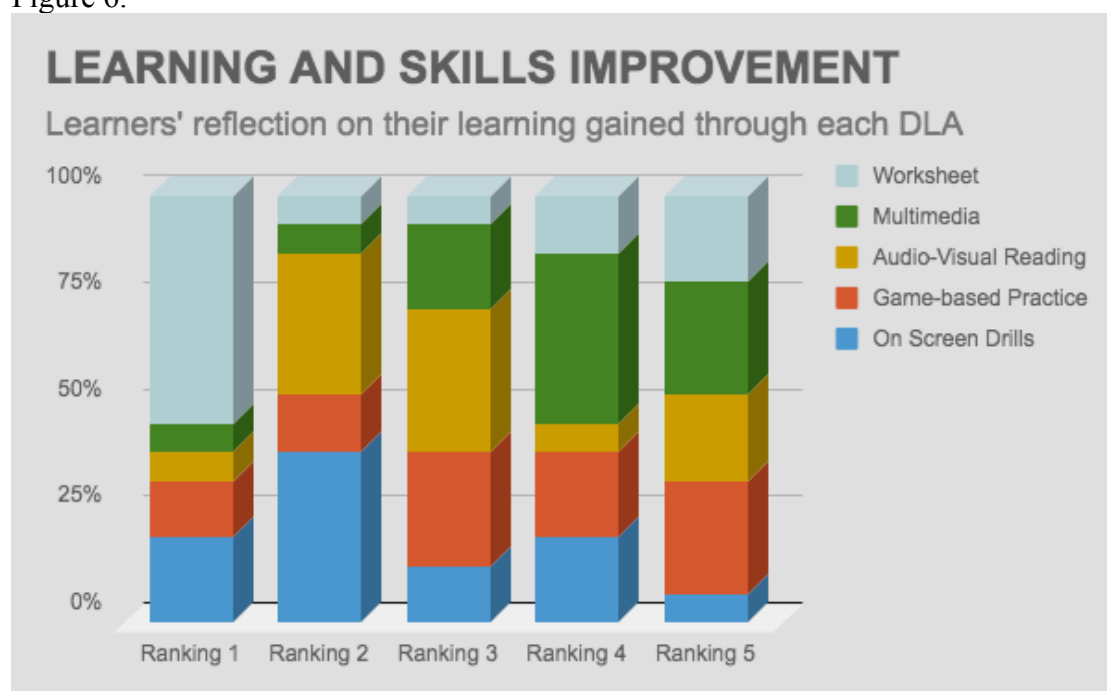


Figure 6: Students ranking of the most effective tools in terms of learning

Surprisingly, the result revealed that more than 50% of the students admitted that they can learn the best when they study on their worksheets. They still preferred to jot down the knowledge while they are learning, which on-screen drills or game-based practices could not allow them to do so. In the learning improvement aspect, on-screen drills rank the second as same as the audio-visual reading. Students have commented that on-screen drills really enriched the discussion and knowledge sharing. They could compare different ideas. It was like a debate of different thoughts and perspectives, so they really enjoyed it. Another interesting result was the game-based practice that came last in the ranking. The students most favorite tools did not enhance much of their learning because they were really into competing and excitement that they would not memorize what they had learned from the games. Some of the weak students who did not learn much from games mentioned that sometimes that wanted to take time thinking about the questions, but their friends were faster and they answered the questions without any discussion, so they could not get to really learn. This annoyed them quite a lot. They prefer to play in individual mode.

Conclusion

As the result of the study has shown, the DLA tools succeeded in increasing learner interest and engagement in classroom. However, in terms of learning, students still need the traditional way of taking notes and having some materials for revision at home. It is obvious that students know well that traditional worksheets are best for their learning, but in their perception, they are not quite welcome in classroom. From all the reflections, it can be concluded that even digital learners find a well-balanced between technology and traditional learning, enhanced with teaching techniques improve their learning the best. Therefore, for more effective implementation of technology, a blended learning model could be a considerable way to increase and maintain learner interest and engagement while also enhancing their learning performance.

Acknowledgement

I would like to dedicate this work to my family who are always there to cheer me up in my hard times. Also, thanks to all my colleagues for always be of a good support. Assistant Professor Dr. Wiphada Wettayaprasit, Dr. Tanate Panrat and Mr.Hambalee Jehma.

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The Effectiveness of Gamification in Finance Education

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

The Finance educators today face many challenges in providing an effective learning environment to their students: the millennials, who are the digital natives. They have different learning styles and require new teaching and learning process that have triggered the main problems in education today. It is no longer possible to assume that the learning could be accomplished solely by linguistic resources and/or crowded slides of confusing texts and formulas. Hence, this study investigates the effectiveness of gamification in finance education. The participants in this study were 50 students from two classes who registered Financial Management course at Politeknik Kuching Sarawak. One class of 26 students was randomly selected as the experimental group which employed the gamification technique in teaching and learning while another class of 24 students was assigned as the control group with normal traditional curriculum activities. The formative assessment indicates that learning via gamification result in higher learning performance. A questionnaire was also developed to elicit the participants' views towards the gamification technique. The results reveal that the gamification technique allured their interest and enhanced their motivation to learn. It is hoped that the findings of this paper will contribute to the improvement of quality in finance education by incorporating the gamification whenever applicable.

Keywords: Gamification, Game Based Learning, Finance Education, Blind Kahoot!

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Introduction

The today's students, the millennials, who are the digital natives, are brought up with visual practices and digital technologies. They have different learning styles and attitude towards the learning process that have triggered the main problems in education today. Yap (2016) found that many lecturers are still using conventional teaching and while they are explaining and writing on the board, some of the students will copy the same thing onto their notes, some are day dreaming or even sleeping. There are several reasons for drop-outs or low performance especially in TVET education: the students' boredom, lack of engagement and absenteeism that caused the students less willing to attend the lecture. Hence, the educator should identify pedagogically which content are difficult to learn and how gamification can tackle the issue of students' motivation and engagement during their learning process.

As the concept in Finance is difficult to comprehend, the students may adopt strategy like memorizing the formulas in order to achieve good grades at the expense of understanding the rationale of doing so. For instance, even though the students have learnt the standard deviation in statistic course during semester one in polytechnic and also during their secondary school, most of them still do not understand the meaning of standard deviation. Therefore, they are not able to understand how the standard deviation can be applied to measure risk. These obstacles may cause them to feel depressed, frustrated or cynical which are not present in the gaming environment where the students who had done with the work, will leave the game and go to another level of game that's more challenging. This is further enhanced by instant gratification to keep them engaged and motivated.

Effective pedagogic approaches are vital in Finance education to maintain high quality teaching and to engage and motivate students in learning. Gamification offers a new approach that can help the educators in finding the balance between achieving their objectives and catering to evolving students' needs. As such, it is vital to identify what are the gamification elements that enhance learning engagement in Financial Management course and how to construct a new learning approach in Financial Management course through gamification. Hence, this study intends to explore the use of gamification as a pedagogic approach to engage and motivate the students' learning in Finance education. The hypotheses that there is no significant difference in students studying with gamification between treatment and control group is tested.

Literature Review

People like playing games as it is fun and entertaining. These features grab hold the players and motivate them to keep playing (Hamari et al., 2014). Gamification involves the use of game elements in non-game context (Deterding et al., 2011). The gamification guru, Yu-kai Chou defines gamification as "the craft of deriving all the fun and addicting elements found in games and applying them to real-world or productive activities". In the context of learning, gamification is an application of gaming elements to real life tasks to influence behavior, improve motivation and enhance engagement (Marczewski, 2012).

In today's digital generation, gamification has become a popular tactic to encourage specific behaviours, and increase motivation and engagement (Dominguez et al, 2013;

Huang and Soman, 2013; Paisley, 2013). In support, Hamari et al. (2014) showed that gamification has considerable potential in enhancing students' motivation and engagement in the learning task as well as enjoyment over them. Graziela (2014) further highlight that gamification can provide an innovative, creative and investor student who actually tries, takes risk and in time makes mistakes. This is supported by Kapp (2014) who showed that the gamification promotes motivation and facilitates effective learning via the adoption of game elements, mechanics and game-based thinking.

As gamification serves the purpose of mitigating the negative emotions and feelings that the students usually come across in traditional forms of education, it encourages the students to learn by employing the learn-by-failure technique that is popular in game-like environments, where students can make mistakes and try again without the embarrassment factor that they usually face in classroom education. This is proposed by Legendahl et al. (2016) that the gamification elements in education can be classified into three types: the surface elements are visuals that quantify the player's performance; the underlying dynamics are the elements that summarize the condition of a game including freedom to fail, feedback, progression, narrative and choice; and the gaming elements that create the gaming experiences for players in non-game activities like challenge, competition and enjoyment. However, it does not mean that a gamified learning program must possess all these elements.

Another strand of studies focuses on the effectiveness of gamification in enhancing the students' learning performance. There are several studies that demonstrate gamification as a powerful learning tool which could result in higher students' learning performance (Divjak & Tomic, 2011; Ashraf et al., 2014; Hung et al., 2014; de-Marcos et al., 2016). Researchers found that gamification provides a learning environment that promotes students' interest and motivation in learning which subsequently result in good learning achievement. However, it should be highlighted that gamification has to be appropriately designed in order to exert a positive impact on the realization of educational goals.

Methodology

There are many gamification platforms available nowadays which are freely available for everyone. This study adopts Kahoot! which allows students to join the Kahoot! session by entering the code given by the instructors using their smart phones, tablets or ordinary computers. In addition, the Kahoot! platform encompasses all the five factors that determine learning engagement as described by Whitton (2011). This is supported by the past findings that demonstrate the effectiveness of Kahoot! in providing positive impact on motivation and engagement of students in learning as they perceived Kahoot! has made their learning enjoyable, easy to use, interactive and helping them to understand their subjects better (Zarzycka-Piskorz, 2016; Plump & La Rosa, 2017; Tan, Ganapathy & Manjet, 2018).

Nevertheless, the past literature has mainly focused on the use of Kahoot! for review, formative assessment or to re-energise the class. This study looks into the new idea in Kahoot!, the Blind Kahoot! proposed by a science teacher Stephanie Castle in New York, in teaching the measurement of risk and return in Financial Management course. The Blind Kahoot! is designed to induce the students' curiosity, promotes

understanding and reinforcement in learning a new concept. Compare with the conventional use of Kahoot!, Blind Kahoot! employs assessment to learn instead of assessment of what has been learned. It is all about building and reinforcing knowledge brick by brick in a single game.

The Blind Kahoot! session in this study consists of 21 questions. The opening of the Blind Kahoot! session is designed with the introduction of the game to enable the players to know what are expected to learn. This is done by using a “Blind” question to ask something completely new (how to measure the risk) to the players to spark their curiosity. The answer is explained by the instructor and this is followed by a series of questions focused solely on what they have just learned. Another “Blind” question is then raised to teach the subtleties (how to measure the return). This is followed by another series of questions escalating in difficulty to let the students apply what they have learned. The cycle repeats for the concept of coefficient variance and finally, the questions aim to instill compound reinforcement are raised to help the players consolidate everything they have learned in the Blind Kahoot! session.

The real teaching situations in Financial Management course are used to analyse the gamified learning program. Students who enrolled in Financial Management course are selected. One class of 26 students was randomly selected as the experimental group which employed the gamification technique (Blind Kahoot!) in teaching and learning while another class of 24 students was assigned as the control group with normal traditional curriculum activities.

The same lesson was presented to both classes but only the experimental group was exposed to the Gamification technique. On the other hand, in the control group, the content was conveyed verbally and the same content was used during both lessons to avoid confounding effects on the experiments. A formative test was then administered to gain the students’ learning outcomes from both classes. The purpose was to identify whether the learning outcomes from the experimental group made differences as compared to the control group.

Ronald (2005) proposed to use multiple sources of evidence such as student’s performance and student’s ratings in measuring the pedagogical effectiveness. By drawing on different sources of evidence, a more accurate and reliable decision can be derived as the strengths of each source will outweigh the weaknesses of the other sources. Hence, the observation of student behaviour during the gamified lesson was conducted while a questionnaire was also developed to elicit the participants’ perceptions from the experimental group towards adopting Gamification in learning Finance. The questionnaire comprised of 10 questions which were rated on a five-point Likert Scale from strongly disagree to strongly agree.

Findings

The mean scores of the quiz in Risk and Return Measurement are tabulated in Table 1. The experimental group recorded remarkable higher means than the control group. This supports the hypothesis that using the Gamification technique enhances students performance.

Table 1: Mean score of the formative test

Group	Mean score	Standard Deviation
Experimental	87.5	2.26
Control	79.6	5.34

In regards to the classroom observation of students' behaviour, it is noteworthy to highlight that the majority of the students demonstrated the immediate indicators of engagement (Mandernach et al., 2011) as in Table 2 during the Blind Kahoot! session.

Table 2: Observation of students' behaviour during the Blind Kahoot! session

1.	Actively listened and looked at the screen
2.	Highly focused attention
3.	Actively responded to each of the questions
4.	Questioned or discussed with their peers
5.	Demonstrated body language that it was fun and interesting with smiles and laughter

The results pertaining to the perceptions of the experimental group towards Gamification technique were also inspiring (as in Table 3), indicating the usefulness of Gamification technique in enhancing their learning. Almost all students were strongly agreed that the Blind Kahoot! session is interesting and they have fun playing the game. The most encouraging findings would be the high scores in the students' engagement where almost all focus on each item in the Kahoot! session and respond to it. Students also like the fun and excitement from the competitiveness feature and were motivated by the prospect of winning. This has fostered them to pay more attention during the lecture.

The interest, engagement and motivation fostered thus help the students to understand the lesson. They also agreed that the Kahoot! session successfully reinforce their learning. Almost all strongly agreed that Gamification should be used as a learning tool in Finance.

Table 3: Perceptions of the experimental group towards Kahoot!

		Mean
1	I find Blind Kahoot! interesting	4.96
2	I have fun playing the Blind Kahoot!	4.96
3	I focus on each item or question in the Blind Kahoot! session	4.96
4	I respond to each item or question in the Blind Kahoot! session	4.96
5	I like the competitiveness in the Blind Kahoot! session	4.96
6	I am motivated by the prospect of winning in the Blind Kahoot! session	4.96
7	I pay more attention during lectures because I hope to win in the Blind Kahoot! session	5.00
8	The Blind Kahoot! session helped me to understand the Risk and Return Measurement	4.96
9	The Blind Kahoot! session helped me to reinforce my learning of the Risk and Return Measurement	4.96
10	Blind Kahoot! should be used in other finance modules	4.96

Conclusion

This study shows how gamification could be coupled with mobile learning in higher education to engage learners and enhance the learning performance. The results shed light on the adoption of Gamification in Finance education that contains the game elements: the combination of challenge, competition and interaction to make the students enjoy the process of learning. It is proven to be effective in fostering the students' engagement and interest to learn in Financial Management course and leads to a higher academic performance. Specifically, this study demonstrates that Blind Kahoot! enables the players to master a new finance concept relatively quickly through a fun and engaging atmosphere. It is not only a great tool for learning terminology but can also be used to introduce a new topic.

From the pedagogical perspective, this study provides useful insights into the learning styles required by the millennial students. By testing the effectiveness of gamified classroom over traditional classroom, it reveals important information about what works. It is hoped that the findings of this paper will encourage the Finance educators to integrate the gamification into their pedagogy to maximise the learning experience.

Finally, it should be noted that there is possibility that the increased students' interest, engagement and motivation are simply due to the short term novelty factors generally associated with the introduction of new technology and learning techniques. Besides, this study examined one mode of gamification only and the sample for this study was drawn from one polytechnic. Hence, further study across a number of institutions is needed to assess whether it is sustainable and applicable to other context.

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Principal Leadership Practices, Teacher Morale and Performance of Elementary Schools

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The Asian Conference of Education 2018
Official Conference Proceedings

Abstract

Teacher morale and principal leadership are relevant to educational researches because they are critical to school's success; hence, these are considered in this study. The study determined the relationships among leadership practices, teacher morale and schools' performance in Tacloabn City Division during the school year 2014-2015. It involved 40 school principals and 456 teachers as respondents. The Leadership Practices Inventory, and the Purdue Teachers Opinionnaire were used as the data gathering tools. The data were statistically treated using percentage, weighted mean, Pearson r, eta correlation, and single analysis of variance (ANOVA). The study found that the principals' extent of leadership practices was generally high. The principals best leadership qualities were fostering collaboration and empowerment (enabling others to act), and encouraging and motivating people to achieve the goals set by the organization (encouraging the heart). Overall, the teachers had generally moderately high morale; though, they showed high morale on the following: teacher rapport with the principal, satisfaction with teaching; rapport among teachers, teacher salary, curriculum issues, teachers' status, community support of education, and community pressures. The schools' performance was generally moderately high only. The level of morale of teachers was positively associated by the principals' leadership practices. Thus, it was concluded that principals could positively influence their teachers though their leadership styles. It was recommended that: principals should enhance their leadership practices to increase the level of teachers' morale; teachers loading must be considered by the principals so as not to overburden teachers.

Keywords: principal leadership, teacher morale, school performance

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Introduction

The school's performance is measured in terms of learners' achievement. Therefore, the ultimate goal of all educational efforts is the high achievement of the learners – the students/pupils. Students'/pupils' achievement, on the other hand, is influenced by several factors. Considering that teacher is considered the agent in the educative process, teacher is one of the factors, which is believed to greatly influence learners' performance. Specifically, teacher's morale can be a very potent factor that could influence the learners' performance. Correspondingly, teachers' performance is also affected by many factors. One of these could be principal leadership.

Both teacher morale and principal leadership are relevant to educational researches because they are critical to school's success. It is hypothesized that teacher morale directly influences pupils' achievement and school's performance in general. Teacher morale is also hypothesized to be influenced by the leadership behaviors of their principals or school heads. Thus, it can be safely assumed that principal leadership also affects pupil's achievement and school's performance in general.

Indeed, the principal has a very important role in the improvement of the whole school operation. Considering that the school is the focus for the students to develop themselves, the principal has that great responsibility in the students/pupils' development, which could be made possible through its profound influence on the teachers' competencies.

This researcher, as a principal in one of the elementary schools of Tacloban City Division, has observed the need to identify factors which may be contributory to the morale of teachers, as well as the academic performance of the pupils. This is for the fact that she has observed that there is a need to improve teachers' performance and pupils' academic achievement, and the school's performance in general. This researcher believes that this could be possible by improving teachers' morale through excellent principal leadership. Furthermore, the schools' performance in Tacloban City Division still needs improvement in terms of increasing pupils' grades and promotion rate; and reducing dropout rate, failure rate, and repetition rate. Also, it has been observed that teachers had manifested dissatisfaction vis-à-vis low morale in some aspects like salary, work load, among others. These manifestations of low morale had been evident in some teachers' meetings and other gatherings – in school level, district, or division level meetings, where complaints had been raised.

Considering the above observations; and the possible links among the principal leadership, teachers' morale, and pupils' performance, the researcher found it imperative to conduct this study to assess the principals' leadership practices, teacher morale and school's academic performance; and to determine their relationships so as to draw pedagogical implications and propose an action plan.

Moreover, based on the literature review, there had been a dearth of researches conducted about the interrelatedness of these variables in the local setting, specifically in Tacloban City Division. There had been studies which were conducted related to these, but these were conducted outside the country. It is hoped that this study will benefit the elementary schools of Tacloban City Division. Specifically, it is also

expected to benefit the following in different ways: school principals, teachers, students and future researchers.

Conclusion

This study determined the relationships among leadership practices, teacher morale and schools' performance in Tacloban City Division during the schools year 2014-2015. Specifically, it determined the principals and teachers profiles, the principals extent of leadership practices, the teachers' level of morale, the schools' performance, and the relationships among these variables.

The study was conducted in Tacloban City Division covering six district learning centers with 40 elementary schools. All the 40 school principals and 456 teachers were involved in the study. Two standard questionnaires were adopted for the study as data gathering tools such as the Leadership Practices Inventory, and the Purdue Teachers Opinionnaire for the morale of the teachers. The data were statistically treated using percentage, weighted mean, Pearson r, eta correlation, and single analysis of variance (ANOVA)

The following were the major findings of the study:

Profile of the Principals

The 40 principals were mostly middle aged, mostly females, married; lacked advanced studies; and with limited relevant trainings.

Profile of the Teachers

The teachers were mostly middle aged; females dominated; mostly were married; generally lacked advanced degrees and were quite experienced.

Leadership Practices of Principals

In general, the principals' extent of leadership practices was very good as perceived by themselves; and good as perceived by the teachers. In modeling the way, the extent of leadership practices was very good according to the principals themselves and good according to the teachers. In inspiring a shared vision, both principals and teachers had given very good rating. In challenging the process, the principals had given themselves with very good rating, while the teachers had given a generally a good rating. In enabling the heart, the principals had rated themselves with very good, which was confirmed by the teachers. In encouraging the heart, the mean ratings of the principals and teachers were both interpreted as very good.

Teachers Level of Morale

The teachers' level of morale was only moderately high. The factors which indicated high level of morale were the following: teacher rapport with the principal; satisfaction with teaching; rapport among teachers, teachers' salary, curriculum issues; teachers' status; community support of education, and community pressures. On the other hand, the factors which showed low morale among the teachers were teacher load and school facilities and services.

Level of Schools' Performance.

The schools performance level were as follows: in terms of pupils' academic performance (GPA) the schools' performance was moderately high; high performance in terms of dropout rate as manifest by the very low dropout rate; low performance in terms of failure rate as substantiated by the high average failure rate; high

performance due to the high promotion rate; moderately high performance due to the low repetition rate; and high performance in terms of faculty performance as evidenced by the very satisfactory average rating.

Relationships among Profiles, Leadership Practices, Level of Morale, and Schools' Performance.

Each profile of the principals had no significant relationship with their leadership practices. Also, there were no significant associations between each teacher profile and their level of morale. Civil status of the principal was significantly associated with promotion rate. Number of relevant seminars was significantly associated with dropout rate; and experience as principals was associated with dropout rate. The level of leadership practices of principals was significantly and positively associated with teacher morale. There were no significant relationships between the principals' leadership practices and schools' performance.

Differences among the Six School Districts in terms of Leadership Practices of Principals, Teacher Morale, and School Performance.

There were no significant differences among the six school districts in terms of the following: leadership practices of principals, teachers morale, and all the school performance indicators.

The following conclusions were drawn out from the major findings of the study:

It was deduced based on the results that the principals' extent of leadership practices was generally high. It can be further inferred from the results that the principals best leadership qualities were fostering collaboration and empowerment (enabling others to act), and encouraging and motivating people to achieve the goals set by the organization (encouraging the heart).

Generally, the teachers had moderately high level of morale. It was also concluded that the schools' performance was generally moderately high only. Finally, the level of morale of teachers was positively influenced by the principals' leadership practices. Thus, it is concluded that principals could positively influence their teachers through their leadership styles.

Recommendation

Based on the findings of the study and its conclusions, the following are recommended: principals should enhance their leadership practices to increase the level of teachers' morale; teachers loading must be considered by the principals so as not to overburden teachers; and principals need to attend more seminars related to school leadership as this was effective in reducing the school's dropout rate. Most importantly, the implementation of the action plan which is the output of this study is strongly recommended. It is also recommended that similar studies be conducted by future researchers.

Acknowledgements

The researcher, with great pleasure, acknowledges her indebtedness to some persons whose individual assistance and service were extended to her from the conception up to completion of this research.

With deepest gratitude, the researcher expresses her sincerest thanks above all to the **Father Almighty** who gives her the courage to work on this dissertation.

Heartfelt thanks are due to **DR. LOUISE ANNE D. LIBRANDO**, Dean of the Graduate School, Southwestern University, Cebu City, for his valuable guidance and suggestions to facilitate the preparation of the research proposal and the dissertation.

The researcher is likewise indebted to **DR. CLEMENCIA V. GATPOLINTAN**, her adviser, who has been very instrumental and influential to the researcher's graduate school career.

Grateful acknowledgement is also given to **DR. DELETAH D. G. POLINAR**, Chairman, **DR. ALICIA B. PLANTAR**, **DR. LEOVIGILDO A. MANALO**, and **DR. THELMA P. BARTIDO**, member of the Panel Examiners, for their constructive comments and suggestions for the refinement of the manuscript.

Profound gratitude is also extended to **DR. NILO M. EDER**, and **DR. LILIA P. ADRALES** for his professional expertise and involvement in this study.

Elementary School Heads/ Principal and Elementary Teachers of the Division of Tacloban City, for their cooperation in the success of this endeavor.

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Some Challenges with Opportunities of Introducing International Baccalaureate Programmes into Japanese Schools

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

The rapid changes in our world today mean that education must now serve an increasingly complex set of purposes. The Japanese government has recognized the need for changes in the traditional educational system, and the necessity to internationalize so as to develop human resources for a competitive globalized world. The introduction of International Baccalaureate (IB) programmes into article 1 schools is intended to generate deep change. In liaison with this initiative, the University of Tsukuba has inaugurated since 2016, a Master's in International Education program that provides students with the opportunity to obtain an IB Educator's Certificate while at the same time conducting research within the field of international education. The program is of significance in that it brings together perspectives from Japanese educators, from educators in other national systems and also those from international educational backgrounds. The IB is an international education that has built its reputation in international schools. How then can it help internationalize the traditional Japanese national system? The Japan Association of Research into IB Education (JARIBE) was established in 2015 to promote and collate research nationwide to answer such questions about the introduction of IB programmes into Japanese schools. Input from the two cohorts of students on the Master's in International Education Program at the University of Tsukuba, and from presentations and discussion forums from three JARIBE annual conferences have been collated in this paper to consider the broad challenges and opportunities arising from the introduction of IB programmes into Japanese national schools so far.

Keywords: internationalization, education, international baccalaureate, pedagogy, inquiry

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Introduction

The Japanese national educational system is built around a transmission model of teaching and learning. Typically, canonical knowledge in text books is memorized for standardized tests. Classes are large with around forty students sitting in rows of desks with the teacher at the front of the class. Today however, inquiry based learning is considered to be a more relevant way of teaching and learning for our present times and in order to implement such a model in the Japanese context various school change initiatives have been introduced by the government. The introduction of International Baccalaureate (IB) programmes is one such initiative. There are challenges involved in implementing such changes but at the same time they provide opportunities for revitalization. These will be considered here.

The Challenges

The two major challenges of introducing IB programmes into Japanese national contexts are concerned with first, how the programmes are conceptualized, and secondly how the programme pedagogies can be implemented. Each of these will be considered separately.

Other practical challenges will also be considered.

1. Conceptualizing IB

When a board of education, or a school or a governmental body is considering the introduction of IB and is involved in various discussions about its nature and the necessary processes, then being clear about shared understandings of the nature of IB programmes is crucial. Otherwise, as so often happens, there may appear to be conflicts and confusions which on closer examination turn out to be based on different assumptions and interpretations of key concepts. Considering how the IB is being conceptualized in terms of purpose can help clarify understandings of shared intent and subsequent possibilities of implementation. For example, depending on experiences and knowledge about the IB Diploma Programme (DP) which is a two year university preparation programme, the ideas of what it may offer can vary quite considerably. The DP may be seen, for example, as follows:

- *as an elite qualification for entry to prestigious universities*
- *as an incentive to save time and money in university*
- *as an inclusive programme to raise national standards*
- *to transform national education for the twenty first century*
- *as an international programme that develops high level English skills*
- *as an education to make the world a better and more peaceful place*

Let us consider some of these conceptualizations in more detail.

The IBDP as an elite qualification for entry to prestigious universities

For many parties interested in the IB diploma programme there is an idea that it is an elite education for students who will be well prepared to enter prestigious universities. The background to this image and understanding of the IBDP is that, as the first IB

programme launched fifty years ago, it was well suited to the developing phenomena of international schools which flourished worldwide in the wake of World War 2. Geneva International school was the first to offer the IBDP and Yokohama International School the second. Such schools served the children of well off, middle class, ambitious parents. Classes were small and well resourced. The IBDP qualification was recognized by universities in the countries that international school graduates wished to attend. There was a perfect congruence of many factors for success. The reputation of the programme was assured, but there is little doubt that it was very much due to the international school context. Nonetheless, this is not always considered carefully and it is easily assumed that the IBDP will generate similar results in other contexts, including national schools. But this can be a challenge, especially if classes are large and resources limited.

One solution to this challenge is to target students who show early promise of success. Such a solution has been successful in a national context in the UK in Sevenoaks School for example. This is a flagship IB school where all students are highly successful in the DP. The students are meticulously screened for ability and motivation at entrance and consequently most succeed. The school's reputation for success attracts those with high capabilities in a self-fulfilling prophecy. The limitation of such an approach, of course, is the narrow focus on academic prowess as displayed through examination success.

But there is absolutely no necessity to conceive of the IBDP as being for an academic elite. The IBDP has always emphasized academic rigour but not elitism. Creating a context for the success of the IBDP in schools which want to be more inclusive although a major challenge has been attempted in various ways.

The IBDP as an incentive to save time and money in university

In some places, such as Canada, a DP subject certificate model is popular. This model allows students in IB accredited world schools to study individual DP subjects for a certificate rather than take the full six subjects and core courses required for a full diploma. Universities recognize the subject certificates as high level study and so count them towards credits for undergraduate courses. This saves the students time as well as money in university. Of course students tend to select the IB subjects compatible with those that they will pursue at university so the holistic nature of the DP is compromised as other subjects are omitted. Although some schools insist that the core of the DP is compulsory in such models, not all do. So actually in some cases it is possible to do IB subjects without studying Theory of Knowledge (TOK) or participating in Creativity, Activity and Creativity (CAS) or writing the Extended Essay (EE). These three areas are the core of the DP and are so named because that is exactly what they are. They are considered central to the development of international mindedness which is the major goal of the IB mission and it has been argued that an IB education without them neglects the mission. But certainly if the core is offered along with subject choices this model goes a long way to provide IB opportunities to a wider range of students.

The IBDP as an inclusive programme to raise national standards

In the USA, in 2010, the IB entered into a project, funded by the Bill and Melinda Gates Foundation, to expand access to the IB programmes for under-represented students. The project sought to expose low-income and minority students to challenging and rigorous educational opportunities in years 9 and 10, leading up to the IB DP. The project recognized the potential effectiveness of the rigour of the IB pedagogy for everyone to improve standards. Success was measured by improvement rather than high scores.

The IBDP to transform national education for the twenty first century

In Ecuador, the national education system was completely reformed at the high school level with the implementation of the DP which replaced the previous national curriculum and became the general graduation certification for all. Such a radical approach means that the complexities of grafting a new system onto the old, which is indeed a complicated task in the case of Japan and the IB, can be avoided. But there is a place for real concern about losing traditions which are an integral part of cultural identity.

The IBDP as an international programme that develops high level English skills

International Education is a general term that covers a vast field of theories, practices, and ideologies. Nonetheless as a general term it has become increasingly associated with a positive status and with suggestions that it is an education that promises well for the future of students. Schools as businesses for profit making have promoted these ideas and many offer IB programmes in English in non-English speaking national contexts such as in China. English, as the major global language, is of course seen as an important aspect of international education. Developing communicative English skills in Japanese schools teaching the IB in Japanese is a particular challenge, in terms of available time as well as the development of teacher resources who understand communicative pedagogies.

The various examples described so far illustrate that the IB programme frameworks are adaptable for different purposes. In actual fact they have been deliberately designed to be flexible to suit various cultural contexts. This is a great advantage as models are developed to suit the particular purposes of Japanese contexts so that they can provide opportunities to maximize student potential.

2. Implementing IB pedagogy

Whichever model a Japanese school chooses in implementing IB programmes it must consider how to incorporate the IB pedagogy. Fundamentally this involves a paradigm shift from a transmission model of teaching and learning to an inquiry based model of teaching and learning. Some of the differences between these two models are shown in figure 1. The differences are considerable and call for investment in teacher training and development as well as whole school changes such as library resourcing and IT provision. The role of the teacher in an inquiry based model of learning is that of a mentor and facilitator rather than a transmitter of canonical knowledge from set text books. Developing the students' research skills and higher

order thinking skills such as critical thinking, analysis, and synthesis are important. Concepts that enable the transfer of learning become core to learning. Assessment, as an integral part of the learning process is criteria based and transparent.

It is the IB pedagogy which develops the various skills, knowledge and dispositions which are considered crucial for the twenty-first century context of globalization. But these require a particularly careful consideration with regards to Japanese contexts since they have been manifested so far in a western cultural context. Separating the skills from the particular cultural context in which they have grown, so that they can be applied effectively and appropriately in another very different culture is a difficult and perhaps sometimes delicate matter. For instance, it is often claimed that Japanese students do not question or contradict the teacher's viewpoint out of a sense of respect for the teacher and because they value harmony. Surely respect and harmony are two values that have not only been endorsed throughout time but are currently encompassed in the IB mission to make the world a more peaceful place. In many schools outside Japan these two very important values remain aspirational even though students may be skillful in debating and critical thinking. Introducing an IB pedagogy into a Japanese context requires careful thought about how to maintain well established worthy values while allowing for the development of other skills deemed relevant for today. This is certainly one of the major challenges in implementing IB programmes in Japanese schools and calls for scrupulous attention.

INQUIRY APPROACH to LEARNING	TRANSMISSION MODEL of LEARNING
Curriculum driven by questioning knowledge construction. No set text	Set texts of knowledge drive the curriculum
Library & research skills essential for learning Academic integrity integral to inquiry	Library and research skills not essential for learning Academic 'honesty' more appropriate
Higher order thinking skills (HOTs) important: critical, creative, reflective thinking	Lower order thinking skills often suffice (LOTs): information questions within the text
Conceptual understandings developed as cognitive tools for HOTs	Factual canonical content <u>memorised</u>
Small group work, discussions, collaboration. Teacher facilitates.	Large single classes. Teacher at the front as information provider
Criteria based, transparent assessment	Correct/incorrect answers are marked

Figure 1. Differences between an inquiry model of learning and a transmission approach

3. Other challenges

The development of the IBDP was informed by the UK educational system whereby between the ages of approximately 16 to 18 students study advanced levels in a limited number of subjects for two years in preparation for university. This does not fit with other systems that have a junior high school system and high school system with different time frames. For instance, Japanese high school is three years not two. The academic school year in Europe is from September until June. The IBDP examinations are therefore in May. There are also examinations in November to accommodate the Southern Hemisphere where the academic year is reversed. There is no accommodation for the Japanese academic year which begins in April however. Because of IB regulations designed around Western time zones of Northern

and Southern hemispheres Japanese IB students may be under extra pressure from time constraints. Are there creative solutions for this?

The Opportunities

There is no doubt that the IB programmes develop skills and attributes that are pertinent to our times. And their flexibility for adaptation to various contexts reflects the vision of international education as recognizing and honouring multiple perspectives and their commitment to a value of diversity. Diversity provides opportunities for creative synergies.

The IB programmes develop a critical thinking mind set. This is essential in a world where media power must be negotiated. They aspire to develop skills and understandings for peaceful recognition of difference and inclusion. Again, these are arguably essential skills in a world that so easily has access to diverse world views.

The IB programmes are rigorous and their implementation requires attention to the detailed Programme Standards and Practices. The challenges of meeting these standards and practices are an excellent opportunity for pertinent questioning, dialogue, analysis and consideration of what is considered to be a proper path forward with regard to reform in the Japanese educational system. What should be changed? What should be retained?

The considerations are wider than the implementation of the IB programmes. The IB programmes however, can provide a framework or scaffold that can serve to contain important discussions about the purpose of education in Japan in the twenty first century.

There are opportunities within these discussions for a purposeful renewal and revitalization of skills, traditions and values indigenous to Japanese culture that have become hidden but which are actually just as pertinent to present day contexts as critical thinking and valuing multiple perspectives. Respect and harmony have already been highlighted. There is also a deep sense of ecology in every day Japanese culture, where nature is appreciated, and where waste is avoided. Social mores that seek to not cause others discomfort are well established. The opportunities for creative synergies between traditions in Japanese culture and ideas brought from IB programmes are rife. With careful consideration and research there are exciting possibilities for new models of learning that may benefit not just Japan but other countries that are seeking change in their educational systems.

Acknowledgements

Thanks to students on the Master's in International Education at the University of Tsukuba and JARIBE members who have shared their thoughts and observations about IB programmes in Japanese contexts.

Resources

International Baccalaureate public website, www.ibo.org

Japan Association for Research into IB Education www.jaribe.org

Sevenoaks School <https://www.sevenoaksschool.org>

Bill and Melinda Gates Foundation www.gatesfoundation.org

IB in Equador www.ibo.org/globalassets/publications/ib-research/ecuadorsummary_eng.pdf

What are Missing on the English Teacher Preparation Programme at Japanese Universities in Terms of Pronunciation Instruction?

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

The purpose of this study is to examine how English pronunciation instruction is dealt with in the teacher preparation programme at Japanese universities and to suggest how the trainees can be better prepared for instructing pronunciation before they start teaching in classroom settings. The literature review verifies a vicious cycle of pronunciation instruction, where 1) teachers are not confident in pronunciation instruction, 2) teachers cannot teach pronunciation sufficiently, 3) secondary school students do not learn pronunciation sufficiently from their teachers, 4) university students cannot pronounce English correctly, 5) pronunciation instruction is not mandatory for obtaining a teaching licence and 6) the curriculum for the teacher preparation course is insufficient; that is, university students do not learn about pronunciation instruction. These stages 1)-6) circulate and it is obviously necessary to end this circulation at some point. Thus, the previous literature stressed the importance of teaching university students on teaching courses the skills to instruct pronunciation to their future students. These skills include ‘how they should deliver the knowledge of pronunciation to students so that they can understand it fully’ and ‘how they should correct students’ inappropriate pronunciation into a pronunciation that is intelligible’. However the author doubts that these suggestions are enough for the trainees to prepare for teaching in classroom settings, and therefore proposes that they should be given opportunities to consider and practise 1) choosing appropriate teaching materials, 2) giving ‘clear instructions’ of tasks to students and 3) making pronunciation tasks student-centred and communicative with adequate student-talking time.

Keywords: pronunciation instruction, English phonetics and phonology, teacher training, syllabus design

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Introduction

In April, 2018, English language teaching began to be aimed at third- and fourth-grade pupils, aged 8-10, at public primary schools in Japan. Currently these lessons are held fifteen times a year, and in 2020, they will be increased to thirty-five. This means that primary school pupils in Japan will experience more and more exposure to English and its sounds at an early age of learning. In addition, MEXT (2017), in the New Course of Study, states that we should focus on ‘contemporary standard pronunciation’ and that we should instruct ‘basic phonological features’ of English at primary schools (p. 33). This means that pronunciation instruction is likely to be of more importance at Japanese schools. However Zielinski and Yates (2014, in Murphy, 2017; 16) claims that ‘learners’ spoken intelligibility may suffer long-term negative effects if attention to pronunciation is neglected during the initial stages’. Therefore pronunciation has to be taught very carefully in these classes.

The importance of pronunciation instruction is also supported from learners’ perspective. Ota (2013) reports that pronunciation instruction leads to the enhancement of learners’ motivation and confidence in learning English and Ota (2012) reveals that students are in favour of being taught pronunciation at an early stage of their career in learning English. These findings indicate that teaching English pronunciation cannot be ignored in classes and it is likely that teachers are expected to be able to instruct it.

Then, who is supposed to be in charge of teaching English pronunciation? Of course it is Japanese English teachers in most cases. As Murphy (2017) states, in EFL settings, there are more learners taught by non-native English speakers than native speakers (p.16), and this is also the case in Japan. Japanese English teachers cannot leave the teaching of English pronunciation to native English counterparts; they themselves need to be in charge of it.

All these facts above considered, it is essential that Japanese teachers should be well-prepared for teaching English pronunciation, and for this goal teacher preparation programmes at universities will inevitably play an important role. However very little research has been conducted on what constitutes adequate preparation for pronunciation teaching (Brinton, 2018; 1860). Therefore, this paper, referring to various literature, will examine how English pronunciation instruction is dealt with on the English teacher preparation programme at Japanese universities and discuss how it could be improved.

The status of pronunciation instruction on the teacher preparation programme in Japan

Kochiyama et al. (2013) investigated the syllabuses of modules on the teacher preparation programme offered by universities in Japan. According to their survey, 75.2% of the 1,084 syllabuses did not focus on English pronunciation at all. That is, those syllabuses did not deal with English pronunciation even in one lecture of the whole module. In addition, 40.2% of 289 departments offering teacher preparation programme do not provide English pronunciation modules. This is because such modules are not compulsory in obtaining a teaching licence in Japan and it is up to the university whether they offer those modules. It is clear that there is some defect

regarding the teacher preparation programme in Japan with respect to English pronunciation instruction, which leads to Japanese English teachers’ lack of confidence in teaching pronunciation and their being unable to teach it. This results in the fact that secondary school students do not learn pronunciation in the classroom and that they continue to be incapable of pronouncing English properly when they become university students, some of whom will take the English teacher preparation programme. This vicious cycle of pronunciation instruction is demonstrated by Kochiyama et al. (2013) as in Figure 1.

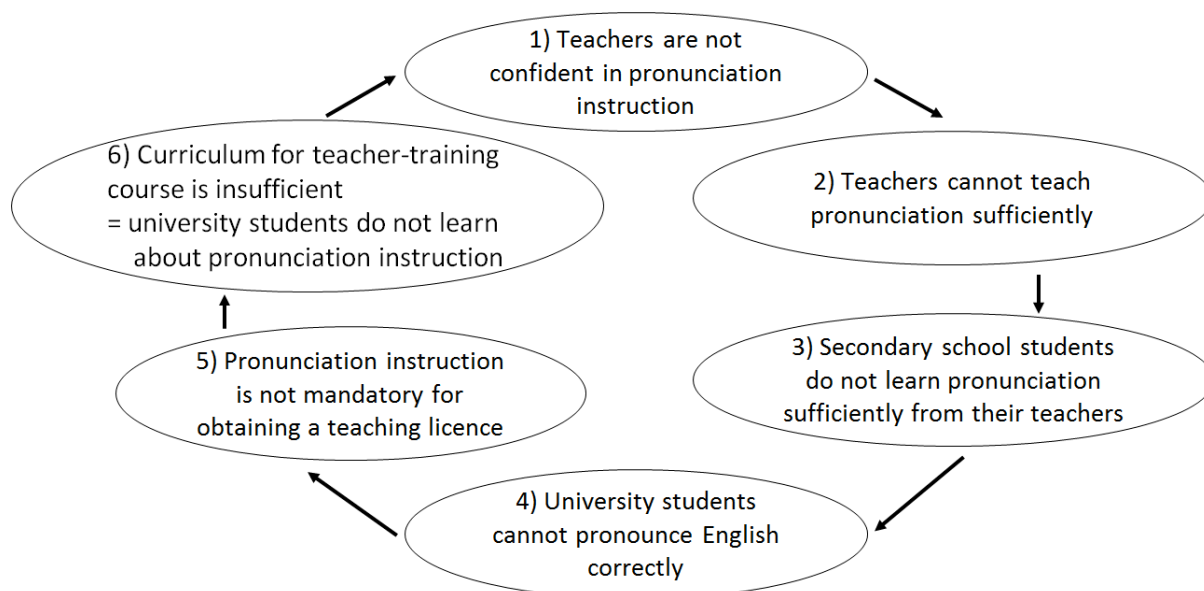


Figure 1. The vicious cycle of pronunciation instruction (Kochiyama et al., 2013; 128, translation by the author)

For the purpose of improving the current situation of pronunciation instruction at school, we must take action to end this cycle and 6) in Figure 1 will be the stage we should work on.

Kochiyama et al. (2013) and Arimoto and Kochiyama (2015) identify three factors in Figure 2 as essential in order for Japanese English teachers to be able to instruct pronunciation in classrooms and propose that these factors should be targeted on the teacher preparation programme.

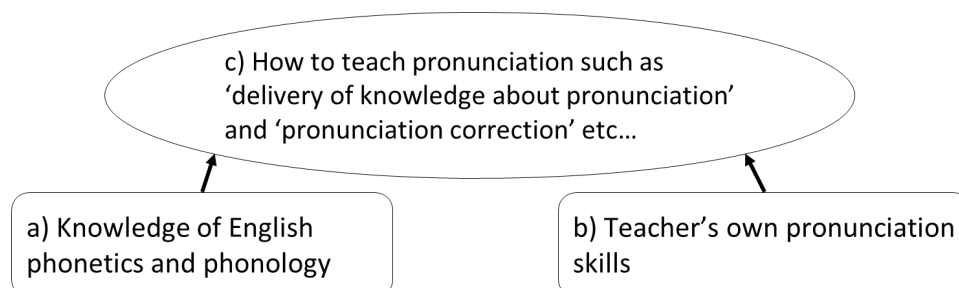


Figure 2. Skills necessary for pronunciation teaching (Kochiyama et al., 2013; 123, translation by the author)

a) refers to a type of knowledge traditionally taught in English phonetics and phonology modules, such as vowels, consonants, connected speech phenomena and

prosody. b) is likely to be acquired in the course of learning a) with some amount of training. c), which is labelled as ‘procedural and pedagogical knowledge about how to teach pronunciation’ by Murphy (2017; 23), is rather a broad category and tends to be vague. In addition this category is ‘more difficult to acquire than reading and discussion alone’ (ibid). Therefore, regarding c), it is necessary to investigate what factors and stages are important in instructing pre-service teachers how to teach pronunciation and to investigate what techniques and materials help them to be prepared for and confident in teaching pronunciation in classrooms. The following section will discuss the importance of offering pre-service teachers the opportunity to consider and practise 1) choosing appropriate materials, 2) giving clear task instructions to students and 3) making pronunciation tasks student-centred and communicative with student-talking time secured.

Suggested contents and stages of a pronunciation instruction module

1. Choice of appropriate materials

In the first place, the type of tasks or materials must be discussed. The conventional way of teaching is ‘listen and repeat’ but it is out of context and is not communicative. Jones (2018) emphasises that teaching materials should be contextualised and Farrelly (2018) claims that the activities should be implemented ‘in a way that impacts meaning’ (p. 1711). In terms of another aspect of communicativeness, each activity could be processed individually first and in pairs next, in which case learners use English during the activity. The importance of such communicative pronunciation teaching is supported by Henrichsen and Frizen (2000), who found that students who had experienced it had positive attitudes towards it. The activity must also be interesting so that it can ‘maintain their overall involvement in English learning’ (McVeigh, 2018; 1620). Thus pronunciation activities should be contextualised, communicative and interesting.

With regard to the preparation of teaching materials, it is necessary to bear in mind that teachers do not have to design these activities by themselves. The use of existing, published materials is encouraged by researchers (e.g. Jones, 2018; Murphy, 2017; Ota, 2013) and Murphy (2018) attaches importance to giving pre-service teachers access to activity recipe collections, the examples of which are Hancock (1995; 2017), Miller (2007) and Henrichsen et al. (1999). They even may not know the existence of such useful collections of activities. Using these materials also saves novice teachers a lot of time when planning lessons (Marks 2014).

With these premises of teaching materials discussed, then what process enables pre-service teachers to make full use of above materials? First, Japanese pre-service teachers listen to L2 speech, which is available online through sources such as YouTube video clips and International Dialects of English Archive (IDEA), as well as by recording their friend’s and peer trainee’s speech. In the next stage, they analyse the L2 speech, employing English phonetics and phonology knowledge. In this analysis, they need to focus on the sound that lowers intelligibility (‘the extent to which a listener has understood what a speaker said) and/or comprehensibility (‘the degree of effort required by a listener to understand an utterance) (Downing and Munro 2015). This stage trains pre-service teachers spotting learners’ pronunciation needs. Trainees may find this difficult, in which case they can work with their peer

trainees. The next is the actual teaching phase, consisting of five stages in Celce-Murcia et al. (2010)'s communicative framework. This is comprehensively summarised by Nazari and Mirsaeedi (2017) as in Table 1. Step 1 is rather explicit but it becomes more contextualised and communicative as the step advances. Even minimal pair exercises can be contextualised and communicative. For example, as for the sounds /l/ and /r/, Stage 2 sets a contextualised activity, where learners listen to the sentence 'The teacher collected/corrected the homework' (Celce-Murcia et al., 2010; 53). It is a minimal pair exercise but it is presented in a certain context and it impacts the meaning. Miller (2007) also includes similar communicative minimal pair activities.

Table 1. Celce-Murcia et al. (2010)'s communicative framework summarised in Nazari and Mirsaeedi (2017; 862)

Steps	Activities
1	Description and Analysis – oral and written illustrations of how the feature is produced and when it occurs with spoken discourse.
2	Listening Discrimination – focused listening practices with feedback on learners' ability to correctly discriminate the feature.
3	Controlled Practice – oral reading of minimal pair sentences, short dialogue etc., with special attention paid to the highlighted feature in order to raise learner consciousness
4	Guided Practice – structured communication exercise, such as information-gap activities, cued dialogues, and cued strip stories, that makes the learner monitored for the specified feature as he/she engage in controlled communication.
5	Communicative Practice – less structured, fluency-building activities (e.g. role-play, problem solving, interviews) that require the learner to attend to both form and content of utterances.

In order to instruct pronunciation in the classroom, (pre-service) teachers need to plan a lesson by considering which sounds should be stressed and which material is best used in a particular lesson. This cannot be done on the spot. It is also necessary to plan at which stage of a lesson pronunciation instruction should be given. Marks (2014) claims that it should not be planned at the end of the lesson because it is likely to be omitted when the time is running out.

So far, how pre-service teachers practise choosing appropriate materials has been discussed. However, this is not the end of a series of stages that the author proposes. Teachers must give feedback to students after tasks and activities. Usually pronunciation instruction is followed by corrective feedback and this is effective indeed, but Foote et al. (2016) insist on its insufficiency. Corrective feedback is likely to be reactive and it tends to deal with an individual student. They suggest that feedback should be proactive and target the whole class. Another feature of feedback is whether it is immediate or delayed. In order not to interrupt learners' activities, i.e. the communication with their conversational partners, pre-service teachers also must practice giving delayed feedback.

This is the cycle of training pre-service teachers to teach pronunciation of particular sounds or features and once this is done, it proceeds to the next target.

2. Clear instructions of tasks and activities

When the use of existing materials is discussed, it is also significant to mention the instruction of tasks and activities. As Sowell (2017) states, 'mastering instruction-giving is a fundamental aspect of good classroom teaching practice' (p.10). It is often the case that teachers believe they give a clear instruction on the task while students are at a loss what to do with it. Therefore pre-service teachers need to raise their awareness of the importance of good instruction-giving. One good approach may be having the module instructor give an unsuccessful task instruction to pre-service teachers, who then evaluate it and discuss how it will be improved. Once their awareness is raised, they are provided with a workshop activity, where they practise giving instructions. Giving good instructions results from practising classroom language, writing clear and simple instruction, timing for giving handouts, modelling, giving time limit and instruction checking question (Sowell, 2017; 17) and this whole activity can be instructed between groups of pre-service teachers within the module.

3. Student-centred, communicative tasks with adequate student-talking time

Lastly, as is discussed above, a communicative task can be retrieved from activity recipe collections by carefully examining whether it is contextualised and impacts a meaning. A task can be done individually first and in pairs afterwards or in pairs from the start, depending on its type. The key is to get learners to work in pairs so that they will have more student-talking time than otherwise. Another key is that pre-service teachers 'abandon the traditional director role' (Henrichsen and Fritzen, 2000; 71) and practise playing the role of facilitator by monitoring how engaged their fellow trainees are in the task and by preparing for delayed feedback.

It is also helpful to get pre-service teachers to design a tailor-made task according to the proficiency level of learners so that they will be more engaged. If a task is modified into a personalised one, learners are likely to be more engaged, for example.

In order to put into practise the three points discussed above, the module instructor must plan each lesson thoroughly and establish a good rapport with pre-service teachers.

Conclusion and suggestions for a future pronunciation instruction training on the teacher preparation programme in Japan

This paper emphasised the importance of pronunciation instruction modules on the teacher preparation programme in Japan and posed problems regarding the current situation of pronunciation instruction at the secondary school and university levels. The author proposed three points that would enhance pre-service teachers' procedural and pedagogical knowledge about pronunciation instruction. In order for these points to be implemented on the teacher preparation programme, an English phonetics and phonology module or a pronunciation instruction module should be compulsory in getting a teaching licence. In an ideal situation, it will be at least one year long to cover both English phonetics and phonology knowledge and procedural and pedagogical knowledge. The whole module should also treat topics such as pronunciation instruction model and its goal, assessment, integration into other lessons, designing tailor-made tasks and the use of technology. If all the

above-mentioned items are implemented on the teacher preparation programme with the module convenor's enthusiasm about instructing pre-service teachers, the author feels confident that the vicious cycle of pronunciation instruction will end.

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The Dynamical System of Character Education in Indonesia

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

There has been growing interest in Indonesia's character education, especially after The Presidential Regulation no. 87 of 2017 on Strengthening Character Education and The 2003 National Education System Law. Indonesia is predicted will be a great industrial country in 2045. A stable education system is essential to build a nation and accelerate Indonesia's development to have political, social and economic advancements. Making changes of character education is essential, but is also bound and fraught to have challenges, supporters, detractors, and obstacles. The education system is becoming more complex, interconnected and dynamic because of the surroundings of constant changes and uncertainties. The system thinking (causal loop diagram) is used in this paper to describe, model and analyze these complex issues in terms of the processes, information, organizational boundaries and strategies of Character Education in Indonesia. This paper shows it is necessary to observe the whole system as a cyclic feedback loop, not just observe variables as separate things independently and linearly. The education system is not linear, it is cyclical. Finally, goals be well defined, actors, be rational and know their parts, threats, and challenges are anticipated and the 'best' solution be chosen in order to implement character education quickly and efficiently.

Keywords: Character Education, System Thinking, Development and Policy Evaluation

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Introduction

Indonesia has the vision of the Indonesia Golden Generation 2045 on their 100th independence day. In 2045, Indonesia is predicted will be a great industrial country in the world. The vision is also to build a nation and accelerate Indonesia's development to have political, social and economic advancements. There are 4 pillars of Indonesia's vision of 2045: (1) human resource development and mastery of science and technology, (2) sustainable economic development, (3) equitable development, and (4) national security and governance (Bappenas, 2018) Indonesia is predicted to be ranked 6th as the country with the most population in the world in 2050 with a population of 321 million people or 319 million people in 2045 (United Nations, 2015 and BPS, 2018). Indonesia has a "demographic bonus" with 63 million young people (citizens aged 18-30 years) or 26 percent of the total population (238 million) in 2014 (UNFPA, 2014).

Character quality is one aspect of building the 2045 Golden Generation, accompanied by abilities in basic literacy aspects and 21st century competencies. The people of Indonesia needs to have these skills to support this vision to face the changing trend and global competition. The common skills that needed for success in the 21st century are creativity and innovation, critical thinking and problem solving, communication, collaboration, information management, effective use of technology, career and life skills, and cultural awareness (Beers, 2018). In fact, Indonesia ranks 113th out of 188 countries with HDI score of 0.689 or as ranked 5th out of 10 ASEAN countries (UNDP, 2016). A low HDI score will affect the nation's competitiveness in global competition. Indonesia also faces problems of intolerance, acts of violence, drugs, criminal acts, and other youth problems. The development of a stable education system is very important to do as an investment in the quality of human resources to improve economic growth, reduce poverty and unemployment. Indonesia translates the resolution of this problem through a policy of strengthening character education in Presidential Regulation No. 87 of 2017 and Ministry Regulation on strengthening character education in formal school No. 20 of 2018.

A policy has seven important characteristic: (1) policy involves government, (2) policy is a stated intention or commitment, (3) policy involves hypothesizing, (4) policy is any action that brings about an effect or outcome, (5) Policy is a response to an issue or situation, (6) policy is about the choices that are made, and (7) policy involves mediating the values and interest (Dredge & Jenkins, 2007). A policy model can help us understand how these seven characteristics correlate in a policy. Tasrif (2014) said that the model, qualified and capable to be used as a means of analysis to formulate (design) the policy, must be a vehicle to find effective ways, and means of interventions in a system (phenomenon). In through this intervention, the desired system behavior can be obtained (Tasrif, 2014). Therefore, I will discuss the phenomenon's structure of character education in Indonesia. First, how the elements constructing the character education in Indonesia?. Second, how the interactions among this element in strengthening character education in Indonesia?.

Character Education

In the context of The National Movement on Mental Revolution, Indonesia tries to use education as a means of shaping the character and personality of students by

integrating character education in the curriculum and school learning system (Permendikbud No 20 Tahun 2018). Education is a cornerstone of economic and social development; primary education is its foundation (Lockheed & Verspoor, 1991). In June 2018, 9 months after “Presidential Regulation no. 87 of 2017 on Strengthening Character Education” Ministry of Education determines “Ministerial Regulation no. 20 of 2018 on Strengthening Character Education In Formal Education Unit” from primary to secondary education. Strengthening character education is a continuation and revitalization of the national character education movement that began in 2010. The education of children must nurture the creativity that will determine their ability to survive and flourish in a chaotic world (Jackson, Oliver, Shaw, & Wisdom, 2006). Character education is an educational program in schools to strengthen the character of students through harmonization of the heart (ethics and spiritual), sense (aesthetic), thought (literacy and enumeration) and sports (kinesthetic) in accordance with the philosophy of Pancasila (Peraturan Presiden No 87 Tahun 2017).

The regulation stated that character values are the result of the actualization of the Pancasila, the 3 pillars of the national mental revolution movement policy, local wisdom of Indonesia and future challenges. The value of character education that must be integrated in the school curriculum consists of 18 character values (Permendikbud No 20 Tahun 2018), namely: (1) Religious, (2) Honest, (3) Tolerance, (4) Discipline, (5) Hard Work, (6) Creative, (7) Independent, (8) Democratic, (9) Curiosity, (10) Sense of Pride, (11) Patriotism, (12) Respect for Achievement, (13) Friendship/ Communicative, (14) Peace-loving, (15) Fond of Reading, (16) Caring Environment, (17) Social Care, and (20) Responsibility (Peraturan Presiden No 87 Tahun 2017 and Permendikbud No 20 Tahun 2018). The 18 values is the embodiment of 5 main values, namely religiosity, nationalism, independence, cooperation (gotong royong) and integrity that is integrated into the curriculum. These values are connected and reflex by their ability with one’s self, others, nationality, god, and environmental awareness. The school needs to apply these 18 values in school. Character education is carried out through class- based, school-based and community-based management.

Method

Problems are things or states that someone thinks are worthy of attention or investigation (Jackson, Oliver, Shaw, & Wisdom, 2006). Problems might be visualized from two very different perspectives: (1) sees a problem as an issue that needs to be resolved or rectified, and (2) there is an opportunity for something different (Jackson, Oliver, Shaw, & Wisdom, 2006). Structure in a social phenomenon consists of two structures, (1) physical structure formed by the accumulation (stock) and flow network of people, goods, energy, and materials, and (2) decision-making structure formed by the accumulation (stock) and information flow network used by actors (human) in the system those describe the rules of their decision-making processes (Tasrif, 2014).

The system thinking is used in this paper to describe, model and analyze these complex issues in terms of the processes, information, organizational boundaries and strategies of Character Education in Indonesia. System thinking is a methodology for studying and managing complex feedback systems, such as one finds in business or

other social systems and system dynamics is used to take the additional step of constructing computer simulation models (Sterman, 2000). The feedback loop represents the circularly link cause and effect of the variables, not the statistical correlation relationships. The cause-effect link of a pair of variables, in a phenomenon, should be viewed with a concept that the influence of other variables to the considered effect variable does not exist (Richardson, Alexander, & Pugh, 1981). A causal diagram consists of variables connected by arrows denoting the causal influences among the variables. Each causal link is assigned a polarity, either positive (+) or negative (-) to indicate how the dependent variable changes when the independent variable changes (Sterman, 2000). There are 2 types of feedback loops, positive feedback loop (growth), and negative feedback loop (goal-seeking) (Richardson, Alexander, & Pugh, 1981). The important loops are highlighted by a loop identifier which shows whether the loop is a positive (reinforcement) or negative (balancing) feedback (Sterman, 2000). In this discussion, I explained about balancing and reinforcing loop that affects this phenomenon. After that, I presented the main causal loop diagram of character education in Indonesia.

Discussion

In this discussion, there are 4 main elements related to character education as a phenomenon. First, related to school focus and policies on character education. Second, related to proper teaching and learning strategies of character education. Third, related to character competencies of students in school. Fourth, family and community engagement.

School Focus and Policies on Character Education

Educational policies on character education (The Presidential Regulation No 07 of 2017, Ministry Regulation No 20 of 2018 and other relevant national or regional policies) increase the school's focus on character education. This focus will reduce the gap of character based on character competencies of student in school. These character of student are the potential that we called as good human resources for the Indonesia Golden Generation in 2045 that support by Indonesia National Movement on Mental Revolution (Figure 1). The first loop is balancing-loop or goal-seeking of character education, that is how to make students have character competencies following the expectations and goals of the school. School must be able to use the available resources in school to reduce the gap.

Collaboration between school committee and principal is essential to keep an eye on the agenda in its path which will influence the role of the school principal in management related to the implementation of character education or what we called as school-based management (Figure 2). School-based management provides authority and responsibility to the school principal, teachers, and school supervisors and education staff together with school committees according to the needs and context of the education unit (Permendikbud No 20 Tahun 2018). School committee is an independent institution consisting of parents/ guardians of students, school communities, and community leaders or public figure who care about education (Permendikbud No 75 Tahun 2016).

Partnerships among schools to complement strategies in applying characters need to be done (Figure 3). Partnership will help the schools to hand in hand create the foundation about the goals to be achieved, how to achieve and how to measure this achievement. The problems faced by the school can also be solved by resolutions that other schools have done, learning by others problems or addressing school problems together. Good partnership increase demand for strengthening character values and education. Teacher competencies of teaching and learning strategies play an essential role in the implementation of character in students learning process. Teacher competency will increase the number of teachers concerning about character education, but this is not automatic. In many cases, teachers need to experience the importance of character education through training and mentoring from the education office. The proportion of training and mentoring depends on the policy itself (Figure 4). The training also can be done by organization that related to education.

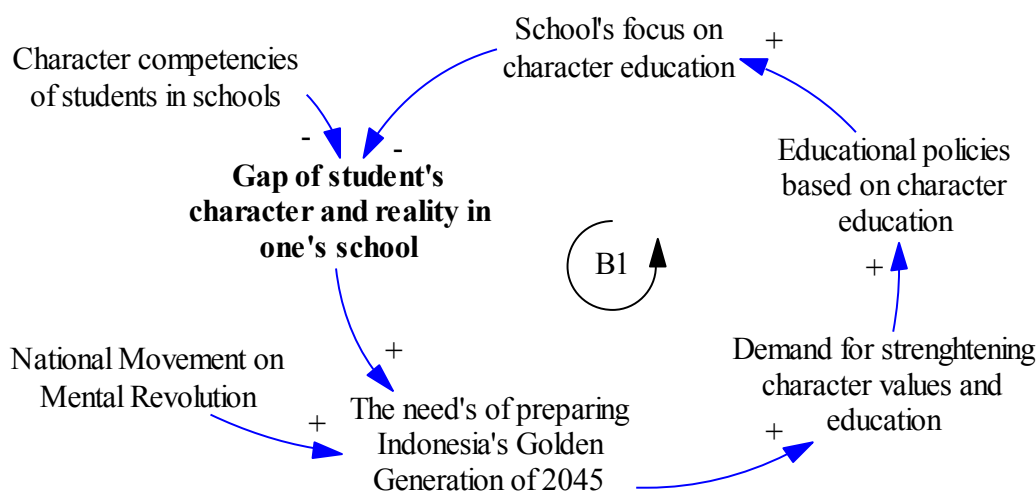


Figure 1: Balancing loop of reducing the gap of student’s character and reality in school

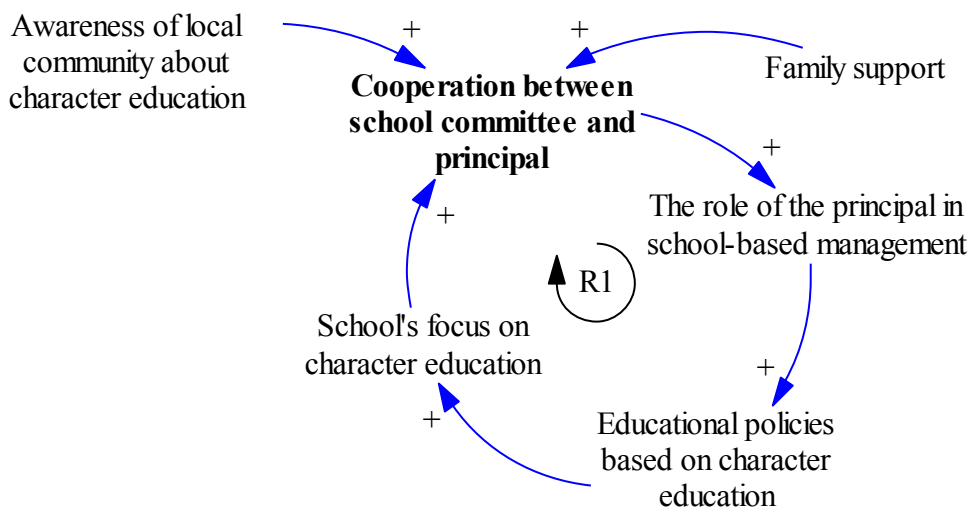


Figure 2: Reinforcing loop of cooperation between school committee and principal

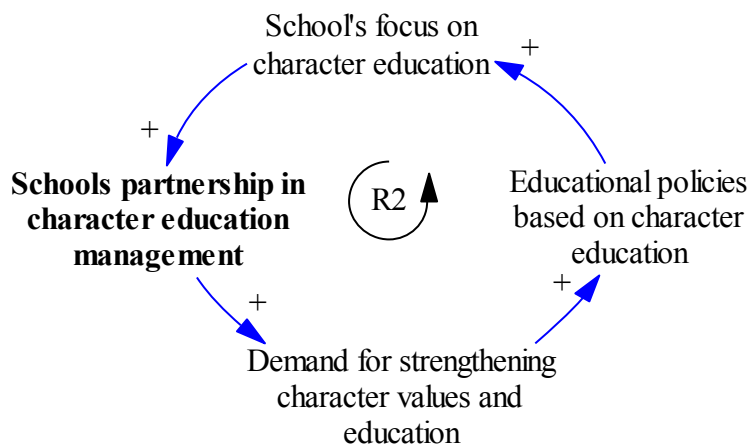


Figure 3: Reinforcing loop of schools partnership in character education management

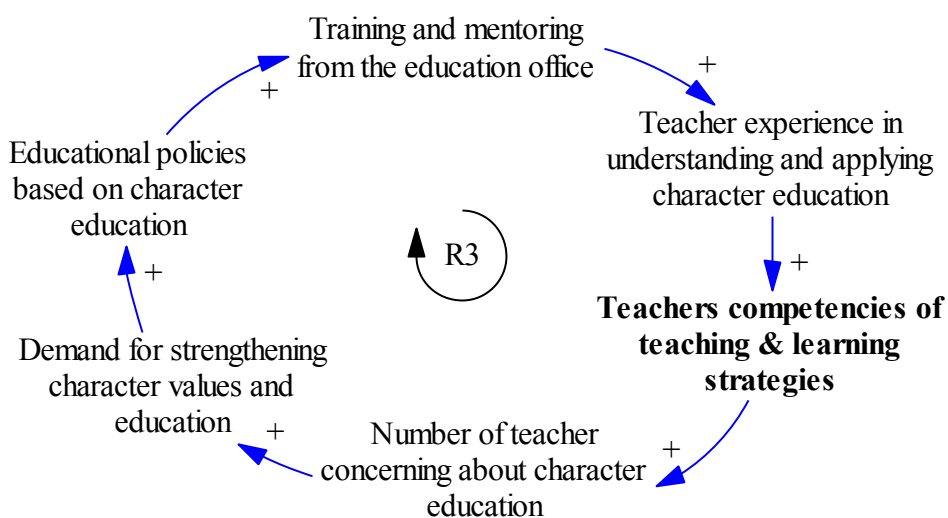


Figure 4: Reinforcing loop of teachers competencies and educational policies

Proper Teaching and Learning Process

Proper teaching and learning process always deal with development and adjustment to keep up with changes and needs. The culture-lag between what is needed in the present and what the schools offer has always existed (Jackson, Oliver, Shaw, & Wisdom, 2006). One of the most challenging aspects of teaching is to generate goals and processes that are in reach of the students but not beyond their grasp (Joyce, Weil, & Calhoun, 2011). There are 7 reinforcing loops about proper teaching and learning process. The process of learning must be able to facilitate students to be able to ask questions, and not just how to answer questions. The intensity of character education in class also dependent on character content volume in learning time at school. We must not forget that there are also lessons that must be delivered related to science and other material, time is crucial. The content needs to be integrated in teaching and learning process in class (Figure 5). If the proportion of character content volume in class is definite, the teacher will have the motivation to achieve or complete the learning plan. Teacher motivation for applying strategies also depends on their experience in understanding and applying character education. Motivation plays a critical role in guiding student behavior (Ambrose, Bridges, DiPietro, Lovett, &

Norman, 2010). The critical role of motivation is also happening in teachers to apply these strategies. The experience support teacher to understand why students need character and lead them to easily apply the strategies (Figure 6).

The teacher experience increases teacher competencies in teaching and learning. If they have the experience and competencies, they know the path and tools to apply these strategies. Just like before, the education office can intervene in teacher experience with training and mentoring (Figure 7). Indonesia is a diverse country with different cultures, races, and religions. What is important is that their local knowledge and characteristic are part of the education agenda of Indonesia. One way is from co-curricular activities related to local culture activities, such as religious activities in Bali, the use of traditional school uniform (batik) in Yogyakarta, traditional games and dances. Co-curricular activities are activities related to the subject of local content determined by the local government following the provisions of the law (Permendikbud No 20 Tahun 2018). Thematic teaching and learning are also can be done by learning in a particular context or providing a context for character values, such as real-life scenario to encourage tolerance (Figure 8).

Curriculum is a set of plans and also arrangements for the learning purpose, content, and also teaching materials and the method used as a guideline in the implementation of activities in the learning process. Troublesome assumptions exist in curriculum design; that knowledge can be owned and distributed; that all individuals learn in the same way as receivers of knowledge; that the time it takes someone to learn something is important; that error is negative, revealing one's lack of intelligence; and that knowledge is owned and disseminated according to the rules of individual academic disciplines (Cullen, Michael, & Hill, 2012). These assumptions must be broken to make sure that education is applied properly. Character education is not just about the change in one lesson activity, but throughout the curriculum, even in all school activities. The school must consider what material to teach, how best to teach it, and how to ensure that students what is being taught (Davis, 2009). In the learning process, students must be able to do 4 main activities: watching, thinking, doing, and feeling (Saeed, 1997). Curriculum becomes a guideline to teacher about strategies and activities plan in class. The proper curriculum will help teacher to able to determine assessments of the character values of students in a class (Figure 9).

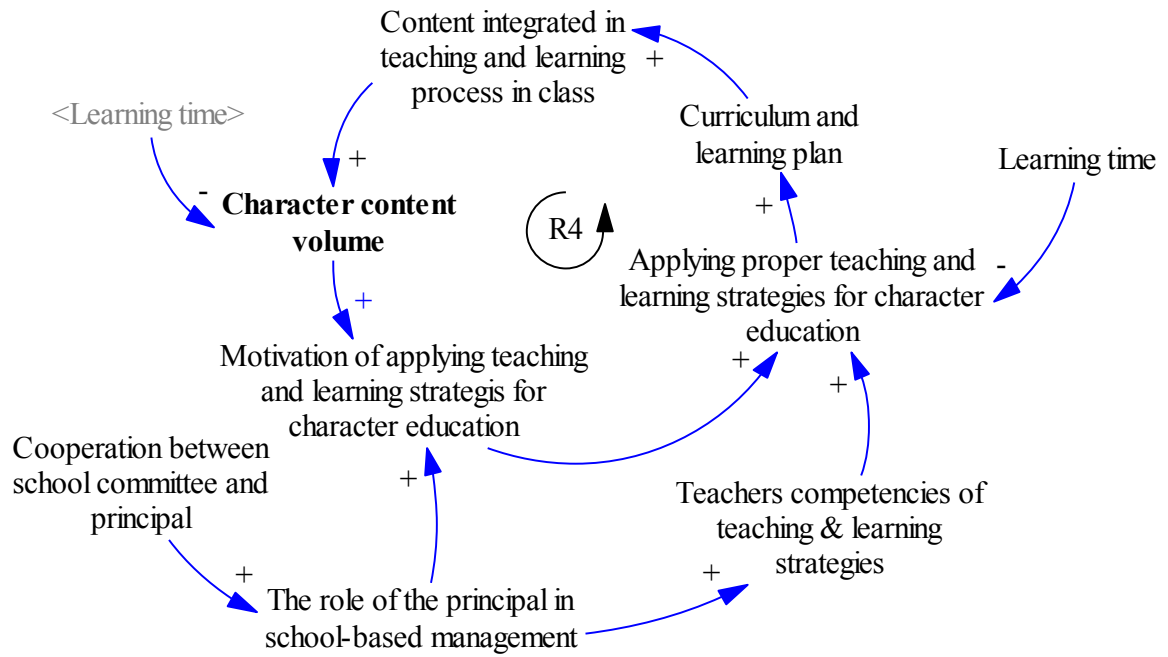


Figure 5: Reinforcing loop of character content volume in school's learning process

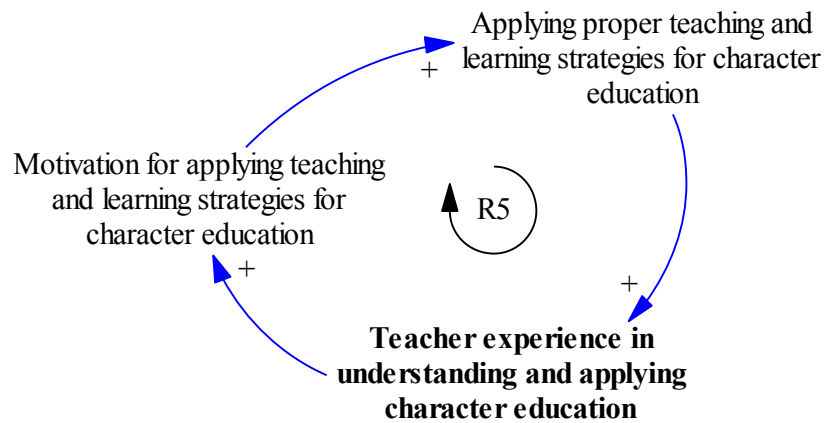


Figure 6: Reinforcing loop of teacher experience of understanding and applying character education

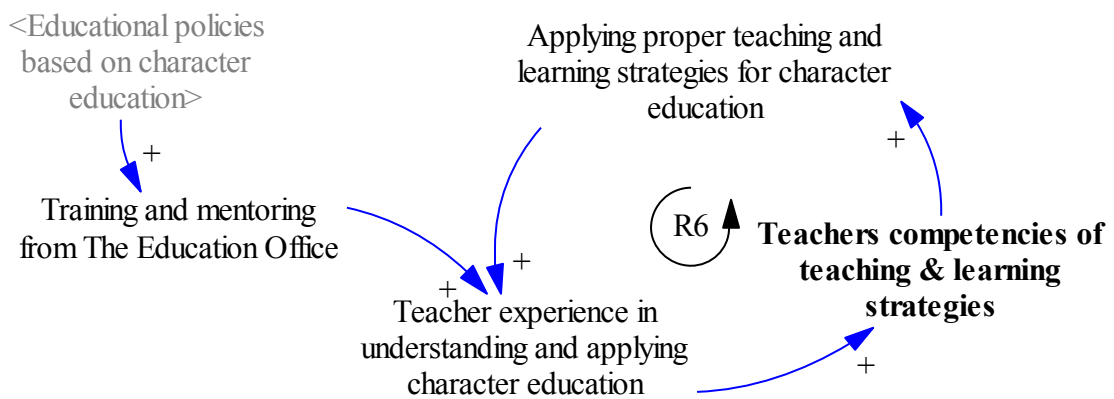


Figure 7: Reinforcing loop of teacher competencies of teaching & learning strategies

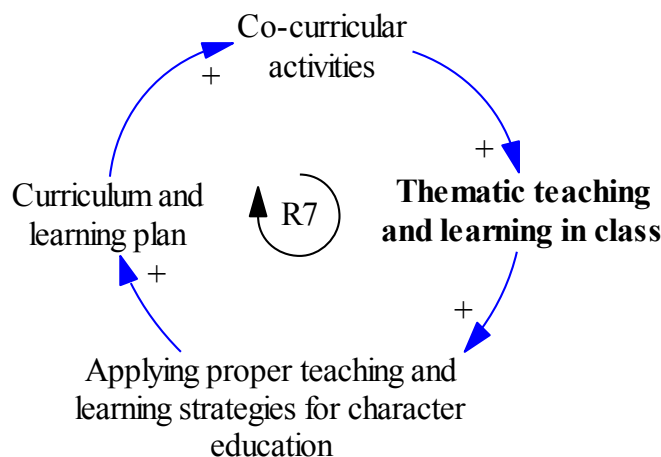


Figure 8: Reinforcing Loop of Thematic teaching and learning in class

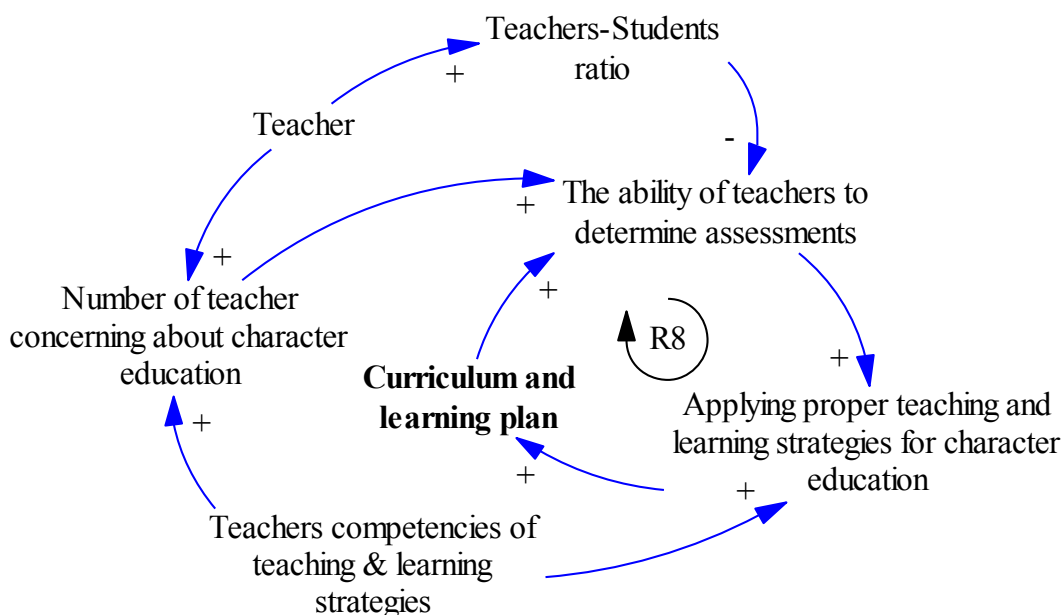


Figure 9: Reinforcing Loop of curriculum and learning plan

We cannot be focused on student learning if we are not checking to see if learning is taking place (Cullen, Michael, & Hill, 2012). Learning outcomes, instructional activities, and assessments of student learning are consistent and reinforce each other (Davis, 2009). The level of ease of assessment depends on the comprehensive curriculum design and teacher ability (Figure 10). Measures of learning can be of many kinds, from school grades, content analysis of student work, up to curriculum relevant tests (Joyce, Weil, & Calhoun, 2011). The proper teaching and learning strategies also depend on the facilities and learning time. The less school time, the less time to learn in class and the less of content volume can be taught. The use of facilities in schools will also increase, not to mention the number of students who are not balanced with the number of facilities.

The ratio of teacher-student in Indonesia is 1:16. In some schools, the teacher-student ratio is 1:35 or even more. The student-teacher ratio reflects the average number of students faced by a teacher (whether the teacher is eligible to teach or not) at a certain level of education (Subdit Statistik Pendidikan dan Kesejahteraan Sosial, 2017). The assessment help school to understand if the values of character education have owned

by student or not. The ability of teachers to determine assessments practices vary among teachers, so the school principal and educational office can train and mentoring teacher about how to assess and what criteria that need to be asses. This assessment ability is linear with the content and outcomes that will establish by character education. The monitoring and evaluation will help the school to manage the implementation next year (Figure 11). Applying appropriate teaching and learning strategies for character education is not just the individual's efforts in the classroom. Teachers need to connect with students, school principals, school administrators, schools commit, community, accompanied by training and mentoring from the education office to determine how to accomplish its purpose.

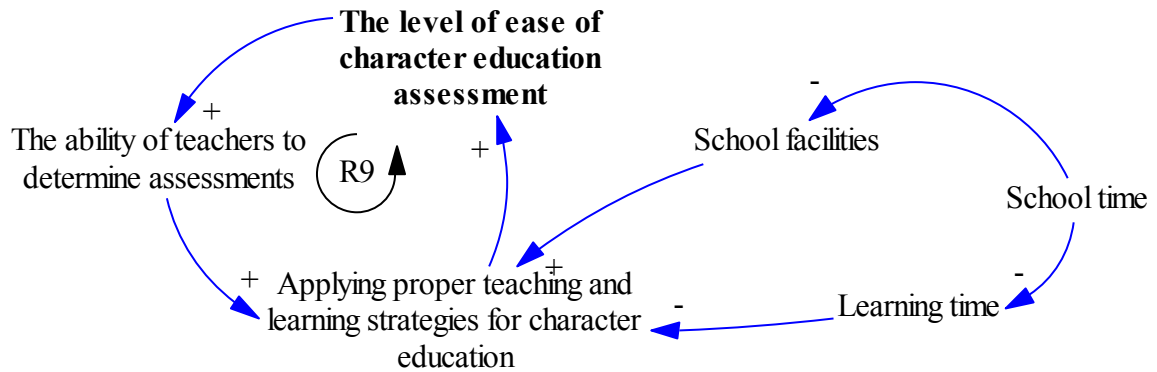


Figure 10: Reinforcing Loop of The level of ease of character education assessment

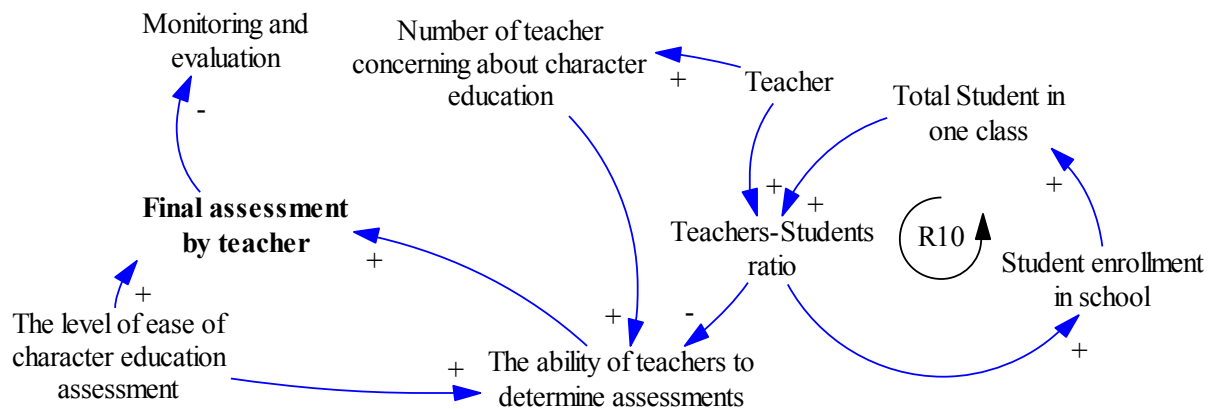


Figure 11: Reinforcing Loop of Teacher-Students ratio and Final Assessment

school based on the quality of teaching and expectations by the family related to their children development in school. Trust is a critical component of collaborative partnerships between families and teachers, and trusting relationship begins with teachers who are committed to and respectful of all families (Grand & Ray, 2013). When the trust and awareness is established, family will increase the family support in every school event involvement, such as their role in school committee. Indonesia is a diverse and complex society with different race, culture, socio-economic, religion, we can see this diversity on the reason why we have 18 character values to implement in school. This diversity also happens in the family background of students (Figure 13).

Implementation of character education also involving and empowering the community as learning resources (Permendikbud No 20 Tahun 2018). The community can volunteer in school activities or become part of the school committee. Family and community members can also be asked to participate in developing standards and curriculum for the local school district (Grand & Ray, 2013). Unlike family involvement, the community doesn't have much interest in school activities if it's not related to their children or their children not in that school. Partnerships with the community need to be done to increase awareness about character education. This can be done by principals, administrators, and academic staff, teachers, districts, education offices, or organizations related to education (Figure 14). Existing loops will be interrelated to create an environment that supports the implementation of character education and becomes a unified whole as a causal loop diagram of character education in Indonesia (Figure 15).

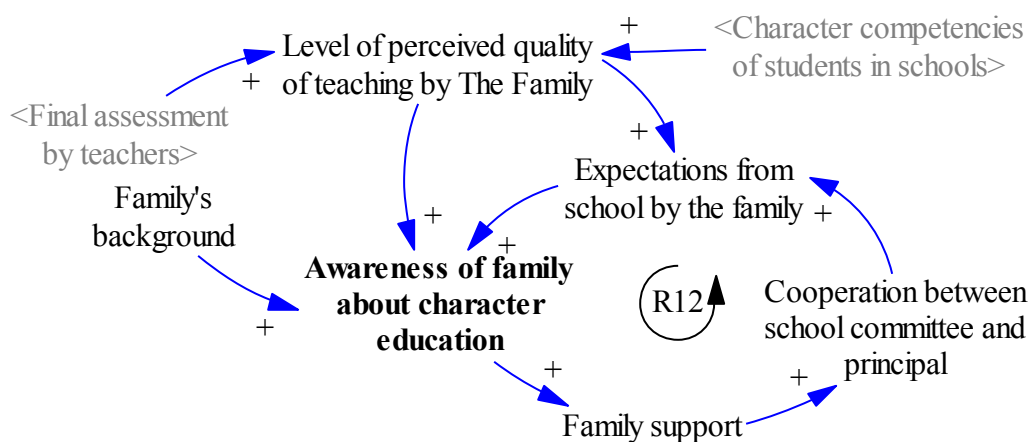


Figure 13: Reinforcing Loop of Family Engagement

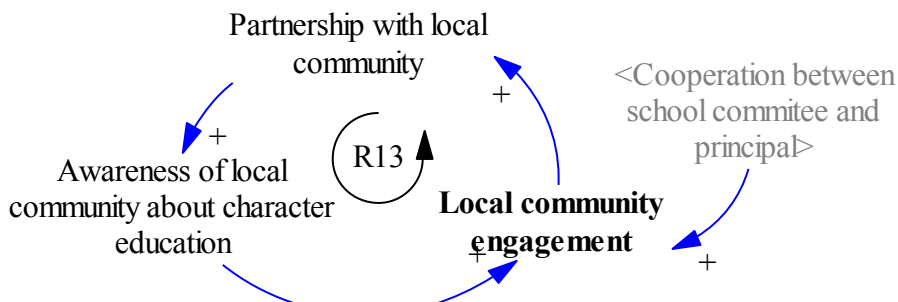


Figure 14: Reinforcing Loop of Local Community Engagement

Causal Loop Diagram of Character Education in Indonesia

Finally, from the part to the whole we can understand that the implementation is not just about the policies or just teaching and learning strategies. What students learn from the learning process in school must support student ability and competencies in real life, especially with the 18 character values. Applying Character education is not just the individual's efforts in the classroom. Education involves all agents (people, organization, networks, and other collaborative associations) continually interacting and influencing each other in ways that cannot be conceived or explained in detail, but from which new forms of organization, new relationship, and patterns of behavior emerge. (Jackson, Oliver, Shaw, & Wisdom, 2006). The implementation meets the problems, such as less support from family, lack of facilities, human resources problem, even the learning process and methods. Character education faces a lot of difficulties to be applied, but it is still possible.

Every aspects, actors, and action have their role to make sure the vision of Golden Generation of Indonesia in 2045. Every actor needs to develop awareness and engage with everyone about character education. The government as the policymakers must include every actor, not just the teachers and schools committee to make sure that character education is correctly done. Teachers in school must have the ability to manage the teaching and learning process from the curriculum plan until final assessment. The Principal must have good management (class-based, school-based and community-based management) (Permendikbud No 20 Tahun 2018). Family and community involvement must be done (Figure 15). It is very clear about existing regulations, the government does not explicitly involve students in existing regulations. Students are still objects, while subjects consist of principals, teachers, and academic staff, community and government. Students should be the subject as well as the object of activity and consider interactions and factors that influence their character and personality in school.

Conclusion

We can see elements related to the implementation of character education from the causal loop with 4 major elements, (1) school focus and policies on character education, (2) appropriate teaching and learning strategies, (3) character competencies of the student, and (4) family and community engagement. Every actor needs to develop awareness and engage with everyone. The government as the policymakers, teachers, the principal, academic staff, families, communities, and students. Character education is about change throughout the curriculum, even in all school activities because all elements are inseparable. Character education is an interaction of every element that takes times and not constant changes. If the interactions of each element done correctly, the gap of student's character and reality in one's school will reduce. The improvement of student character will indicate the achievement of good education and character education, so students can apply this character in real life. Further questions are how and what is the right model of teaching and learning, when or how long it takes to achieve or see the result of character education and is every teacher have the same opportunity to implement the character values in their lesson materials?

Acknowledgements

This research was funded and supported by The Indonesia Endowment Fund for Education (LPDP). In this great chance, researchers want to say thanks to LPDP for all the helps.

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Eliciting Colloquial English Expressions in EFL Classrooms: Are Voice-Over Activities More Effective than Dubbing Activities?

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

This study aimed to explore the effectiveness of voice-over activities compared to dubbing activities in eliciting and having university students practice colloquial English expressions inside EFL classrooms under communicative and task-based approaches. Seventy-six Japanese university students prepared, practiced, and presented an English voice-over for a Japanese video clip shown without any audio. Twenty Chinese students also participated for intercultural comparison. The data was analyzed statistically and qualitatively and was also compared with the dubbing data in a previous study, which used the same material with Japanese audio. For the Japanese data, the average number of word types, tokens, and sentences as well as the distribution of sentence structures did not differ significantly from the dubbing data. However, more diverse and creative expressions frequently occurred in the voice-over data, whereas the same expressions repeatedly appeared in the dubbing data likely due to the accessibility to the original Japanese lines. Differences between Japanese and Chinese students diminished in the voice-over data, indicating that voice-over activities can sufficiently eliminate the influence of the original language of the material, while maintaining a certain level of linguistic complexity of the output. Feedback from participants was quite positive, suggesting that voice-over activities can be a highly effective and engaging way to elicit colloquial expressions in EFL contexts.

Keywords: English education, EFL, communication, colloquial expressions, classroom activity, voice-over, dubbing

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Introduction

“Is there a fun and effective activity to have students practice colloquial English expressions inside the classroom?” This question, which was one of the questions emerged from teaching English communication classes in Japan, was the starting point of the current research. Communicative language teaching (CLT) and task-based language teaching (TBLT) have been popular in Asia (Butler, 2017). Japan has been no exception to this trend although the extent of their implementation in reality has remained somewhat unclear (e.g., Humphries & Burns, 2015; Nishino & Watanabe, 2008). As Japan is in an English as a foreign language (EFL) context (Seargeant, 2009, p. 60), or in the Expanding Circle (Kachru, 1985, pp.12-13), English is not widely used outside of English classrooms.

According to Savignon (2005), the key of CLT is “the engagement of learners in communication to allow them to develop their communicative competence” (p. 635). One of the elements of communication is producing output. Swain (2005), promoting the output hypothesis, stated that “the act of producing language (speaking or writing) constitutes, under certain circumstances, part of the process of second language learning” (p. 471). In an EFL context, activities and tasks can be helpful for increasing the amount of English output inside the English classroom.

Under TBLT, a task is defined as “a workplan that requires learners to process language pragmatically in order to achieve an outcome that can be evaluated in terms of whether the correct or appropriate propositional content has been conveyed” (Ellis, 2003, p. 16). Bygate (2016) further explained tasks as activities in the classroom which require learners to use the target language in a pragmatic way (p. 381). In English communication classes where the current study took place, various tasks and activities which matched the objectives of the course were utilized including problem-solving tasks, information-gap activities, discussion, presentations, and debate. The instructor occasionally taught colloquial expressions to students, yet how to have students practice colloquial expressions effectively inside the classroom remained as an unsolved problem on the part of the instructor.

In the literature, researchers have long emphasized the necessity of teaching colloquial expressions. For example, Engkent (1986), more than 30 years ago, claimed the importance for students to learn the difference between formal and informal ways of speaking. Rühlemann (2008) further emphasized the importance of teaching conversational features. Although it is still not very common, there are English textbooks which have included a chapter on introducing and explaining colloquial expressions, for instance Beglar and Murray (2016).

Researchers have investigated and suggested various methods for teaching colloquial expressions. Taking advantage of technology and the Internet, some researchers have found the potential of online communities for language teaching (e.g., Sockett & Toffoli, 2012). This includes platforms such as videoconferencing (Loranc-Paszylk, 2015) and Facebook and its messaging functions (Acharya & Mohanty, 2013) for learning foreign languages. Recently, AI-based more flexible and realistic chatterbots (e.g., Sha, 2009) and free-talking dialogues systems for teaching conversational English (e.g., Mazur, Rzepka, & Araki, 2011) have been developed and being tested as well.

Other methods have included the use of music, films, and television series. For instance, Lems (2016) has outlined possible ways of using music for language teaching, that is, responding to performance, using karaoke, and using lyric visualization videos. Films, or movies have also been used, and for example, Seferoğlu (2008) found that watching movies helped students learn about conversational cues and informal English. Television series have also been used for similar purposes, especially the American drama series *Friends*; for example, Baños (2013) analyzed the translation of intensifiers in informal language from English into Spanish.

Subtitles of movies and dramas have also been used as teaching materials. Subtitles refer to the texts that appear on the screen based on the dialogues and commentary. According to Frumuselu, De Maeyer, Donche, & Plana (2015), subtitles are primarily in viewers' first language, which are added to help them understand the foreign language audio (interlingual subtitles), but they can also be in the same language as the original audio (intralingual subtitles) (p. 108). Two related concepts to subtitles are dubbing and voice-over. Both dubbing and voice-over are audio aids for movies and videos. Dubbing, on one hand, replaces the original dialogues and commentary with the translated version. Voice-over, on the other hand, refers to someone not on the screen describing the scene or giving voice to someone or something which does not speak. This includes voice acting, and it can be in any language.

There have been many studies on subtitles and subtitling and some positive effects on language learning have been revealed. Subtitles usually mean using subtitles as an aid of listening, and subtitling refers to the process of making subtitles. For example, Talaván (2010) explored the potential of subtitles and subtitling as an activity to improve oral comprehension skills. Čepón (2011) tested effects of reversed interlingual subtitles for incidental foreign language learning through surveys and observed that they had positive effects on retention of phonological information. Frumuselu et al. (2015), through an experimental study, then confirmed that intralingual subtitles were actually more effective than interlingual subtitles. In relation with subtitling, there is a genre of it called "fansubbing," resulting from the popularity of Japanese anime, and this phenomenon has also been receiving researchers' attention (e.g., Bold, 2011; González, 2007; Lee, 2011).

Research on dubbing has mainly been conducted as part of translation studies. However, some studies have investigated the use of dubbing as a language teaching activity. For example, Chiu (2012) analyzed students' perceptions of dubbing activities and found that the students felt dubbing helped them improve pronunciation, intonation, and fluency. Danan (2011) was a detailed exploratory study on the use of extensive dubbing projects as part of the coursework. Through observation, questionnaires, and casual interviews, he found that dubbing activities had linguistic and motivational benefits. Takahashi and Taniguchi (2017) has analyzed linguistic aspects and cultural differences of an English dubbing activity of a Japanese anime clip in English communication classes. The results of this study are integrated in the current study in order to compare the effects of a voice-over activity with a dubbing activity. Although translation is now considered as a communicative act (e.g., Danan, 2010, p. 442), there is likely to be influence of the first language in case of subtitling or dubbing activities which use materials in participants' first language because they

can access to the original dialogues.

Voice-over activities can potentially eliminate an overt influence of the first language by not allowing participants to access the original dialogues in their first language. However, there has not been much data-based research on the effects of voice-over activities in having students practice colloquial English expressions. Takahashi (2018) was an exploratory, preliminary study on this topic and identified some preliminary features of voice-over activities with regard to linguistic features, cultural differences, and differences from dubbing activities. However, different materials were used for the comparison of voice-over and dubbing activities, resulting in the need of a more structured research.

In order to explore the use and effectiveness of voice-over activities to have students practice colloquial English expressions, four research questions were set: (1) What linguistic features can voice-over activities elicit? (2) How are the expressions observed in voice-over data different from those in dubbing data? (3) Are there any cultural influence and differences? (4) How are students' reactions?

Methodology

Participants

For this study, 76 first-year Japanese university students from 4 English classes took part. They were taking English communication classes whose main medium of instruction was English. Three classes were upper intermediate level, and one class was intermediate level. In addition to Japanese students, 20 Chinese university students participated in the study for a brief cultural comparison. They were exchange students at a different Japanese university, and they were taking an English language seminar. The main medium of instruction was also English, and the English level of the class was upper intermediate.

Materials

For the material, a two and a half minute video clip from the first episode of the anime series *Tamako Market* (2013) was selected. The anime was based on the everyday life of a high school student, with some unusual twists involving a messenger bird from a faraway kingdom. This material was chosen for the current study because it was the same material used in Takahashi and Taniguchi (2017), which was a study on a dubbing activity, so that the data and results would be directly comparable. The initial reason for the selection of the video was based on the request by participants and the clarity of the original lines. This length was the maximum length which did not interfere with the flow of the course schedule. Two sets of worksheets were also prepared. The first worksheet included a brief instruction and the list of the characters at the beginning. It then provided the timeline of the storyline, indicating the speaker and the timing of the utterance in the video [e.g., Tamako (0:30), Florist (0:33)]. There were 38 lines in total. The other worksheet provided 14 screenshots of the video, each for a set of lines, which students could refer to as an aid in addition to the video. It also included a brief comment section at the end. Both worksheets were collected after the class, and the first worksheet was returned to the students the following week with feedback from the instructor. The video clip and screenshots were used only for

this academic purpose.

Procedure

First of all, the anime clip was shown to participants once without any audio. The two worksheets were then distributed and participants and the instructor went over the first worksheet together. The instructor paused the video at every line on the worksheet and made sure everyone understood which line corresponded to which scene of the video. The instructor also provided an explanation of the second worksheet. Participants were then given approximately 50 minutes and were asked to prepare a voice-over script in pairs (Japanese students) or individually (Chinese students) without using a dictionary. Throughout the preparation time, the video clip was kept playing on the large screen in the front with the time indicator but without any audio. Participants were given approximately 10 minutes to practice the voice-over, and then they performed the voice-over in front of the class or in medium-sized groups depending on the remaining time of the 90 minute class time. The instructor then asked the participants to fill in the comment section and submit the two worksheets. Participants had an opportunity to watch the video with the original Japanese audio at the very end of the class.

Results and Analysis

The collected data was analyzed quantitatively and qualitatively. Two types of software were used for analysis: AntConc (Anthony, 2017) and SPSS (ver. 23). As mentioned above, the results were also compared with those in Takahashi and Taniguchi (2017), which used the same material for a dubbing activity. A brief comparison with the preliminary study (Takahashi, 2018) was also included.

Here is an example of a voice-over script produced by a pair of Japanese students in one of the upper intermediate classes. Good afternoon/ Good afternoon. Good to see you/ It's been a while since I came here last time/ How about today's final assembly?/ Quite good. Can I put my bag somewhere?/ Of course. This way/ These flowers are really beautiful/ These are new arrivals today/ They seem nice/ They smell sweet in the evening/ There's something here/ A bird?/ Oh my god, are you OK?/ This bird blocks my eyes! I can't see anything!/ Where did it come from on earth?/ Why it was in this shop?/ It's amazing/ Let me look closer/ Hello/ It can speak!/ Yep. Let's go outside/ What?/ Wait!/ Where do you wanna take me to?/ I wanna go home first/ You will take me home?/ But my mother won't allow me to keep a pet/ So what do you gonna do/ I don't know. We'll see/ It's that your pet?/ No, it's not/ Your bird it's so cute/ It's not my pet/ Can you do this?/ Yes, I can teach you if you want to/ What's this?/ Wait! What are you doing?/ Welcome. Thanks.

Word Count

In total, 33 sets of data were gathered from Japanese university students. Data from three pairs had to be eliminated from analysis because they had only finished the first half of the script. There were five pairs (four pairs in the intermediate class, one pair in one of the upper intermediate classes) who had left some blanks toward the end, but their data was included as long as the total number of blanks was less than seven. In total, 5079 word tokens and 535 word types were produced, which added up to 1557

sentences, phrases, and sentence fragments. On average, one pair produced 151.4 tokens (min: 107, Max: 226), 81.5 types (min: 63, Max: 123), and 46.9 sentences, phrases, and sentence fragments (min: 38, Max: 65). The average type/token ratio, or TTR, was 53.8%. In the dubbing data (Takahashi & Taniguchi, 2017, p. 289), based on 16 sets of data (52 students), 2599 word tokens, 292 word types, 699 sentences, phrases, and sentence fragments were produced, with the average of 162.4 tokens (min: 145, Max: 195), 84.9 types (min: 74, Max: 99), and 43.7 sentences, phrases, and sentence fragments (min: 40, Max: 51). TTR was 52.3%. Compared with the dubbing data, the average number of tokens and types appeared slightly lower, but the differences were not significant ($\chi^2=.387$, $df=1$, $p=.534$; $\chi^2=.054$, $df=1$, $p=.816$). TTR also only differed by 1.5%. For the voice-over activity, students in the intermediate level class on average (126 tokens/ 74.5 types) produced less number of tokens compared to students in the upper intermediate level classes (157.3/ 82.9, 157.4/ 82.9, 165/ 85.8), but this may have to do with four pairs having left some blanks toward the end of the script due to lack of time as mentioned above. In Takahashi (2018), students produced a significantly less number of tokens and types on average compared to a dubbing activity, but the results of the current study indicated that the choice of the material was an important, influential factor.

Compared with Chinese university students (195 tokens, 97.9 types), the average number of tokens produced by Japanese university students for this voice-over activity was significantly lower ($\chi^2=5.595$, $df=1$, $p=.018$). As the total number of sentences, phrases, and sentence fragments did not differ significantly ($\chi^2=.011$, $df=1$, $p=.918$), this shows that Chinese students produced longer sentences and phrases than Japanese students. This tendency has been consistently observed in Takahashi and Taniguchi (2017) as well as in Takahashi (2018).

High Frequency Words

Table 3.1 shows the high frequency words in the voice-over data produced by Japanese university students per 1000 tokens. Table 3.2 shows the high frequency words in the dubbing data of the same material based on Takahashi and Taniguchi (2017).

Table 3.1 Top 30 High Frequency Words in the Voice-Over Data by Japanese Students

1	I	55.3	11	flower	16.9	21	can	10.4
2	you	50.0	12	no	16.7		m (I'm)	
3	is	38.2	13	are	15.9		me	
4	this	35.0	14	s (it's)	15.0	24	have	10.2
5	it	27.4	15	oh	14.6	25	your	9.6
6	bird	25.6	16	hello	14.4	26	why	9.5
7	do	22.1	17	to	14.0	27	ok	9.3
8	what	21.3	18	The	13.6		yes	
9	nt (not)	18.7	19	a	12.6	29	did	8.3
10	my	16.9	20	today	12.4	30	wow	7.7

Table 3.2 Top 30 High Frequency Words in the Dubbing Data

1	you	59.6	11	are	17.7	21	why	11.9
2	I	44.2	12	what	16.5	22	Tama	11.5
3	It	43.9	13	can	15.8	23	hi	10.0
4	bird	34.6	14	a	15.0		surprised	
5	oh	33.1		me		25	did	9.6
6	nt (not)	26.9	16	no	14.6		m (I'm)	
7	do	26.5	17	today	13.5	27	face	9.2
8	s (it's)	23.9	18	good	13.1		in	
9	is	22.7	19	sorry	12.3		so	8.8
10	my	20.8		this		30	girl	8.5

Table 3.3 compares these two sets of data, focusing on words ranked from rank 1 to rank 50 in each set of data. Words which were commonly observed high in frequency included function words, first and second person pronouns, auxiliary “be” verbs, and topics of the story visible on the screen. In the dubbing data, Japanese students tended to use the same words at a high frequency, for example, most students chose “hi” as a greeting word, probably reflecting the casual greeting word in the original Japanese line. In the voice-over data, the number of word types itself did not differ significantly, however, there were more words which were used high in frequency, indicating that students tended to choose some different expressions to describe the same scene.

Table 3.3 Comparison of the High Frequency Words in Voice-Over and Dubbing

Commonly observed high in frequency (Rank 1 to Rank 50)
I, you, is, it, bird, do, what, nt (not), my, no, are, s (it's), oh, a, today, can, m (I'm), me, have, why, did, ok, put, beautiful
Voice-Over> Dubbing (+15 Ranks)
this, flower, hello, to, the, your, yes, wow, of, kendama, please, tamako, want, cute, head, know, at, very, here, in, see, like, nice, pet, was
Dubbing> Voice-Over (+15 Ranks)
sorry, tama, surprised, face, girl, not, with, speak, tama-chan, cold, love, night, fall, praise, and, get, he, hi

Table 3.4 shows the high frequency words in the voice-over data produced by Chinese university students per 1000 tokens. Table 3.5 compares the voice-over data by Japanese university students with the voice-over data by Chinese university students, focusing on words ranked from 1 to 50. More than 30 words within rank 50 were commonly observed high in frequency in both sets of data. The difference between the two groups was actually smaller compared with the difference between Japanese university students and Chinese university students in the dubbing data (see,

Takahashi and Taniguchi, 2017, p. 287). This indicated that voice-over activities could potentially eliminate the influence of the original language well. It also showed that the choice of English expressions became more similar when the original Japanese lines were not provided.

Table 3.4 Top 30 High Frequency Words in the Voice-Over Data by Chinese Students

1	you	46.2	11	oh	16.0		Tamako	
2	I	43.7	12	to	15.1	22	your	10.9
3	it	41.0	13	the	13.9	23	today	9.4
4	is	27.8		this		24	m (I'm)	8.7
5	s (it's)	26.8	15	can	13.6	25	here	8.4
6	a	23.8	16	me	13.0	26	flower	8.1
7	bird	21.1	17	nt (not)	12.7		of	
8	my	20.5	18	do	12.4		that	
9	are	18.7	19	so	12.1	29	have	7.5
10	what	17.8	20	good	11.2		why	

Table 3.5 Comparison between Japanese and Chinese Students Regarding Voice-Over

Commonly observed high in frequency (Rank 1 to Rank 50)
you, I, is, it, bird, do, what, nt (not), my, are, s (it's), oh, to, a, today, can, m (I'm), me, have, your, why, ok, yes, put, good, so, of, on, want, head, hi, at, beautiful, in, see, like, was
Japanese > Chinese (+15 Ranks)
flower, no, hello, did, wow, thank, kendama, please, cute, know, very, nice, pet
Chinese > Japanese (+15 Ranks)
here, that, flowers, there, not, god, from, new, home, go, just, Tamako

Characteristic Expressions

High frequency words reflect characteristic expressions in the data. In the voice-over data by Japanese university students, characteristic expressions included expressions with first and second person pronouns [examples (1) and (2)], expressions based on information visually and directly retrieved from the screen [examples (3) and (4)], descriptive adjectives (e.g., beautiful, cute, nice), and response words (e.g., yes, ok).

- (1) Why do you put a bird on your head?
- (2) I'm better at speaking language than you are.
- (3) Oh, there is something in the flower.
- (4) But this bird is so cute.

Compared with the dubbing data by Japanese students, the voice-over data included more “extras” such as interjections (e.g., oh, wow), intensifiers (e.g., so, very), and response words, which were not included in the original Japanese version. The choice of greeting words also differed, with the dubbing data directly influenced by the original Japanese greeting word as mentioned above. To be more specific, the greeting word “hi,” which reflected the casual greeting word in the original Japanese version, was at rank 41 in the voice-over data (5.1/ 1000 tokens) but at rank 23 in the dubbing data (10.0/ 1000). The word “hello” was more commonly observed in the voice-over data (rank 16: 14.4/ 1000), whereas it was not a preferred choice in the dubbing data (rank 78: 2.7/ 1000). Similarly, the voice-over data included her full name for the main character, while the dubbing data included her nickname because it was repeatedly mentioned in the video. In addition, the dubbing data included expressions which were difficult to speculate from the video clip without audio [examples (5), (6), and (7)].

(5) I’m afraid and I wanna you to get off my head.

(6) Sorry, bird. Did you have a pain?

(7) Hey girl, it’s bad to fall in love with me.

As stated above, there were smaller differences between Japanese and Chinese university students regarding the voice-over data compared with the dubbing data. In case of dubbing, both groups of students were strongly influenced by the original Japanese lines. Although the Chinese students were advanced Japanese speakers, the choice of English expressions corresponding to the original Japanese expressions still clearly differed between Japanese students and Chinese students (Takahashi & Taniguchi, 2017, p. 288). In case of the voice-over activity, some greetings (e.g., hello, thank you), adjectives (e.g., cute, nice), and response words (e.g., no) were more commonly used by Japanese students. However, noticeable differences were based on cultural references, such as “kendama” (a Japanese toy), “karaage” (Japanese fried chicken), and “korokke” (Japanese croquette).

Sentence Structures

Table 3.6 summarizes the total number of sentences (with a clear or implied subject and a verb), phrases, and sentence fragments (others). In total, Japanese university students produced 931 sentences (with a clear or implied subject and a verb), 483 phrases, and 143 sentence fragments for the voice-over activity. As mentioned above in Section 3.1, Chinese students tended to produce longer sentences and phrases, but the proportion of sentences did not differ significantly between Japanese and Chinese students in the voice-over data ($\chi^2=4.549$, $df=2$, $p=.000$). However, the proportion of sentences in the voice-over data by Japanese students was significantly lower than that in the dubbing data ($\chi^2=53.04$, $df=2$, $p=.103$) despite the small difference in the total number on average per script (46.9/ 43.7). In the original Japanese version, there were 33 sentences and 5 sentence fragments. This indicated that students had a tendency to choose phrases rather than sentences when they were asked to do a voice-over rather than dubbing by using conversational, casual expressions.

Table 3.6 Distribution of Sentences, Phrases, and Sentence Fragments (Others)

Japanese University Students (Voice-Over)		
(Total: 1557)	Total	Average
Sentences	931 (59.8%)	27.8
Phrases	483 (31.0%)	14.7
Others	143 (9.2%)	4.4
Japanese University Students (Dubbing)		
(Total: 699)	Total	Average
Sentences	520 (74.4%)	32.5
Phrases	117 (16.7%)	7.3
Others	62 (8.9%)	3.9
Chinese University Students (Voice-Over)		
(Total: 884)	Total:	Average:
Sentences	561 (63.5%)	33.0
Phrases	260 (29.4%)	15.3
Others	63 (7.1%)	3.7

Table 3.7 summarizes the distribution of sentence types classified according to four sentence types, that is, declarative sentences, interrogative sentences, imperative sentences, and exclamatory sentences. This categorization was based on the sentence types outlined by Quirk, Greenbaum, Leech, Svartvik, and Crystal (1985). The proportion of sentence types did not differ significantly between Japanese and Chinese university students with regard to the voice-over data ($\chi^2=4.762$, $df=3$, $p=.190$). As seen on the second and fourth rows of the table, the dubbing data clearly reflected the sentence types of the original Japanese sentences, but the sentences types somewhat deviated from them in the voice-over data. This showed that students had more freedom on how to develop the conversations between the characters. Most of the sentences were simple sentences, and compound and complex sentences were rarely observed (see, Table 3.8).

Table 3.7 Distribution of Sentence Types

	Declarative	Interrogative	Imperative	Exclamatory
Japanese Students (Voice-Over)	517 (55.5%)	294 (31.6%)	113 (12.1%)	7 (0.8%)
Japanese Students (Dubbing)	268 (51.5%)	195 (37.5%)	55 (10.6%)	2 (0.4%)
Chinese Students (Voice-Over)	320 (57.0%)	182 (32.4%)	51 (9.1%)	8 (1.4%)
Cf: Original Japanese Version	17 (51.5%)	12 (36.4%)	4 (12.1%)	0 (0.0%)

Table 3.8 Distribution of Simple, Compound, Complex Sentences

	Simple	Compound	Complex
Japanese Students (Voice-Over)	912 (98.0%)	8 (0.9%)	11 (1.2%)
Japanese Students (Dubbing)	399 (96.4%)	8 (1.9%)	7 (1.7%)
Chinese Students (Voice-Over)	532 (94.8%)	9 (1.6%)	20 (3.6%)

Students' reactions

Comments from students were gathered at the end by using the comment section on the second worksheet. Their comments could be categorized into positive comments and points for improvement. Here are examples of comments from students on what they liked about the activity. *It was fun coming up with the lines by ourselves. We could use expressions for conversations. It was a new and different type of activity. We had to come up with English expressions creatively. It was nice working with a partner. It was a good experience thinking about English expressions without using a dictionary. It trained our imagination. I learned how important it is to know conversational English.* To summarize the keywords of the positive comments, the voice-over activity was perceived by students as a fun and engaging activity which required them to think about English expressions creatively without relying on a dictionary.

Feedback for further improvement included following comments. *I wish each scene was a bit longer. The scenes changed a bit too fast. It was difficult to match the timing of the lines with the video. The story turned out to be somewhat different from what we imagined. It would be better if more examples were provided.* In other words, some participants found the development of the scenes somewhat too fast to follow.

Discussion

The four research questions of the current study were as follows: (1) What linguistic features can voice-over activities elicit? (2) How are the expressions observed in voice-over data different from those in dubbing data? (3) Are there any cultural influence and differences? (4) How are students' reactions?

For the first research question, students tended to rely on basic words and expressions despite their vocabulary repertoire. The majority of the high frequency words were mainly at level 3 or below (elementary level) on ALC's standard vocabulary list ([https://www.alc.co.jp/vocgram /article/svl/](https://www.alc.co.jp/vocgram/article/svl/)). As this was consistent with the preliminary study which used a different material (Takahashi, 2018), this is probably a nature of voice-over activities. At the same time, as differences in the word count diminished between voice-over and dubbing activities when the same material was used, it is likely possible to improve linguistic complexity by providing more challenging materials. Participants tend to choose words and expressions to explain concrete things and ideas directly observed in the video rather than abstract thoughts. Other salient features include first and second person pronouns, short phrases, intensifiers, and interjections. In other words, voice-over activities tend to yield

“casual but simple” expressions.

For the second research question, the following tendencies emerged from the voice-over data. The results of the current study on a voice-over activity was directly comparable with the results of the study on a dubbing activity in Takahashi and Taniguchi (2017) due to the use of the same material. The voice-over activity produced shorter and smaller number of sentences, but a wider range of vocabulary was observed at a higher frequency compared to the dubbing activity. The majority of the sentences were simple sentences in both activities and the distribution of sentence types did not differ significantly. The differences between the voice-over data and the dubbing data were smaller compared to the preliminary study (Takahashi, 2018), which used a different material for the voice-over activity, indicating again that voice-over activities can maintain linguistic challenges for students if materials are chosen carefully. In addition, by doing a voice-over activity rather than a dubbing activity, students received less influence of the original Japanese lines, producing more creative expressions freely as a result.

For the third research question, Chinese students tended to write longer lines, which has been a consistent result in the author’s previous studies (Takahashi & Taniguchi, 2017; Takahashi, 2018). There were smaller differences between the two groups in the voice-over data compared with dubbing except for cultural references, indicating once again that voice-over activities seem to be a good way to eliminate the direct influence of the original language.

For the fourth research question, students’ reactions, especially Japanese students’ reactions were majority positive, indicating that voice-over activities would be an effective addition to an activity and task based English communication class. Both students’ satisfaction level and effectiveness of the activity are likely to further increase by choosing a material whose scenes are clear enough for voice-over activities.

Conclusion

In conclusion, voice-over activities and dubbing activities can both be effective for eliciting and having students practice colloquial English expressions in EFL classrooms in Japan, and possibly in other Asian EFL contexts. Voice-over activities seem to have an advantage over dubbing activities because they have more room for creativity, more potential for pushed output, and more possibility of eliminating the direct influence of the first language. Dubbing activities, on the other hand, have an advantage of integrating more linguistically challenging contents. By adjusting the contents to increase linguistic complexity, it would be possible to further increase the effectiveness of voice-over activities.

One possible limitation of this study was that an “everyday” life story with an unusual twist was chosen as the material, which may have been somewhat unrealistic for some participants. In addition, for a more thorough intercultural comparison, approximately the same number of Chinese students should have ideally been included in the study. Possible topics for future investigation include ways to elicit more linguistically complex and diverse conversational expressions by using voice-over activities and identification of suitable materials for voice-over activities by comparing materials of

different genres.

Acknowledgments

I would like to thank the audience of the 10th annual meeting of the North East Asian Region Language Education Conference for their feedback on the preliminary study, which motivated the current research. I would also like to thank the audience of the Asian Conference on Education 2018 for their insightful comments and feedback.

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*Understanding & Applying Character Education In Chemistry:
A Case Study Of 10th Grade High School In Indonesia*

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

Indonesia tries to balance the quality of content learned and the quality of the characters one' develops. Character education implemented to prepare good human resources in the future as golden generation of Indonesia 2045. Based on The Presidential Regulation no. 87 of 2017 on Strengthening Character Education, there are 18 character values that related to environment, nationality, connected with god, connected with others and connected with one'self. Understanding and applying character values in academic subject matter is very important, such as in chemistry. This paper focused on the integration of character which connected with one'self in chemistry lesson for 10th grade high school student and the respondents are chemistry teachers. 33,3% of respondent never read about the policy and 66,7% can not mention the total of character values. There are 9 chapters of chemistry and 9 values that assessed in this paper. The average is 50% for the dependability and ease of deployment of character values in every chemistry's material, where the highest scores are curiosity and fond of reading. 43% of respondents had difficulty measuring and applying character values and 33,3% had not understood the assessment. These is caused by the lack of training and socialization, no assessment guidelines, the number of student in 1 class and the difficulty determining the benchmark of each student's character.

Keywords: Character Education, assessment, teacher experience, chemistry, practice and praxis.

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Introduction

The development of an increasingly advanced era is characterized by the increasingly rapid development of science and technology increasingly, especially information technology. The development of science and technology has a positive impact on humans, which makes it easier and makes human life more comfortable. For example, the invention of computers makes it easy for humans to write writing, store data, and even listen to music and movies. But on the other hand, the development of science and technology also has a number of negative effects on humans (Sultoni, 2016).

The problem of education in Indonesia is very complex because in all aspects there are problems that need to be resolved. Moral decline has become rampant in the world of education, making it a blurry portrait in the world of education. This can be seen from the proliferation of pornographic videos played by students, rampant student fights, cheating in national examinations, the number of drug cases that ensnare students, the number of motorbikes played by students and various other negative roles that can lead to national morality increasingly deteriorating (Maunah, 2015).

Character is a form of character, character, character inherent in one's personality that is formed from the results of internalization which is used as a basis for thinking and behaving so as to create individual characteristics (Tim Kompilasi, 2008: 682). Individual characters will develop well, if they get the right reinforcement, namely in the form of education.

The world of education today still has many problems. Even the distribution and quality improvement programs have not shown results as expected. The number of children of basic education outside the national education system is still very large. The quality of education is still relatively low. On the other hand, the challenges in various fields of life are getting heavier. The development of science and technology, especially in the fields of information, communication and transportation is very rapid, the escalation of free markets between countries and countries is increasing, and the climate of competition in various aspects of life is getting tougher (Suyitno, 2012).

The Law of the Republic of Indonesia Number 20 of 2003 concerning the National Education System (National Education System) has formulated the functions and objectives of national education. Article 3 of the Law states, "National education functions to develop the ability and shape the character and civilization of the nation with dignity in the framework of educating the life of the nation, aimed at developing the potential of students to become faithful and devoted to God, noble, healthy, knowledgeable, capable, independent, and become a democratic and responsible citizen. "The article is the basis for the development of character education for the formation of human character, especially the younger generation. This character education is expected to be applicable in all high school (SMA) subjects including chemistry subjects considering how important character education is.

Method

Seeing the implicit meaning of the title and the problems studied, this research is a type of quantitative research based on the experience of high school teachers

throughout Indonesia in teaching chemistry class X subjects which were studied using a questionnaire. The primary or primary literature reviewed in this study is Perpres No. 87 of 2017 concerning strengthening character education and character education journals (Bahri, 2015).

Result

Character education in learning must be prepared from the planning, implementation and evaluation stages of learning. In the planning stage, material, methods, media, learning resources, stages of learning, and evaluation must be prepared to support the implementation of character education. The learning component can help develop the types of characters that have been set according to the learning objectives to be achieved (Dianti, 2014). The questionnaire was filled by 39 respondents from chemistry teachers in Indonesia, 61.5% men and 38.5% women, aged 20 to 63 years. Most of the teaching of chemistry subjects in high school are S1 graduates with presentations as much as 79.5% while S2 graduates are as much as 17.9%.

Character education for students in teaching and learning activities is by integrating character values in each subject. The character values delivered are adjusted to character values based on Perpres 87 of 2017 (Santoso, 2014). Character values that need to be invested in students from Religion, Pancasila, Culture, and National Education Goals. The eighteen values are: 1) religious, 2) honest, 3) tolerance, 4) discipline, 5) hard work, 6) creative, 7) independent, 8) democratic, 9) curiosity, 10) national spirit, 11) love of the homeland, 12) appreciate achievement, 13) friendly / communicative, 14) love peace, 15) love to read, 16) care for the environment, 17) care for the social, 18) responsibility (Supranoto, 2015).

Conclusion

33,3% of respondent never read about the policy and 66,7% can not mention the total of character values. There are 9 chapters of chemistry and 9 values that assessed in this paper. The average is 50% for the dependability and ease of depoloyment of character values in every chemistry's material, where the highest scores are curiosity and fond of reading. 43% of respondents had difficulty measuring and applying character values and 33,3% had not understood the assessment. These is caused by the lack of training and socialization, no assessment guidelines, the number of student in 1 class and the difficulty determining the benchmark of each student's character.

Acknowledgement

This research was funded and supported by Indonesia Endowment Fund for Education (LPDP). In this great chance, researchers want to say thanks to LPDP for all the helps.

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Student Ambiguity Tolerance as Predictor of Problem-Solving Ability in Mathematics

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

Development of problem-solving ability among students is one of the main goals of mathematics education. This study investigated the relation between student ambiguity tolerance and their problem-solving ability in mathematics. In particular, it sought to determine whether or not students' positive reaction toward unfamiliar or uncertain stimuli predict their ability to solve non-routine word problems. A total of 182 junior high school students participated in the study. Two instruments were used namely, the McLain Multiple Stimulus Types Ambiguity Tolerance (MSTAT-II) Scale and a problem-solving ability test. Both tests were subjected to validity and reliability analyses. Results showed that ambiguity tolerance predicts problem-solving ability in mathematics. In addition, ambiguity tolerance and problem-solving ability have moderate and positive association. A detailed analysis of student solutions and empirical evidences suggest that the use of open-ended problems be employed across various subject matters in mathematics to develop not only problem-solving skills but critical and logical reasoning as well as creativity among students.

Keywords: ambiguity tolerance, non-routine word problems, problem-solving ability

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Introduction

According to the National Council of Teachers of Mathematics (2000), emphasis should be given on the development of problem-solving skills in the realm of mathematics. There have been a number of researchers who conducted studies on problem-solving in relation to mathematical standards, curriculum, and pedagogies (Sriraman, 2005). In the typical classroom set-up, it was found out that students are more accustomed to dealing with routine problems that are usually found in the textbooks (Lee, 2011; Sibbaluca, 2009). This type of problems is content-specific and usually requires multiple steps that call for a structured solving process. This suggests lack of creativity in the teaching and learning of mathematics. On the other hand, non-routine problems that use ambiguous situations could be helpful in addressing issues related to problem-solving abilities of the students. Researchers affirm that tolerance for ambiguity positively influences one's performance and adjustment in cross-cultural settings (Furnham & Marks, 2013; Jokinen, 2005; Yamazaki & Kayes, 2004). Eisinger (2011) noted that understanding of the abstract and the ambiguous is oftentimes missing both in the K-12 and university classroom.

In the usual classroom set-up, learning ambiguity and accepting the abstract are not being emphasized inside the classroom, yet most of the time, certain attributes of uncertainty are involved in one's daily life encounters, as well as in researches around the world. In addition, open-ended views in mathematics are being neglected in the conduct of pedagogical approaches inside a mathematics classroom. It is a common observance that teachers/ facilitators/ educators often do not use open-ended problems in the set of exercises or tasks given to the students. The teaching practices most often than not deal with textbook mathematics problems that are routine and do not involve engaging activities that will provide opportunities for students to think deeply and perform independently (Lee, 2011).

Considering a comprehensive research about ambiguity tolerance as a means to evaluating students' abilities creates openness for different points of views in the teaching and learning process (Eisinger, 2011). Solving ambiguous problems in mathematics will provide opportunities for the students to think of different solutions and will make way for their creative juices to flow in generating novel ideas and meaningful answers (Tallent, 2016).

Ambiguity and Tolerance

According to Arquero and McLain (2010), ambiguity can be most suitably defined as the lack of necessary information to understand a specific circumstance and come up with comprehensible decisions with expected outcomes. While the definition of ambiguity is closely tied to concepts of generality and indeterminacy, it relies heavily on basic concepts in semantics such as: meaning, denotation and connotation. An expression is ambiguous if and only if the expression has more than one meaning. Another technical definition by linguists is that an expression is ambiguous if and only if the expression can accommodate more than one structural analysis. Tolerance of ambiguity "indicates the capacity to live with ambiguity, endure ambiguity, to operate with and within ambiguity" (Stoycheva, 2011, p.1).

Ambiguity tolerance is considered to be an intrinsic psychological characteristic of a person (Brown, 2007; Steenkamp & Wessels, 2014). It is also defined to be the tendency of an individual (group) to perceive and process information on ambiguous situations. An individual with high ambiguity tolerance may contradict positively or tolerate contradiction in his/ her beliefs and understanding. Individuals with low-tolerance of ambiguity view ambiguous situation as a threat that causes them to react hastily and avoid such stimuli. On the other hand, individuals with high-tolerance of ambiguity could view the situation as an interesting encounter (Brown, 2007 and McLain, 2009).

Since 1990, there were many studies that focus on the relationship of ambiguity tolerance to several fields of interest. In particular, in the realm of foreign language reading and learning, research showed that the ambiguity tolerance of the students, their self-perceived success and strategy training in reading were significantly correlated to each other. Further, research results indicate that the more ambiguity tolerant the learner is, the more successful he could be. This underscores the role of learner training in improving the ambiguity tolerance of the students (Erten & Topkaya, 2009). Since ambiguity demands evaluation or choice, it may pose as a cognitive challenge (Arquero & Tejero, 2009) and therefore more assistance and encouragement from the teachers are needed in learning among low ambiguity tolerant individuals (Chu et al., 2015).

Mathematical Problem-Solving Ability

Problem solving is one the most important components of mathematics. It requires combined creative skills and concepts to deal with specific mathematical situations called real-world problems. However, many researchers acknowledge that most of the students encounter difficulties in solving such problems. Problem-solving is a higher-order thinking process composed of major intellectual abilities and cognitive processes. It is not just about recalling simple facts or applying well-learned methods. Factors that are deemed significant in the problem-solving performance include intelligence, creativity and originality, spatial ability, verbal ability, working memory, and knowledge, all of which are identified as cognitive abilities (Bahar, 2015). Solving problems involves both analytical and creative skills. Through problem solving, students can understand and develop innovative solutions to problems or challenges that may vary in context.

There have been a lot of discussions on the restrictions involved in solving problems inside a mathematics classroom. Sriraman (2005) noted that there are particular ways of solving being prescribed and a standard procedure in teaching how to solve a problem. However, the basic idea of the existing problem-solving models has not yet been defined properly and is being used in a shallower approach. He further explains that the skills intended to be learned by the students in problem-solving have been overshadowed by universal standards and considerations. Unfortunately, the means to understand the process of deepening, synthesizing, and analyzing problems has been ignored and put aside behind the curriculum.

Bahar (2015) also investigated the influence of cognitive abilities on mathematical problem-solving performance of elementary students, separating their performance in open-ended and closed problems. Results showed that mathematical problem-solving

performance can be explained by open-ended (32.3%) and closed (48.2%) problems in variance. Considering the results, general creativity and verbal ability were significant predictors of mathematical problem-solving performance in open-ended problems. On the other hand, mathematical knowledge and general intelligence contributed significantly to closed problem-solving performance.

There have been studies conducted on the use of open-ended questions in mathematical problem solving. Lumpas (1997) identified mathematical errors, difficulties and thought processes of students when he analyzed their solutions to open-ended mathematics problems. He found out that the students had difficulty in the basic concepts such as measurement, perimeter, length of a side of a square, linear equation, ratio, and proportion. Students' lack of understanding in these concepts resulted from their use of wrong mathematical operations, misapprehension of the mathematical language, English language deficiencies, difficulty in translating verbal phrases to mathematical expressions or equations, lack of completeness in the learned concepts, wrong use of data given, defective and incomplete algorithm, computational errors and random responses in the study. Moreover, because of their misconceptions in the lessons learned prior to the conduct of the study, the students were not able to generate or provide correct responses to some questions.

Open-ended problems give much emphasis on the real world and daily experiences of the students. Using these kinds of problems will definitely provide them an opportunity to think deeply and critically as if solving real life problems involving logic and critical thinking. The students are given opportunities to reveal their conceptual understanding through experiences with open-ended problems (Mann, 2006).

Ambiguity Tolerance and Problem-Solving Ability

Ambiguity tolerance helps students handle challenging tasks, cognitive and emotional complexity, and thus enables them to have personal, intellectual and social growth (McLain, 2009). Students with high ambiguity tolerance attain higher scores on tests, produce unique solutions to open-ended problems and perform better in answering various types of puzzles. In addition, ambiguity tolerant students were observed "to deal better with vague language, partial information, tasks with little structure, and multiple perspectives in problem solving" (Williams, 2006, p.85). Teachers therefore, have important roles in helping students cope with ambiguity and use it to their advantage. Teachers' underscoring the importance of critical and creative thinking even when encountering ambiguity offers a good opportunity for the students to extract their creativity and participate in solving complex problems (Eisinger, 2011).

In another study, Dianco (2014) determined the moderator effects of gender and school type on ambiguity tolerance and mathematical ability among students from private and public schools. He used a problem-solving ability test that includes some ambiguous problems, a reasoning skill test and an ambiguity tolerance test. The findings showed that student gender and school type did not moderate the effects of ambiguity tolerance on students' reasoning skills and problem-solving ability. However, results showed a significant difference between public and private high schools in terms of their ambiguity tolerance. He attributed the difference in the ambiguity tolerance of the students from the two schools to the diverse experiences

and social life of the students. Dianco further emphasized that the “complexity of the personal experience and social life brings confusion to the young generation therefore challenging their abilities to deal with uncertainty” (p. 53). Furthermore, his study concluded that ambiguity tolerance correlated negatively with problem-solving ability.

Methodology

This study aimed to determine whether ambiguity tolerance predicts students’ problem-solving ability in mathematics. It is a non-experimental research that employed mixed methods wherein both quantitative and qualitative data collection and analyses were utilized. Data were collected among 182 grade 8 students. Two instruments were used namely, the Multiple Stimulus Types Ambiguity Tolerance (MSTAT-II) Scale (McLain, 2009) and the Problem-Solving Ability Test (PSAT).

The MSTAT-II is a 5-point Likert scale developed by David L. McLain in 2009 to measure the ambiguity tolerance of individuals. It is a 13-item scale with an internal consistency reliability of .83. MSTAT-II was a modification of MSTAT-I, which was likewise developed by McLain in 1993. In this study, the latter was used to obtain the ambiguity tolerance of each student. On the other hand, the PSAT is a researcher-made test composed of six open-ended problems on intermediate algebra. The topics covered are: basic mathematical operations, order of operations, algebraic expressions, set of real numbers, exponents, mathematical sentences, factoring, quadratic polynomials, and complex fractions. All the items in PSAT were devised to stimulate critical thinking and generate creative mathematical solutions and answers. The PSAT was subjected to content validation of mathematics experts. It had reliability coefficient of $\alpha = .518$ when pilot-tested to students after revisions on the were done.

Prior to the administration of the first instrument, the researcher informed the students of the goals of study and their significance in the study. The respondents were also rest-assured of the confidentiality of the information that they will provide to the researcher through the instruments.

Results and Discussion

A simple linear regression analysis was applied to the Problem-Solving Ability Test (PSAT) scores with ambiguity tolerance scores from MSTAT-II as the predictor variable. Table 1 presents the results.

Table 1
Simple Linear Regression on Problem-solving Ability Test Scores Using MSTAT-II Scores as Predictor

Variable	Figural Creativity				
	Model 1 <i>B</i>	Std. Error	<i>Beta</i>	T	p
Constant	-2.07	1.22		-1.69	.093
MSTAT-II	.27	.035	.50	7.69	<.001*
<i>R</i>	.50				
<i>R</i> ²	.25				
ΔR^2	.24				
<i>F</i>	59.1				<.001*

Note. * $p < .05$, $N = 182$

The model summary table shows the simple correlation coefficient between ambiguity tolerance and problem-solving ability, $R(181) = .50$, $p < .001$, which indicates that there is a significant positive association between the two variables. Adjusted R Square value is .24, which means that only 24% of the variation in the problem-solving ability scores can be explained by ambiguity tolerance. The result of the analysis of variance indicates that the regression model is significant, $F(1,180) = 59.1$, $p < .001$. Therefore, problem-solving ability can be predicted by ambiguity tolerance, significantly.

The linear regression model for Problem-solving Ability Test score in terms of Ambiguity Tolerance Test score is given by:

$$\text{PSAT score} = -2.07 + .27 \text{ MSTAT-II score}$$

A point increment in the MSTAT-II score will yield to an increase of .27 in the PSAT score. The ambiguity tolerance score from MSTAT-II has a significant positive weight on problem-solving ability indicating that those students with higher MSTAT-II scores are expected to have higher PSAT scores. Moreover, there is a moderate strength and positive association between ambiguity tolerance and problem-solving ability.

McLain (2009) suggested that students with high ambiguity tolerance attain higher scores on tests, produce unique solutions to open-ended problems and perform better in answering various types of puzzles. In addition, ambiguity tolerant students were observed “to deal better with vague language, partial information, tasks with little structure, and multiple perspectives in problem solving” (Williams, 2006, p.85).

The results somehow contradict the result obtained by Dianco (2014) wherein problem-solving ability correlates negatively with ambiguity tolerance. The difference in the result of the present study and that of Dianco’s can be attributed to the difference in the instruments used in measuring the ambiguity tolerance of the students. Moreover, the sample in the present study came from the set of Grade 8 students who came from a public (laboratory) and a private school whereas in Dianco’s study, the sample came from the set of fourth year students from a regular public and a co-educational private high school. Hence, the background of the students from the two sets of samples might have affected the contradicting results.

Conclusion

This study aimed to determine if ambiguity tolerance is a significant positive predictor of problem-solving ability. After analyzing all the relevant information quantitatively and qualitatively, it was concluded that ambiguity tolerance was a significant positive predictor of problem-solving ability in mathematics, specifically with the use of open-ended problems. Ambiguity tolerance and problem-solving ability have moderate and positive association.

It can also be inferred that the use of ambiguous open-ended problems provided opportunities for students to think critically and creatively, hence providing meaningful solutions. Moreover, the conceptual understanding of the students can be revealed with the use of open-ended problems in mathematics.

Taking into consideration the results and the conclusion, the researcher recommends the following: The use of open-ended problems should be employed by the teachers across various subject matters in Mathematics across grade levels so as to encourage critical and logical reasoning as well as creativity among students. School administrators should create extension/ training programs that will equip their faculty/ personnel as well as other neighboring schools the know-how of ambiguity tolerance, its effects and usability to better enhance approaches and techniques in the teaching and learning process. The Teacher Education Institutions should create programs that will expose pre-service and in-service teachers to the idea of incorporating ambiguous open-ended problems in their lessons in mathematics. Moreover, they should encourage their teachers to also measure their ambiguity tolerance so that they can be equipped with the appropriate tools needed in teaching diverse types of learners.

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Efficacy of Moodle Forum in Teaching and Learning

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

Lecturer-centered pedagogy of teaching and learning is becoming less effective to deliver courses. This paper will examine the efficacy of forum to attain higher retention and better learning outcomes in the higher education sector. Focus is also on how to improve students' participation and engagement using forum as a tool - a factor all employers and academic institutions expect of current students. Thematic analysis indicates that the design of Moodle application with device responsiveness and user-friendliness contributes to enhance the use of forum. Research outcome also shows that the inclusion of forum as formative assessment in all the units in their program assist to improve effectiveness of forum use.

Keywords: Moodle, Forums, Teaching and Learning

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Introduction

Teaching and learning recently face a lot of challenges in present context regardless the size of learners, area of knowledge or the institution – public or private alike. Major issues impeding the welfare of all stakeholders are low student retention, low progression and high attrition rate. Scholarship of Teaching and Learning (SoTL) is tools used by academician and academic institute to mitigate those risks if not eliminated.

SoTL is perpetual inquiry into teaching and learning practices to engage, motivate and retain students (Felten, 2013; Hubball & Clarke, 2010; Kern, Mettetal, Dixon, & Morgan, 2015; Starr-Glass, 2011). As the time evolved, there existed a number of activities related to SoTL: Learning Management System (LMS), e-learning, online learning, problem based learning, project based learning, flipped learning and forum and discussion blog integrated within LMS are just a few to mention.

LMS are of different kinds and two popular LSM are Moodle and Blackboard. A comparison study of these LMSs are found at (Bremer & Bryant, 2005). The history of Moodle dates back to 1999. Since then, it is ever evolving and now it is in current form of version. Many Australian Universities have adopted Moodle as LMS. Regardless the name, both systems consists of repositories of teaching and learning resources including but not limited to quizzes, forums, blogs, wikis and other assessments and modules to mark various assessments online. Melbourne Institute of Technology (MIT) has adopted Moodle as its LMS. The version of Moodle used during this research work is “Moodle 3.4.1+ (Build: 20180308)”. Moodle provides variety of engagement tools including forum in the current version.

Forum is defined as an online space to promote communication among multiple stakeholders such as instructor and students. Moodle forum provides various benefits including able to create dynamic webpages that allow content contributions from the stakeholders, able to link to a particular posting – technically known as permalink, export to Word application, able to view the discussion by all users regardless their contribution and it also support cut off time to edit the post. Besides those all benefits it has some drawbacks. Moodle forum is unable to post additional materials directly to discussion. Extra materials that contributes to richness of information/post is not possible (for example images and other auxiliary documents need to be downloaded as attachment) this drawback directly hampers the testers to test its usability. In addition, image only posting is impossible – it always have to be accompanied by corresponding text.

Moodle supports different type of forum activities including a standard forum for general use, a single simple discussion, each person posts one discussion, question-and-answer forum, and standard forum displayed in blog-like format. In this research work, we have selected question-and-answer forum of the moodle.

Research Background

MIT, now well over 15 years in business as private higher education provider boast multiple streams of Masters and Bachelor’s Degree courses in IT, Business and Engineering. In addition, MIT also run both IT and Business courses affiliated with

Federation University Australia. It houses mostly international students and few domestic students.

Our experience indicated that the majority of international students at MIT are unfamiliar of teaching pedagogy adopted in Australian Universities/Institution. They make a big jump from purely lecturer-centered pedagogy where lecturer takes the lead of teaching with zero input from the learners to active learning where lecturer is nothing more than a facilitator (though there are many institutions depending much on PowerPoint presentation).

In addition to pedagogical gaps in teaching and learning, international students are also burdened by task of cultural assimilation process (e.g. doing and presenting assignments on time, getting involved in active learning, referencing skills etc.). They also face myriads of other problems such as working part-time to cover basic living and tuition fee and full-time study that is a requirement from Australian immigration department.

Experience shows international students lacks knowledge of use of LMS of any form/types. Consequently, students need to rely on rote-memorization of contents from the PowerPoint slides pushed to them by their respective lecturers. The gap of culture of teaching and learning prevalent in Australia along with many problems mentioned above results in low pass rate, low progression rate and high attrition rate.

In this research work, we are evaluating the effectiveness of the forum in the context of teaching and learning and possible remedies to enhance the use of Moodle forum. Therefore, the outcome from the research work will contribute to mitigate the problems including high attrition and low retention.

Related Works

In this section, a brief review of current literature is performed to understand the scenarios of use of forum in student teaching and learning. The paper (Muñoz, Delgado, Rubio, Grilo, & Basto-Fernandes, 2017) presents usefulness of forum or discussion to improve and promote student engagement in teaching and learning. The authors use social network analysis technique during the analysis. The authors in this paper (Pong-inwong & Rungworawut, 2012) analyzed the student attitude toward instructor during teaching and learning using data mining technique. The authors presented the effectiveness of student perception and opinions on forum discussion in (Martinho, Almeida, & Teixeira-Dias, 2014). The paper (Yang & Lin, 2010) examines the relationship between students' perceptions on internet and their online contribution an online writing for exchange program for nursing students. The study found that there is a strong correlation between students' perception on internet and online participation during learning.

Research Methodology

This research work is performed using qualitative research methodology using thematic analysis. The research process is shown in Fig. 1 and it involves several steps:

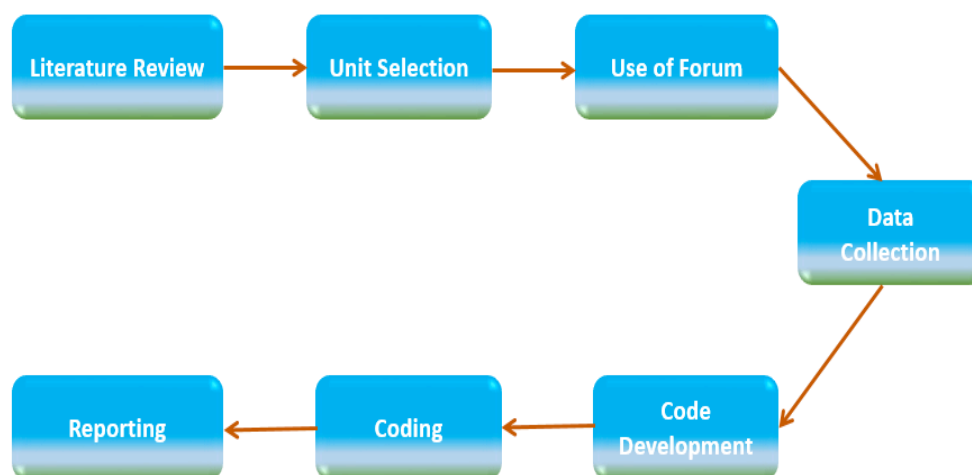


Figure 1: Research method used

- i. Literature Review: A review of current literature on SOTL, use of LMS specifically use of forum in teaching and learning is conducted.
- ii. Unit Selection: Web System of Bachelor of Networking (BNet) is selected for testing effectiveness of forum at MIT.
- iii. Forum: Students are advised about the use of forum on the selected unit at the beginning of the semester. No mark allocated for forum discussion as it is an optional for the student but student are encourage to use during the semester for discussing several issues. Most of the student make response on the forum discussion once but the frequency of use of forum discussion is very low. Therefore, the focus of the research lead to why the student used once forum but not multiple times on the Moodle.
- iv. Data Collection: The data is gathered from students using semi-structured individual interview and group discussion at the end of the semester (Gill, Stewart, Treasure, & Chadwick, 2008). The semi-structure interview allows a balance between the flexibility of unrestricted interviews and the application of a structured survey whereas opinion seeking group discussion is conducted to acquire the problems and ideas informally (University). Researchers collected the data from the individual interview and group discussion using notes taking in diary manually. The interview and group discussion is focus on the following broad areas:
 - a. Previous experiences with LMS and forum.
 - b. Difficulties and problem associated with forum- technical aspects.
 - c. Difficulties and problem associated with forum- academic and general aspects.
 - d. Any other contributing factors.

- v. **Thematic Analysis and Reporting:** The thematic analysis is performed using following steps (Maguire & Delahunt, 2017; Nowell, Norris, White, & Moules, 2017; Thomas & Harden, 2008):
 - a. **Familiarizing with data:** First, the data from the individual semi-structured interview and group discussion is gathered from both researchers. Then, both researchers read those collected data extensively before generating initial codes.
 - b. **Generating initial codes:** Initial coding is performed manually as the number of participants are less than 15. For each participant student, researchers prepare a table with data item and initial codes during this process using colored pen independently.
 - c. **Searching for themes:** The theme is generated using repetition, similarities, differences and pattern in the data. The themes are generated by both the researchers independently.
 - d. **Reviewing and naming themes:** The themes generated by both researchers are compared and adjusted after discussion for consistency. Finally, the themes are generated and named.
 - e. **Report writing:** Finally, the outcome from the thematic analysis is conveyed in form the writing.

Findings and Discussion

The outcome from the thematic analysis is presented in Fig. 2. The thematic analysis indicates that the effectiveness of the forum is broadly measured by technical and academic factors. The key technical constraints raised by student on effectiveness of forum is user-friendliness and device sensitive on the Moodle application. The notification of Moodle forum is performed by emailing to student on student email account only when there is new forum question is posted. The students expect that they are notified on personal email as soon as new post is made available on forum. They would even more appreciative if they receive SMS one their mobiles. This will ensure students are instantly alerted and prompted for quick response on the forum discussion. Another concern raised by student is that the Moodle email notification process is slow.

Another technical issue raised by students for poor response is device responsiveness. Many students convey that mobile devices are used for study and instant response such as forum discussion and social conversation. Additionally, many students lack proper laptop and desktop in their residence. Above suggestions strongly warrants a need of web-based Moodle application - an app similar to Facebook Messenger with instant alert system.

The key academic and general constraints raised by students on effectiveness of forum is its non-formative nature and previous experience of their senior fellows. Students raised issue of no mark allocation for forum and it is optional as negative contributing factor. In addition, student raised issue of using forum on only in one unit of the course (program) as contributing factor for the poor response. Therefore, students suggest to apply this approach to all of the units with some marks allocation as one of the formative assessments. Furthermore, some student raised the issue of lack of proper knowledge on the use of forum on Moodle. Therefore, student expects a short training on the use of forum on Moodle before implementation. Some students

provide opinion that another contributing factor for poor response on Moodle forum is negative feedback from the previous students. Negative feedback from previous student means they have not used earlier and may not require to use.

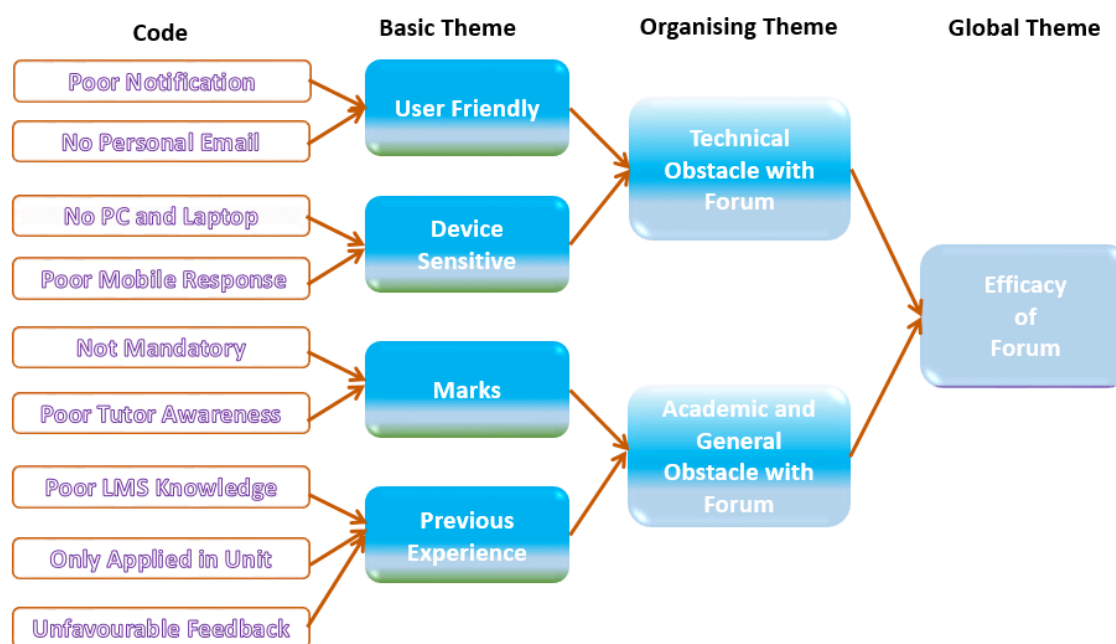


Figure 2: Thematic outcome from the analysis

Conclusion and Recommendation

We have conducted the effectiveness of forum on the private education provider with mostly international students and observed that there is good response rate from the student on the forum discussion once but the frequency of the response is very low. Then, we shifted focus on analyzing the cause of poor frequency of response on the Moodle forum discussion. To determine the cause, we conducted individual interview and group discussion. Next, we perform thematic analysis of data and capture the themes for poor effectiveness of the forum in our research context.

The thematic analysis indicates that there are two major causes for low frequency rate of student response on the forum discussion. First, the analysis reveals that the web-based Moodle application lacks of responsiveness to the variety of devices and very poor notification systems in technical side. Second, the absence of allocation marks for forum discussion and the application to only one unit on the whole course contribute to undesirable outcome on the forum participation.

The outcome from the thematic analysis recommends that the institute should develop Moodle app similar to Facebook Messenger that has instant notification and messaging system. Alternatively, device responsive web-based Moodle application with instant notification as SMS or email notification to private email instead of student email. These are two recommendations in technical aspects to enhance the forum participations. Furthermore, student also mentioned that Moodle forum should applied to all units and marks should be allocated for forum participations to improve the participations on forum.

Acknowledgments

We will like to acknowledge Dr. Nalin Sharda from MIT, Melbourne for fruitful discussion and encouragement.

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Multilingual Education in Linguistically diverse Nepal: The Role of Mother-tongue based Education for Better Learning Outcomes

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

Linguistically diverse, Nepal has 123 different mother tongues and for 55% of the people, Nepali (national language) is their second language of communication. This context poses a serious constraint on learning achievement for early grade students as the primary teaching language in all government schools is Nepali. Realizing this problem, Nepal has recently prioritized multilingual teaching at early grades in government schools. There are good intentions in adopting this approach to education, however there are limited studies on whether multilingual education (MLE) really contributes to learning outcomes of early grade children. This study is an attempt to explore the effects of providing MLE to pre-primary students. This study was conducted in Magar ethnic group in Rukum and Tharu in Kapilvastu districts of Nepal where the Khan Magar and Awadi are the mother tongue languages respectively. The data was gathered from the children, parents, teachers and school management committee members who were engaged in various MLE interventions at those districts. Semi-structured questionnaires were developed to obtain the information from the respondents. Out of wide contributions, this study found that multilingual education had positively contributed in four aspects of school education; i) students' performance, ii) teachers skills; iii) parents involvement in children's education, iv) classroom learning environment. These contributions were further seen to be long term in nature and directly related to the children's dynamic educational achievement. To a broader extent, the multilingual education also contributed to preserving the value of ethnic language and culture.

Keywords: Multilingual education, ethnic language, student performance, ethnic group, teacher skills, learning achievement

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Introduction

United Mission to Nepal is an International Non-governmental organisation which has been working in community development in Nepal for over 60 years. The focus is on helping the poorest people living in poverty (PPLP). Mother tongue based Multilingual education was incorporated into its Integrated Education projects (IEP) after requests from ethnic minority communities in its working areas of Rukum and Kapilbastu who had identified language as a barrier to the effective learning of their own children when they started school. The aim of the project was to improve access to quality education of children from ethnic minorities through the provision of mother-tongue based multi-lingual education (MTB-MLE).

Background and Context

Nepal is a linguistically very diverse country. According to the 2011 census (GoN 2011), there are 126 ethnic groups and 123 different mother tongues. 55% of the Nepalese people do not speak Nepali as their first language although this is the language of education in the government schools (Pradhan 2016). The original rationale for this “one nation, one language” policy in 1969 was that it promoted a national identity and that students would learn Nepali faster if they were immersed in it from the start of their schooling. However, increased awareness developed among ethno-linguistic groups of the need to preserve their cultural identity and agitation increased throughout the 1990’s during the civil war (Yadava 2007). Language issues became politicised at this time. The constitution of Nepal 1990 recognized the rights of people to their own language and script. The reports of the national Education Commission (NEC) and National Languages policy recommendation commission (NLPRC) also recommended mother tongue education. Subsequently, the Education Act 2007, the National framework for Education for all (EFA) and the national curriculum all now have provision for mother tongue education (Ghimire, 2011). Following the restoration of democracy in 2006 the revised Education Act of 2007 stated that primary education should be in the mother tongue for grades 1-3 in all subjects except English and Nepali. (Yadava 2007) The Department of Education has implemented MLE programmes since 2006. In 2012 the MLE framework of GoN gave guidance on MLE in schools. More recently, the 2015 Constitution of the country states in Article 31, section 5 (Government of Nepal, 2015) children in every Nepali community have a right to education in their mother tongue and that it is the state’s responsibility to provide this. Nepal is a signatory to many international policies safeguarding the rights of ethnic minorities, for example the UN declaration on the rights of Indigenous Peoples 2008 which includes the right to culture, identity and language. The most recent Government of Nepal (GoN) school sector development plan (SSDP) 2016-2023 prioritises MLE and classifies schools on the basis of the mother tongue of their students (GoN 2016).

Mother tongue based –multilingual education in Nepal

Ghimire (2012) defines mother tongue as the language of one’s ethnic group and refers to the language of instruction as being the language used for teaching. Mother tongue based Multilingual education (MTB MLE) is the use of the student’s mother tongue and two or more additional languages as the language of instruction in schools (Malone 2007). It is a method by which students start by learning in their mother

tongue language (L1). In this context, pre-primary and early primary students then learn to read and write their own language in the Devanagari script before moving to the second language (L2), in this case Nepali. They then learn the Nepali vocabulary and grammar when they can already read and write using the phonetic Devanagari script. It is based on the “first language first” principle (UNESCO, 2011) which is that children make a better start in school, and continue to make better progress, if they learn in their mother tongue when they enter school for the first time.

Nepalese children start school in pre-primary grade full time from the age of four without any pre-school transition and this is particularly challenging for those from ethnic groups who do not understand Nepali which is the language of instruction. The Nepali language is written in the phonetic Devanagari script and has a literate tradition unlike all but 8 of Nepal’s indigenous languages. Some communities like Tharu have a predominantly pictorial, rather than a written culture. Awadhi has a literate tradition and the Magar community has its own Sino-Tibetan Akkha script (Yadava, 2007). The Tharu and Magar groups are in the process of standardizing their written language by deciding, for example, which dialect words to use. (Turin 2004). Some communities, such as Magar, have a script which only a few older members of the community are able to read and therefore, when considering how to help non-Nepali speaking children to access the Nepali curriculum and textbooks, the choice of script is a crucial one. Multilingual education (MLE) textbooks and teachers for this project were provided up to grade 3. By grade 4 children are expected to be sufficiently competent in the Nepali language to be able to access mainstream education in Nepali. Because Devanagari is a phonetic script, it lends itself to Mother tongue based (MTB) MLE because children can learn to read and write in phonetic Devanagari script but using their own first language words and sounds. Once basic reading and writing have been mastered, Nepali words are introduced, and children start to read and write in both languages and by grade 4 (aged 8) they are educated in Nepali language except for weekly subject classes in their own ethnic language. Teacher training in scaffolding both languages was therefore an essential part of this project.

Key components of MTB-MLE are teacher training, provision of MTB teaching and learning materials, classroom management and set up, parental involvement, literacy assessment curriculum and transition management (Pinnock, 2011). This project focussed on the first four of these components. Local Khan Magar or Tharu/Awadi speaking Teachers were recruited after consultation with community stakeholders including parents and school leaders. They were trained to teach in the ethnic language while scaffolding Nepali literacy skills and verbal Nepali throughout the first four years of schooling with the aim that by grade 4 the students would be able to access the curriculum and textbooks in Nepali. From grade 4 their ethnic language and culture is taught as a single subject only. The teachers were also taught to produce their own MLE materials. UMN, in collaboration with GoN Curriculum development centre in Kathmandu (CDC 2007), worked with communities in the working areas to produce contextualised, locally produced MLE text books for grades one to three. These had each line of text printed in Nepali in one colour print and one or more local languages in a different colour. Devanagari script was used throughout. The contextualised illustrations and stories were by local authors in the local context and printing and binding was done locally.

The two project working areas were ethnically and geographically very diverse. Kapilbastu is situated on the southern Terai plains which border India and school students are 60% Tharu and 30% from the Awadhi ethnic group. In contrast, Rukum district is in the high foothills of the Himalayas where access to many areas is challenging and 90% of school students are from the Magar Kham ethnic group.

Research question and purpose of the study

The purpose of this study was to determine whether MTB-MLE in this context really contributed to the learning outcomes of the children, and in what ways did it affect different aspects of school education.

The research questions addressed here are 'Does the MTB-MLE in our context really contribute to increase the learning outcomes of the children?' and 'How does MTB-MLE affect different aspects of school education?'

Methodology

In this research, a mixed methodology was used. The annual examination scores of children in the major three subjects of math, science and social studies from grade one to three were evaluated using descriptive analysis (Bickel & Lehmann, 2012). This data was used to analyze the progress in learning achievements of the children in multilingual education implemented schools. Qualitative analysis (Wylie, 1999) was used to examine other aspects of school education such as student performance, teacher skills, parents' involvement in children's education and classroom learning environment. Focus Group Discussion (FGD), Key Informant Interview (KII) and observations were used to collect the information from teachers, principals, school management committee, students and parents of MLE schools of Rukum and Kapilvastu district of Nepal. The content analysis (Elo, & Kyngäs, 2008) method was adopted to analyze the data. 3 schools out of eight 8 schools in Rukum and 2 schools out of 5 schools were selected for this study using the purposive sampling method (Tongco, 2007).

Key Findings

The research findings in five different areas are discussed and presented below:

Learning achievement

Learning achievement in three subjects; math, science and social study of children from grade 1-3 of three schools of Rukum was analyzed using the average annual examination percentage scores, (verbal and written) of the three years before the introduction of MTB-MLE and for the three years afterwards (figure 1). The presented average scores clearly show that there is progress in learning achievements of the children in all three subjects. Because of the MLE interventions children have increased their learning achievements by 8.6-13.5% in three subjects and children have scored particularly highly in science subject.

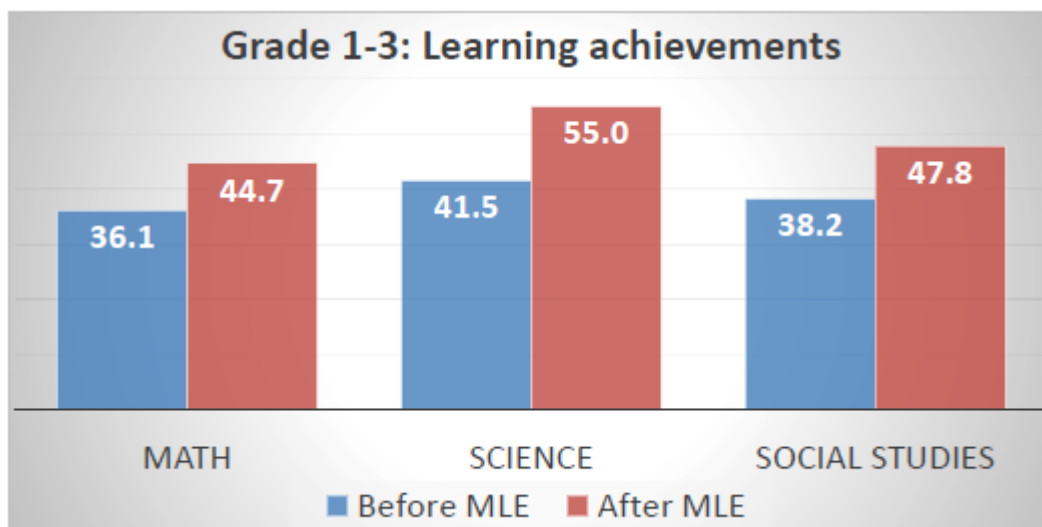


Figure 1: Effect of MLE interventions on learning achievement (percentage examination score) in Rukum District

In the same way, annual exam scores obtained in three subjects; math, science and social study of children from grade 1-3 of two schools of Kapilvastu are presented in figure 2. The learning achievement scores are the average annual exam percentage scores. The presented average scores clearly show that there is progress in learning achievements of the children in all three subjects because of MLE interventions. The children have increased their learning achievements by 4.9-9.9% in three subjects and children have scored highest in social studies.

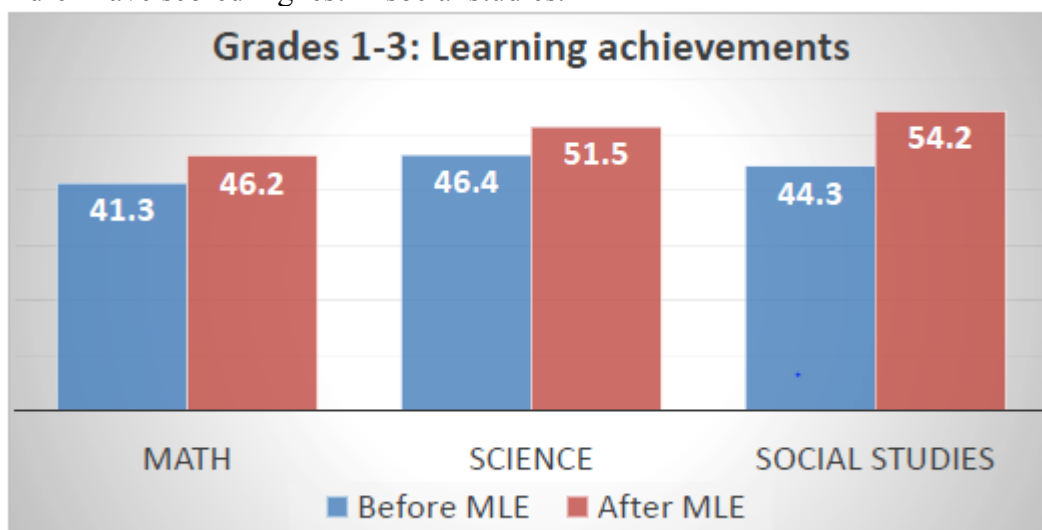


Figure 2: Effect of MLE interventions on learning achievement (percentage examination score) in Kapilbastu District

When comparing the effect of MTB-MLE interventions in Kapilbastu district with that in Rukum(Figure 3), it was found that MLE interventions had had a greater positive effect on learning achievement in Rukum (10.6) than in Kapilbastu.(6.7).

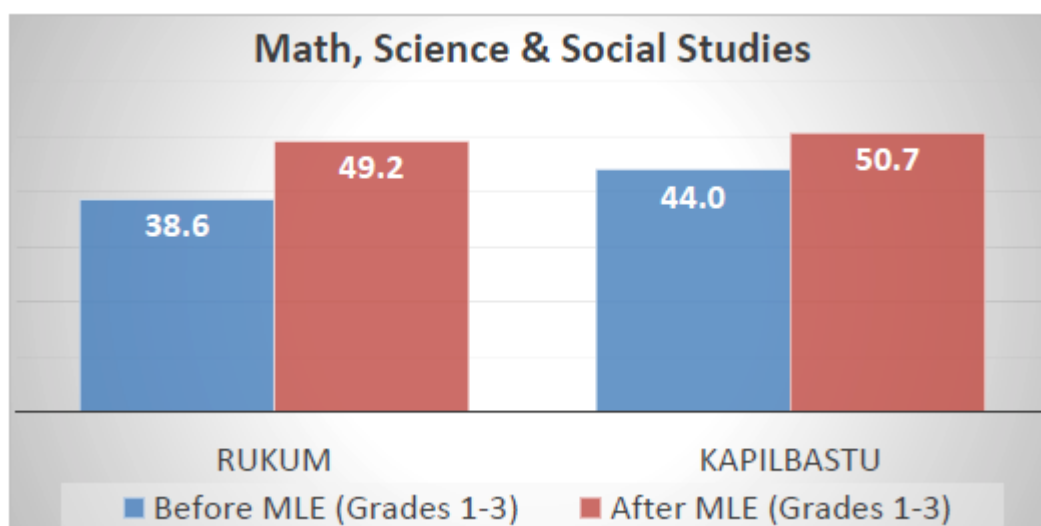


Figure 3: Comparison of the effect of MTB-MLE interventions (percentage examination score) in Rukum and Kapilvastu Districts

Students' performance

It was found that MLE interventions had positively contributed to increase students' performance and active participation in different activities. The participation of the students in learning activities such as quizzes, speaking competitions and games was increased. Their level of understanding has also increased, teachers reported that “they understood their lessons well as their textbooks have both mother tongue and Nepali texts”. A teacher said, “*Mira* could not recognize and read letters in the past, sometimes she even missed class, but she is good these days and her Nepali vocabulary has also improved. She is now in 4th position when she used to be in the last position.*” *name changed. The curiosity to learn new things has increased and comprehension ability was enhanced after the schools started the MLE. In addition, the enrollment rate of students in the MLE school areas increased from 90% to 98% and student dropout decreased from 13% to 5% in year 2017. The MLE classes also helped them to learn Nepali language.

Teachers skills

Teachers built their capacity and developed skills because of MLE interventions in the schools. It was found that because the teachers were given training on child friendly teaching learning, they were using child friendly teaching methods such as songs, games and activities instead of traditional lecture based and rote learning approaches. A teacher said, “*I was myself a teacher at a school nearby I had no experience (of child friendly teaching) before this training, we just had the children parrot the content.*” Teachers learned material development skills and produced their own big books and posters with text in different languages. Classroom management skills such as classroom set up, group work and class monitoring were learnt and practiced by the teachers. Because the subject textbooks were revised based on local contexts, local teachers were more confident with teaching the subject content and illustrating it with local examples. Additionally, through the process of using the mother tongue to scaffold the learning of Nepali, teachers have learned transferable language teaching skills.

Classroom learning environment

Because of the MLE-MTB interventions, traditional early grade classrooms with concrete floors and rows of high wooden desks were converted into child friendly classrooms with carpets, cushions and low tables and posters on the walls. In addition to an improved physical environment, the classroom learning environment also changed. Because the medium of instruction was in the student's mother tongue, they were much more confident to ask questions and interact with teachers if they had any concerns. Local materials were collected and used in teaching learning activities in conjunction with the contextualized MLE text books. Because those materials were familiar to children, this increased the children's engagement in the teaching and learning process. A corner library was also provided to each class so the children borrowed books to read at home. Therefore, the MLE programme has had a transformative effect on the classroom teaching and learning environment.

Parental involvement

Another important result of the MLE programme was increased parents' involvement. This study found that parents had been involved in identifying MLE needs at the beginning, providing inputs to contextualize the textbooks, improving classroom set up and learning environment such as providing locally made cushions. Mothers were also involved in forming mothers' groups to support children's learning at school. Because early grade teaching was taking place in the mother tongue, parents have been able to support their children's learning at home with homework, stories and listening to them read aloud.

Conclusion

MTB-MLE has positively contributed to increase students learning outcomes. The study showed an improvement in student learning achievement, teacher's skills, the teaching learning environment and parental engagement in children's education. These contributions were further seen to be long term in nature and directly related to the children's dynamic educational achievement. To a broader extent, the multilingual education also contributed to preserving the value of ethnic language and culture.

Different dialects from a mother tongue need to be considered while developing curricula and textbooks. MLE is easier to implement if the local language is more homogeneous. The active involvement of parents, teachers, community leaders and government officials in implementing MLE gives them a greater sense of ownership and makes for sustainability (e.g. financial support from the community for publication of books). Schools should give priority to local language speakers while hiring new teachers for the primary grades. Due to high teacher turnover, it is better to have at least two teachers trained in MTB-MLE per grade to avoid disruption to students.

This study was limited in scope because it was a retrospective analysis and therefore a more detailed study has been instigated recently in Rukum District which will take place over the next three years.

Acknowledgements

We would like to extend our sincere thanks to school teachers, principals, school management committee members, students, parents and partner staff including UMN cluster team members in Rukum and Kapilvastu.

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A Study of Satisfaction of Students Towards the Bachelor of Science in Medical and Public Health Secretary, College of Allied Health Sciences, Suan Sunandha Rajabhat University

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

This research was aimed to study the student satisfaction towards the Bachelor of Science (new curriculum in 2016) in Medical and Public Health Secretary, College of Allied Health Sciences, Suan Sunandha Rajabhat University Academic Year 2017. It was the descriptive research by using the questionnaire as the tool for data gathering, the population was 46 undergraduates in Academic Year 2017 which it was retrieved 45 questionnaires as 97.83 percent. The statistics for data analysis were mean, percentage and level of satisfaction which it was divided by gender and year of study. The findings revealed that it was in the high level ($X = 4.21$, $S.D. = 0.591$) which consisted of 1. curriculum administration, 2. student selection process, 3. lecturers, 4. learning environment, 5. learning management, 6. measurement and assessment and 7. learning achievement, to adjust, improve, promote and develop the learning management system as the quality assurance of university by defining the indicator standard which consistent with the university development, and link with the internal quality assurance of the Office of the Higher Education Commission (OHEC) and the external quality assurance of the Office for National Education Standards and Quality Assessment (ONESQA).

Keywords: Study of Satisfaction, Student, Medical and Public Health Secretary, College of Allied Health Sciences, Suan Sunandha Rajabhat University

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Introduction

Bachelor of Science in Medical and Public Health Secretary is a new curriculum which focuses on providing the quality graduate with knowledge, experience, skill, management, communication, culture, wisdom, integration of public health and current medicine to apply for the general health care including good moral, ethics and attitude for the profession.

The 20-Year National Strategic Plan (2016 – 2036) in Public Health is aimed to promote the healthy citizens, staff, and sustainable health system for the stability of nation which affected to the development of curriculum to respond the nation's need by developing the health system, promoting the health services and quality products for the global standard, developing the system of medical and public health administration. They have been developing the system of health promotion and disease prevention, improving the proficiency to enhance the standard quality of medical and public health services, improving the organization for being outstanding and the efficient administration. Due to keeping the leading position, it should have the skilled executive for medical services by providing the skilled person in medical and public health administration to support the National Strategic Plan and the 12th National Economic and Social Development Plan (2017-2021) which would develop in health, provide the environment and innovation for living, and improve the staff in public and private section to enhance the proficiency of adaptability to support the change and growth for being the leader of efficient medical and public health administration.

Due to there are many integration of subjects in medicine, public health and various sciences, the secretary is needed to support the data and communication systematically and accurately including the appropriate health care. Moreover, the medical and public health secretary is a person who links the system of current medicine, public health and Thai traditional medicine to cooperate and apply the knowledge for people, and then the proficiency development is needed. In the 21st century students have to learn new knowledge all the time including the skill of analysis and creativeness for new innovation (Wijarn Panich, 2013).

The integrated medical system in public health services is appropriate and consistent with the context of Thai society to apply Thai wisdom and natural methods for health care. It could decrease the deficit balance of trade for the import of medicine and supplies, and disperse medical and public health to people in the wide borders which the government has focused with Thai traditional medicine and defined, "Medicine First, Doctor Later"

Suan Sunandha Rajabhat University has realized the significance as mentioned above, and then developed the Bachelor of Science in Medical and Public Health Secretary to support the 20-Year National Strategic Plan (2016 – 2036) and the 12th National Economic and Social Development Plan (2017-2021) for self-dependence and holistic health care to be consistent with Thai society. The learning management is needed to provide the cooperation of executive and students in creating the curriculum and learning patterns for their life-long learning which the learning process is learning by experience (Suwit Mesinsee, 2013), students are significant for the quality assurance process as it could provide the efficient curriculum that it has to survey the opinion of

students towards the curriculum to improve and develop on the quality process and link with the indicator standard of the internal quality assurance of The Office of the Higher Education Commission (OHEC) and of the external quality assurance of The Office for National Education Standards and Quality Assessment (ONESQA).

Objective of the Study

1. To assess the student satisfaction towards the Bachelor of Science in Medical and Public Health Secretary.
2. To apply the information for the curriculum improvement and development.

Literature Review

Pongsak Jaroengarmsamer (2018), said, the highest medical standard is the topmost issue in this century. The higher number of lawsuit in medical field is a big problem in both practitioners and the hospitals. Private hospitals have more impact on this issue compare to the public hospital. To reduce this problem, the hospitals need to improve their quality to reach the international standard of care. These processes need the staff with the knowledge of administration, medical and public health system and medical terminology. In Thailand, nurses are the first team of the most hospital. They are expected to do these processes because of their knowledge about the hospital and medical terminology. However, the administration processes are lacking of the skills.

Isaree Chowiwattana (2013), A Study of Student Satisfaction Towards the Bachelor of Accounting, University of the Thai Chamber of Commerce (UTCC) in 5 aspects consisted of curriculum, learning activity, lecturer, learning assessment and learning support included the comparison of satisfaction of students towards the Bachelor of Accounting, UTCC which divided by gender, place of birth, educational achievement, program of study, workplace and current position. The findings revealed that the graduates were satisfied with curriculum, learning activity, lecturer and learning assessment in the high level, and were satisfied with learning support in the moderate level. The comparison of satisfaction of students towards the Bachelor of Accounting, UTCC revealed that the difference of gender, educational achievement and current position would not affect to the satisfaction of students towards the Bachelor of Accounting, UTCC but the difference of place of birth, program of study and workplace would affect to the student satisfaction towards the Bachelor of Accounting, UTCC.

Anchalee Primpray and et al. (2005), A Study of Satisfaction of Students Towards the Teaching Quality and Learning Support of Faculty of Industrial Technology, Nakhon Si Thammarat Rajabhat University in 4 aspects revealed that; 1. Person, the students were satisfied with person and teaching quality in the high level which consistent with educational background of the lecturers that affected to their teaching techniques, and they had described the objectives and assessment criteria of their plan to the students, 2. Place, the students were satisfied with place such as buildings and number of chairs in the moderate level, 3. Materials, the students were satisfied with materials such as modern media in the moderate level, and 4. Budget, the students were satisfied with budget in the moderate level.

Wiphawan Paimueng (2002), A Study of Assessment of Continuing Education Curriculum of Business Administration Program, Faculty of Education, Chiang Mai University which was aimed to assess and study the suggestion for improving the continuing education curriculum of Business Administration Program, Faculty of Education, CMU. The findings revealed that the context of curriculum and objectives were clear, practical, consistent with Thai society and the need of students, it was in the high level. The appropriateness and sufficiency of covered structure and content of subject, curriculum support and building, it was in the high level. The quality and convenience of learning materials and media, they were in the moderate level. The quality and sufficiency of science source for learning support, they were in the high level. The qualification of students, educational achievement of lecturer in A-Level, academic title in D-Level, academic paper in B-Level and appropriate learning management, they were in the high level. The appropriateness of measurement, assessment and covered public relations, it was in the highest level. The educational achievement was 3.00 or above in 2.5 years with the performance quality in the high level, up-to-date knowledge and adaptable for the current situation.

Mukda Tosaeng and et al. (2017) said, the suggestion from the result of the Research: gives some suggestions that it should be considered with the result of this study to develop guidelines for opening traditional Chinese medicine course in Thailand. There should be a learning activities that focused on practical training research along with teaching and learning in the class. It should set the basic traditional Chinese medicine in according to the labor market and should be willing to reach the local area for collecting the data.

Population

The population of this research was 46 undergraduates from the 1st and 2nd year students.

Research Tool

The questionnaire was used as the research tool to assess the satisfaction of students towards the curriculum as following;

Tool Design

- 1) Studying the data and relevant theory.
- 2) Designing the questions to be consistent with the objectives.
- 3) Bringing the questionnaire for the completion proof by 3 experts.
- 4) Checking the reliability by 30 persons excluded the sample group to calculate the Cronbach's Alpha Coefficient.
- 5) Arranging the questionnaires for data gathering.

Tool Characteristic

The questionnaire was used in this research which divided into 3 parts as following;

- Part 1 – General information consisted of gender and year of study
- Part 2 – Student satisfaction towards the curriculum quality
- Part 3 – Suggestion towards the curriculum development

Data Gathering

The data was gathered from the 1st and 2nd year students of Bachelor of Sciences in Medical and Public Health Secretary, College of Allied Health Sciences, Suan Sunandha Rajabhat University

Data Analysis and Interpretation

Analyzing the data after gathering and checking the questionnaires as following;

Part 1 – General information by analyzing the frequency and percentage, and presenting graphs and description.

Part 2 – Student satisfaction towards the curriculum quality by analyzing the mean and standard deviation.

Part 3 – Suggestion towards the curriculum development by analyzing the open-ended questions.

Statistic for Data Analysis

1. Frequency and Percentage
2. Mean (\bar{x})
3. Standard Deviation (S.D.)

Result

The data analysis of “Study of Satisfaction of Students Towards the Bachelor of Science in Medical and Public Health Secretary, College of Allied Health Sciences, Suan Sunandha Rajabhat University” was divided into 3 parts as following;

Part 1 – General information

1. Percentage of general information divided by gender

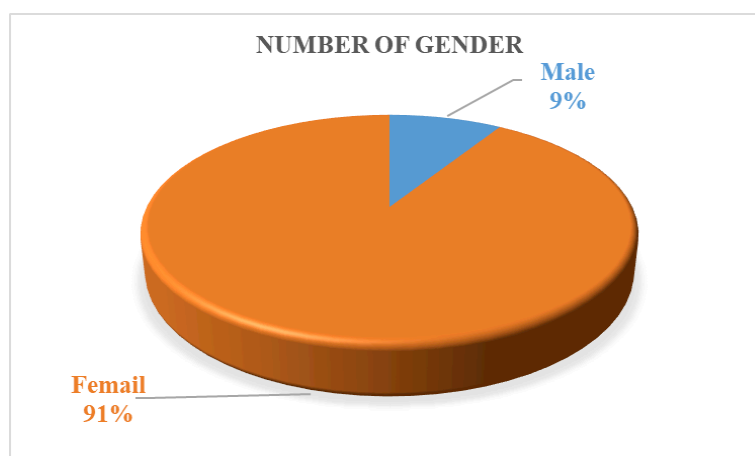


Figure 1: Number of gender

From Figure 1, it revealed that most of them were female (41, 91.11%) and male (4, 8.89%).

2. Percentage of general information divided by year of study

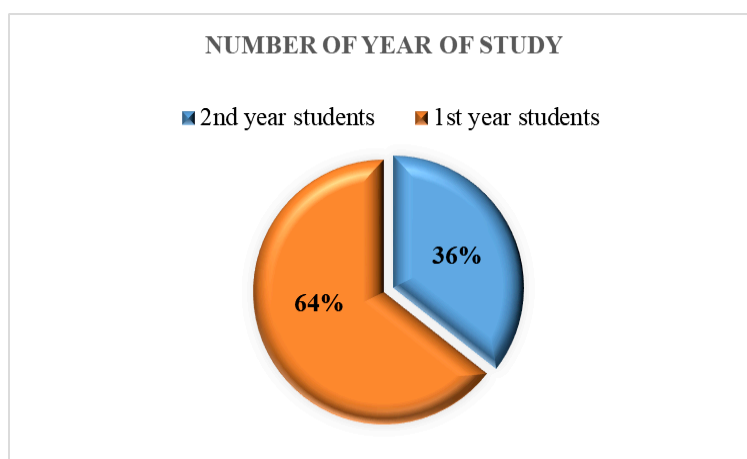


Figure 2: Number of year of study

From Figure 2, it revealed that most of them were the 2nd year students (16, 35.56%) and 1st year students (29, 64.44%).

Part 2 – Student satisfaction towards the curriculum quality

The Absolute Criteria was used in this research to interpret the mean of data as following;

- 4.50 – 5.00 represented to highest level
- 3.50 – 4.49 represented to high level
- 2.50 – 3.49 represented to moderate level
- 1.50 – 2.49 represented to low level
- 1.00 – 1.49 represented to lowest level

Table 1: Level of satisfaction of students towards the curriculum administration

Question	Mean (\bar{x})	Standard Deviation (S.D.)
(1)The learning management is consistent with the philosophy and objectives of the curriculum.	3.89	0.706
(2)There is the learning plan throughout the curriculum.	4.07	0.680
(3)There is the learning calendar and program of each semester.	4.53	0.686
(4)The curriculum is up-to-date and consistent with the need of labor market.	4.33	0.596
(5)The subject is appropriate and consistent with the need of students.	4.13	0.618
Total	4.19	0.657

From Table 1. indicated that the satisfaction of students towards the curriculum administration was in the high level ($\bar{x} = 4.19$, S.D. = 0.657), when it has analyzed in each item revealed that;

1. There is the learning calendar and program of each semester, it was in the highest level ($\bar{x} = 4.53$, S.D. = 0.686).

2. The curriculum is up-to-date and consistent with the need of labor market, it was in the high level ($\bar{x} = 4.33$, S.D. = 0.596).
3. The subject is appropriate and consistent with the need of students, it was in the high level ($\bar{x} = 4.13$, S.D. = 0.618).
4. There is the learning plan throughout the curriculum, it was in the high level ($\bar{x} = 4.07$, S.D. = 0.680).
5. The learning management is consistent with the philosophy and objectives of the curriculum, it was in the high level ($\bar{x} = 3.89$, S.D. = 0.706).

Table 2. Level of satisfaction of students towards the student selection process

Question	Mean (\bar{x})	Standard Deviation (S.D.)
(1)The appropriateness of defining student's qualification.	4.16	0.631
(2)The appropriateness of student selection.	4.22	0.629
(3)The appropriateness of student selection process.	4.18	0.607
Total	4.19	0.622

From Table 2. indicated that the satisfaction of students towards the student selection process was in the high level ($\bar{x} = 4.19$, S.D. = 0.622), when it has analyzed in each item revealed that;

1. The appropriateness of student selection, it was in the high level ($\bar{x} = 4.22$, S.D. = 0.629).
2. The appropriateness of student selection process, it was in the high level ($\bar{x} = 4.18$, S.D. = 0.607).
3. The appropriateness of defining student's qualification, it was in the high level ($\bar{x} = 4.16$, S.D. = 0.631).

Table 3. Level of satisfaction of students towards the lecturers

Question	Mean (\bar{x})	Standard Deviation (S.D.)
(1)The educational achievement and experience of lecturer are consistent with the subjects.	4.16	0.556
(2)The content is consistent with the objectives and focus on the learner by various teaching methods.	4.18	0.569
(3)The regularity of learning promotion and development for the students.	4.13	0.452
(4)The appropriateness of academic consulting and student development.	4.13	0.499
(5)The moral and consciousness of the lecturer.	4.22	0.466
Total	4.16	0.508

From Table 3. indicated that the satisfaction of students towards the lecturer was in the high level ($\bar{x} = 4.16$, S.D. = 0.508), when it has analyzed in each item revealed that;

1. The moral and consciousness of the lecturer, it was in the highest level ($\bar{x} = 4.22$, S.D. = 0.466).

2. The content is consistent with the objectives and focus on the learner by various teaching methods, it was in the high level ($\bar{x} = 4.18$, S.D. = 0.569).
3. The educational achievement and experience of lecturer are consistent with the subjects, it was in the high level ($\bar{x} = 4.16$, S.D. = 0.556).
4. The regularity of learning promotion and development for the students, it was in the high level ($\bar{x} = 4.13$, S.D. = 0.452).
5. The appropriateness of academic consulting and student development, it was in the high level ($\bar{x} = 4.13$, S.D. = 0.499).

Table 4. Level of satisfaction of students towards the learning environment

Question	Mean (\bar{x})	Standard Deviation (S.D.)
(1)The classroom materials are appropriate for learning and sufficient for students.	4.13	0.581
(2)The operating room materials are appropriate for learning and sufficient for students.	4.02	0.683
(3)The information system is appropriate for learning and sufficient for students.	4.24	0.523
(4)The library is appropriate for learning and sufficient for students.	4.07	0.646
(5)The facility is appropriate for learning and sufficient for students.	4.00	0.596
Total	4.09	0.606

From Table 4. indicated that the satisfaction of students towards the learning environment was in the high level ($\bar{x} = 4.09$, S.D. = 0.606), when it has analyzed in each item revealed that;

1. The information system is appropriate for learning and sufficient for students, it was in the highest level ($\bar{x} = 4.24$, S.D. = 0.523).
2. The classroom materials are appropriate for learning and sufficient for students, it was in the high level ($\bar{x} = 4.13$, S.D. = 0.581).
3. The library is appropriate for learning and sufficient for students, it was in the high level ($\bar{x} = 4.07$, S.D. = 0.646).
4. The operating room materials are appropriate for learning and sufficient for students, it was in the high level ($\bar{x} = 4.02$, S.D. = 0.683).
5. The facility is appropriate for learning and sufficient for students, it was in the high level ($\bar{x} = 4.00$, S.D. = 0.596).

Table 5. Level of satisfaction of students towards the learning management

Question	Mean (\bar{x})	Standard Deviation (S.D.)
(1)The learning management is consistent with the characteristics and objectives of the subject.	4.20	0.581
(2)The media is appropriate for learning.	4.13	0.653
(3)The teaching method has promoted the application of profession sciences which related to the learning development.	4.24	0.523
(4)The information technology is appropriate for learning.	4.40	0.646
(5)The learning management has promoted the international language skill.	4.42	0.577
(6)There is the special class for students.	4.18	0.607
Total	4.26	0.598

From Table 5. indicated that the satisfaction of students towards the learning management was in the high level ($\bar{x} = 4.26$, S.D. = 0.598), when it has analyzed in each item revealed that;

1. The learning management has promoted the international language skill, it was in the highest level ($\bar{x} = 4.42$, S.D. = 0.577).
2. The information technology is appropriate for learning, it was in the high level ($\bar{x} = 4.40$, S.D. = 0.646).
3. The teaching method has promoted the application of profession sciences which related to the learning development, it was in the high level ($\bar{x} = 4.24$, S.D. = 0.523).
4. The learning management is consistent with the characteristics and objectives of the subject, it was in the high level ($\bar{x} = 4.20$, S.D. = 0.581).
5. There is the special class for students, it was in the high level ($\bar{x} = 4.18$, S.D. = 0.607).
6. The media is appropriate for learning, it was in the high level ($\bar{x} = 4.13$, S.D. = 0.653).

Table 6. Level of satisfaction of students towards the measurement and assessment

Question	Mean (\bar{x})	Standard Deviation (S.D.)
(1)The measurement and assessment are consistent with the characteristics and objectives of the subject.	4.27	0.573
(2)The measurement and assessment are on the regulation.	4.20	0.499
(3)The measurement and assessment are efficient and fair.	4.20	0.581
Total	4.22	0.551

From Table 6. indicated that the satisfaction of students towards the measurement and assessment was in the high level ($\bar{x} = 4.22$, S.D. = 0.551), when it has analyzed in each item revealed that;

1. The measurement and assessment are consistent with the characteristics and objectives of the subject, it was in the high level ($\bar{x} = 4.27$, S.D. = 0.573).

2. The measurement and assessment are on the regulation, it was in the high level ($\bar{x} = 4.20$, S.D. = 0.499).
3. The measurement and assessment are efficient and fair, it was in the high level ($\bar{x} = 4.20$, S.D. = 0.581).

Table 7. Level of satisfaction of students towards the learning achievement

Question	Mean (\bar{x})	Standard Deviation (S.D.)
(1)The moral and ethics.	4.24	0.564
(2)The knowledge.	4.27	0.573
(3)The skills.	4.31	0.551
(4)The relationship of person and responsibility.	4.38	0.607
(5)The skill of numeric analysis, communication and information technology.	4.47	0.581
Total	4.33	0.575

From Table 7. indicated that the student satisfaction towards the learning achievement was in the high level ($\bar{x} = 4.33$, S.D. = 0.575), when it has analyzed in each item revealed that;

1. The skill of numeric analysis, communication and information technology, it was in the high level ($\bar{x} = 4.47$, S.D. = 0.581).
2. The relationship of person and responsibility, it was in the high level ($\bar{x} = 4.38$, S.D. = 0.607).
3. The skills, it was in the high level ($\bar{x} = 4.31$, S.D. = 0.551).
4. The knowledge, it was in the high level ($\bar{x} = 4.27$, S.D. = 0.573).
5. The moral and ethics, it was in the high level ($\bar{x} = 4.24$, S.D. = 0.564).

Part 3 – Suggestion towards the curriculum development

1. Curriculum and learning management
 - The curriculum is appropriate for the timetable.
 - It should have the priority of subjects for each year of study, especially the subjects of each program.
 - The number of subjects could affect to the educational achievement.
2. Lecturer / consultant
 - The attention of lecturer on teaching and consulting.
 - The lecturer is friendly.
 - The lecturer has consulted on learning.

Discussion

From the study of Student Satisfaction Towards the Bachelor of Science in Medical and Public Health Secretary, College of Allied Health Sciences, Suan Sunandha Rajabhat University revealed that when it has analyzed in each item, it should adjust some items due to there were both of low and high score as the Standard Deviation (S.D.) has shown, and then the researcher conducted the improvement and development for the completion of curriculum and the efficiency of quality process.

Conclusion

The study of Student Satisfaction Towards the Bachelor of Science in Medical and Public Health Secretary, College of Allied Health Sciences, Suan Sunandha Rajabhat University Academic Year 2017, the descriptive research by using the questionnaire as the tool for data gathering, and the population was 46 undergraduates from the 1st and 2nd year students in the Academic Year 2017 which was retrieved 45 questionnaires as 97.83 percent, it revealed that most of them were female (41, 91.11%) and male (4, 8.89%). The statistics for data analysis were mean, percentage and level of satisfaction, it revealed that it was in the high level ($\bar{x} = 4.21$, S.D. = 0.591) which consisted of;

1. Curriculum administration, it revealed that it was in the high level ($\bar{x} = 4.19$).
2. Student selection process, it revealed that it was in the high level ($\bar{x} = 4.19$).
3. Lecturers, it revealed that it was in the high level ($\bar{x} = 4.16$).
4. Learning environment, it revealed that it was in the high level ($\bar{x} = 4.16$).
5. Learning management, it revealed that it was in the high level ($\bar{x} = 4.26$).
6. Measurement and assessment, it revealed that it was in the high level ($\bar{x} = 4.22$).
7. Learning achievement, it revealed that it was in the high level ($\bar{x} = 4.33$).

To adjust, improve, promote and develop the learning management system as the quality assurance of university by defining the indicator standard which is consistent with the university development, and link with the internal quality assurance of The Office of the Higher Education Commission (OHEC) and the external quality assurance of The Office for National Education Standards and Quality Assessment (ONESQA).

Acknowledgement

The researcher would like to thank the students who participated in this data gathering.

This research was supported by Suan Sunandha Rajabhat University, the researcher would like to thank College of Allied Health Sciences, Suan Sunandha Rajabhat University, Samut Songkhram Education Center for supporting this achievement.

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Top Future Skills in Cross-Disciplinary Design Education

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

Cross-disciplinary education is increasing in popularity. According to the World Economic Forum report, “The Future of Jobs”, the top skills in the future will be complex problem solving, critical thinking, and creativity (Forum, 2016). Universities expect graduates to be leaders and innovators in the workplace and society (Gross & Do, 2009). Are Design Schools currently cultivating skills such as those mentioned above? Attempting to answer requires an examination of the design education at present. We analysed the core values and design pedagogy of the world’s top ten design schools (“QS World University Rankings by Subject 2018,”), as presented through the respective websites of these schools. Our exploration provides an overview of the varying approaches to design education. The primary purpose of this study is to determine how aligned are the leading design schools with the projected top future skills. This work contributes to an understanding of the cross-disciplinary design pedagogy in the world’s leading design schools, as communicated through their publicly accessible, online prospectuses.

Keywords: Design education, design schools, skills

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Introduction

It is argued that we face a systemic failure in leadership today and as such, a societal change is crucial. (Dean,2015). It is also suggested that a new generation of passionate designers is emerging. This generation desires to match its talent with a world desperate for solutions (Lawrence, 2014). There are many significant challenges in the world. We do have the tools to help solve them. (Dean, 2015). Design schools and universities around the world are now shaping the minds that will address those challenges. Universities expect graduates to be leaders and innovators in the workplace and society (Gross & Do, 2009).

Simultaneously, increasing demand for a capable workforce of creative problem-solvers is underway. This workforce exhibits the ability to produce bolder, meaningfully grounded, effective ideas (Lawrence, 2014). The quickly emerging, a new generation of creative leaders is eager, energised, and enthusiastic to grow personally. They are looking forward to creating change. They often struggle to integrate into organisations. Ironically, many corporate executives and employees of an older generation, struggle as well to utilise this young talent and to harness its energy (Dean, 2015). There are also challenges in design education. Although technical skills should remain at the core of design education, soft skills such as empathy, collaboration, and leadership are the most important (Hardin, Westcott, & Berno, 2014).

Context

Nixon (2014) points out that formal degree curricula generally lag industry by ten years. Another remark from the same author is a mismatch between business managers and designers. Business managers do not learn design and designers do not receive business training which creates a knowledge and communication gap between the two fields. Such an issue indicates that changes in education are needed.

The World Economic Forum is a Geneva-based, international organisation with the mission to “*engage foremost political, business and other leaders to shape global, regional and industry agendas*”. The Forum published in 2016 the report “the Future of Jobs” in which it claims that the top (three) future skills will be complex problem solving, critical thinking, and creativity (Forum, 2016). These skills are defined below.

2.1 Research Questions

We raise two questions in this study. R1. Are the world’s leading design schools promoting the top future skills to students? R2. Which skill(s) is promoted the most? R3. Which future skill(s) is the least promoted?

2.2 Working Definitions

Interdisciplinarity “includes an interaction, sharing of insights, overlapping or bridging two (or more) disciplines from a practical-outcome, problem-oriented or theoretical approach. It applies or borrows tools between various subjects. Interdisciplinarity may lead to the emerging of new fields of knowledge and a new discipline, as it unifies and integrates knowledge (Franks et al., 2007).

Multidisciplinary is positioning of each discipline (their associated knowledge, frames-of-reference, approaches, methods, accepted practices) alongside one another; the fruits and their position are distinct and separate. (Self, Evans, Jun, & Southee, 2018)

Complex problem solving is referring to resolving issues that are complex by their nature. Dörner & Joachim (2017) define the complex problem as an ill-defined problem that has no apparent problem definition. The goal state is not clearly defined, and the means towards the goal state are not clear either. The authors mention as an example the Israel-Palestine conflict as a complex problem. The goal state for solving this political conflict is not clearly defined, and even if the conflict parties come to an agreement and accept a two-state solution, such a goal would leave many issues unresolved.

Problem-solving (without any reference to it being complex) has been defined in many ways, as there are multiple angles one can tackle problems. Issues arise when some use the term “design” and “problem-solving” interchangeably (McCade, 1990). The working definition that we adopted for this study is from Britannica Encyclopaedia (“Problem Solving,” 2018) which defines the concept as “process involved in finding a solution to a problem”.

In academic, university environments, students are expected to read critically and to think and use logic while solving complex problems (Rotherham & Willingham, 2009). Assuming that complexity is one more factor to consider about upon the problem-solving procedure and taking in consideration that the skills that we examine in this paper are inseparable, we investigated two terms “Complex problem-solving” and “problem-solving”. We did not find much evidence of “complex problem-solving” being taught. However, upon examining the wording “problem-solving”, we have seen plenty of material.

Creativity is a concept that can be understood when it is clearly defined. In this paper, we operationalise the definition of Creativity by Runco and Jaeger, in which originality and effectiveness (or usefulness) are required (2012).

Content Analysis Methodology

In this study, content analysis is the primary methodology. Content analysis is a flexible, systematic and rigorous approach to analyse documents. It is a research technique that helps us to make replicable and valid inferences from texts (Krippendorff, 2013). There are six components in content analysis. The first four can be summed up as *data making*. These are *unitising*, *sampling*, *recording*, and *reducing data*. The fifth component is *abductively inferring the data*, and the last one is *narrating*.

Unitising is systematically distinguishing segments of text that are of interest for our analysis. In this study, we only looked at the publicly accessible, textual representation of the selected institutions. We were looking for the skills developed and taught by these institutions, more specifically on creativity, problem-solving, and critical thinking skills. All the texts come from on the official websites of the institutions, mostly through their “About” page or a similar introductory page. In

some cases that we did not find information about the skills developed and taught, we collected Strategic plans and downloadable prospectuses in PDF format, if such documents were available. *Sampling*. We only look at the top 10 institutions on the QS World University Rankings 2018, at the “Arts and Design Rankings”. Perhaps this is one of the most prominent university rankings that also publishes what methodology was used to determine the ranks and is specifically looking at art and design schools.

Recording

To preserve the text in its original form and prevent any possibility that it may change throughout this study the text from each university was saved separately.

Reducing

To avoid any duplicates and to narrow down the material we had in hand, we focused on the text that gives a good understanding of the skills developed and taught by these institutions. We eliminated any text that focuses on any individual from a faculty or to any individual program or degree or facilities.

Abductively inferring the data

In this stage, we examine contextual phenomena. The working definitions are used as *analytical constructs* (also called rules of inference) to help us move from the text to answer the research questions. There are two logically independent domains; these are the text and the context. When inferring the data, we are concluding one independent domain (the text) to the other (the context) (White & Marsh, 2006).

World’s Top Design Schools

In this study, the world’s top design schools are determined by the QS World University Education Rankings, by “Arts & Design” subject ("QS World University Rankings by Subject 2018," 2018). The table below indicates the schools by ranking, as well as their location, degrees offered and the web address of each school.

Table 1. World’s Top Art & Design Schools

Rank	Name of Institute	Department	Location	Degrees Offered by the Institution	URL
1	Royal College of Art (RCA)	School of Design	London, UK	GR, PhD	https://www.rca.ac.uk/schools/school-of-design
2	The New School	Parsons School of Design	New York City, USA	UN, GR	https://www.newschool.edu/parsons
3	Rhode Island School of Design (RISD)	-	Rhode Island, USA	UN, GR	https://www.risd.edu
4	Massachusetts Institute of Technology (MIT)	Design Lab	Massachusetts, USA	UN, GR, PhD	https://design.mit.edu
5	Politecnico di Milano	School of Design	Milan, Italy	UN, GR, PhD	http://www.design.polimi.it/en
6	University of the Arts	-	London, UK	UN, GR,	https://www.arts.ac.uk

	London (UAL)			PhD	
7	Pratt Institute	School of Design	New York City, USA	UN, GR	https://www.pratt.edu/academics/school-of-design
8	School of the Art Institute of Chicago (SAIC)	-	Chicago, USA	UN, GR	http://www.saic.edu
9	Aalto University	Department of Design	Helsinki, Finland	UN, GR, PhD	http://design.aalto.fi/en
10	Stanford University	d.School	Stanford, USA	UN, GR	https://dschool.stanford.edu

Six schools are in the USA; two are in the United Kingdom, one in Italy and one in Finland. All schools speak predominantly English except two (in Italy and Finland). About half of them offer research degrees in PhD level, and all of them are in the Northern Hemisphere, in just two continents, Europe and America. Only three carry the “Arts” in their title, whereas eight carry the “Design” in the institution or departmental name.

Keyword Research Pilot-Study

Google was used to determine the frequency of certain keywords on the websites of each school. Each school was separately examined to identify how many times the keywords “Creativity”, “Complex Problem Solving” and “Critical Thinking” occur. These terms correspond to the skills that we are particularly interested in this study. Additional terms with similar meaning were also examined such as “Innovation”, “Design Thinking” and “Problem Solving”. All searches were performed in quotation marks to eliminate disconnected words. Searching in quotation marks returns results with the exact word combination. For instance, in the case of design thinking, if a page had the word design and the word thinking but not as the word group “design thinking” this page was not included in the search results, as we explicitly instructed Google to return only connected, combined word.

Table 2. Google hits of selected terms, as of September 10, 2018

Rank	School	Domain Searched	Creativity	Innovation	Design Thinking	Complex Problem Solving	Problem Solving	Critical Thinking	SUM
1	School of Design - Royal College of Art (RCA)	https://www.rca.ac.uk/schools/school-of-design	428	415	303	0	4	1	1151
2	Parsons School of Design -The New School	https://www.newschool.edu/parsons	155	272	75	0	58	35	595
3	Rhode Island School of Design (RISD)	https://www.risd.edu	155	223	116	0	86	195	775
4	Design Lab - Massachusetts Institute of Technology (MIT)	https://design.mit.edu	1	89	7	1	0	3	101
5	School of Design - Politecnico di Milano	http://www.design.polimi.it *	39	196	63	5	24	3	330
6	University of the Arts London (UAL)	https://www.arts.ac.uk	3960	4120	143	2	292	175	8692
7	School of Design - Pratt Institute	https://www.pratt.edu/academics/school-of-design	19	6	2	0	5	3	35
8	School of the Art Institute of Chicago (SAIC)	http://www.saic.edu	408	408	51	0	116	116	1099
9	Department of Design -Aalto University	http://design.aalto.fi *	50	179	94	0	5	-	328
10	d.School - Stanford University	https://dschool.stanford.edu	44	300	226	0	17	2	589
			5259	6208	1080	8	607	533	SUM
			526	621	108	1	61	59	Average

*Politecnico di Milano and Aalto University are the only two institutions in which the default language on their websites is other than English.

This pilot study is not highly conclusive (for various reasons) and cannot be the primary source for substantial findings. Nonetheless, it overall indicates how frequently the websites of those institutions communicate certain concepts. Perhaps these indicators may show the focus of those institutions or maybe give hints of the overall relative importance of these terms. The table can be viewed by row and by column.

The column indicates the number of skills mentions by the school that corresponds to each column. For instance, UAL has the highest frequency of “Problem Solving” mentions. The row indicates which skill is the most popular on the website of a given school. For instance, MIT appears to be talking mostly about innovation. Numerically speaking, the web pages of MIT that are indexed by Google mention Innovation 89 times more than what they do of Creativity. Innovation is the most popular term in most cases.

UAL, an art school from London, has the most “Innovation” mentions. RCA which is another art school from London comes in second. The same schools share the same ranking in “Creativity”. Perhaps it is coincidental that UK schools top these mentions in our list. It is also a possibility that the UK has a developed a digital culture where schools ought to generate content and provide news, blogs and other pieces of content, which subsequently is indexed by Google and provide the results shown above.

Another observation is that “Complex Problem Solving” is almost not mentioned at all. Removing the “Complex” and looking upon “Problem Solving” without the complexity factor, we can see that there are significant mentions but not as many Creativity and Innovation which are the most popular terms. A thought-provoking remark is that UAL and SAIC (both are art schools) have the most mentions of problem-solving, which could mean that design schools do not address those skills as much as art schools (this is only a hypothesis, not a finding). Besides Parson and RISD other schools do not have significant remarks on problem-solving which indicate that it is not a popular term.

On the term “Critical Thinking” the art schools of UAL and SAIC have notable mentions. RISD carries the most mentions. Besides these three schools, there are no significant mentions elsewhere. Similar to “Problem Solving”, “Critical Thinking” appears to be not very popular.

A significant restraint in this pilot study is that Google partially indexes information and occasionally excludes information. For example, Pratt Institute would appear as a poor performer with only three mentions of “Critical Thinking”. Upon looking at the “Undergraduate Bulletin 2018-2019” document that is available from the site in PDF format, we can see that critical thinking was mentioned 14 times in that document.

Therefore this pilot study does not provide a very detailed, in-depth understanding of the situation. We use it to examine whether these concepts are mentioned in the first place and obtain a basic idea of which skills appear more often in the texts from the institutions. No conclusive finding can be drawn. Perhaps a substantial finding from this pilot study is that as University of the Arts London has the most search engine results, it is the most content-rich and web-optimised school thus the depth of the site makes it more likely to have organic traffic, compared with the other websites. This finding is not highly relevant to this study though.

Profile of the World’s top Art & Design schools

This section provides a brief presentation of each school. Also, there is a brief description of the Creativity, Problem-solving and critical thinking skills by each school as well.

- 1 Royal College of Art claims it is the world’s oldest Art and Design University in continuous operation. It offers only post-graduate programs, and it encourages interdisciplinarity. It aims to advance art and design education. One of the goals of the institution is to create new knowledge in art and design through research and scholarship. (Royal College of Art Strategic Plan, 2016–21, 2016). Creativity is at the core of the RCA research. There is an emphasis on innovation as well.

Problem-solving and critical thinking are mentioned numerous times in the news section of the website. However, they do not appear to be prominent concepts in the textual representation of the school.

- 2 The New School Parsons Parsons acknowledges the interdisciplinary nature of problem-solving in contemporary society. They offer practice-based, collaborative

learning through a range of university disciplines. The school is leveraging to a diverse faculty as well as to the New York City which is home to a robust ecosystem with creative practitioners and industries. They do challenge conventional thinking.

Parsons integrative curriculum is helping students to elevate their creativity skills. Critical thinking and problem-solving are core values embedded in the vision of the school. The school strives to produce critically engaged citizens, dedicated to solving problems for the public good.

- 3 Rhode Island School of Design (RISD) RISD Pushing the individual limits of each student while applying a critique culture is at the core of the RISD philosophy. They promote entrepreneurship and support critical thinking. The institution advocates adding art and design to the STEM (Science, Technology, Engineering, Maths), to foster innovation. Flexible thinking, risk-taking, to solve pressing challenges from urban revitalisation to global warming.

Creativity, Problem Solving and Critical Thinking are skills that are mentioned explicitly through the RISD website and ingrained in their curriculum.

- 4 Massachusetts Institute of Technology (MIT) MIT Design Lab is deeply rooted in technology. Design is taught from a lab and not from a school. Therefore it appears to be leaning more to scholarship and criticism than teaching the hard design skills. They do multidisciplinary research with critical reflection. Their approach to problem-solving involves redefining the question/problem statement first.

Problem-solving and critical thinking are aligned together at the Design Lab. The lab is challenging the status quo and given assumptions with ongoing critical reflection. They do not only focus on problem solving, but also on “problem making” skills. Creativity is indirectly mentioned, and it does not appear to be a core component of their curriculum.

- 5 Politecnico di Milano Milan is a city with a long design practice tradition which derived from the material culture of craftsmanship that the region of Lombardy has had since the beginning of the last century. A meeting point for different cultures, the school has a constant desire to experiment with innovation and experimental development lines to match the real market needs of contemporary society. All courses deploy a multi-disciplinary approach to design.

Creativity appears to be present from an artistic angle. It is unclear whether problem-solving and critical thinking is taught, due to lack of information in English.

- 6 University of the Arts London UAL is a group of 6 renowned colleges. Each college has a different domain-specific focus, even though there are commonalities among the colleges and they share the same strategy. A large body of students with 18 thousand individuals from 130 countries provides multi-culturalism which is a core strength of the university.

Creativity is well embedded. UAL is using teaching methods based on the best creative practices and is adapting the methods accordingly to ensure that their students will possess future-proof skills in their future careers. There is little evidence that

UAL is teaching problem-solving skills. Curiosity, making and critical questioning are at the core of the curriculum; thus, Critical Thinking skills are in the curriculum.

7 Pratt Institute

The school is confident about its competencies and is proudly being part of the New York City, a multicultural world centre for arts, culture design and business. The curriculum is interdisciplinary and promotes creative strategies for design thinking. The school aims to develop the students with professional competences, including establishing a critical judgment and historical perspective. The school believes that these skills will equip students with the right tools and mind to become creative problem solvers.

Pratt Institute is devoted to the transformative power of creativity. Problem-solving is a core component of the foundation year while critical thinking with deep understanding develops throughout the entire curriculum.

8 School of the Art Institute of Chicago: SAIC

SAIC advocates self-directed study curriculum with interdisciplinarity as a core value for exploration. Critical thinking, rigorous investigation and creativity are well ingrained in their core values too. Critique is also a fundamental component of their curriculum.

Creativity is well ingrained in the curriculum. Problem-solving is not explicit on the text. Therefore it is unclear whether they teach it. Critical thinking seems integrated well in the curriculum.

9 Aalto University

Aalto university puts a greater emphasis on humans though technology-driven thinking and interaction among different disciplines. It claims that it is a meeting point where science and art meet business and technology, it is an institution with a human-focused, user first philosophy.

We did not find mentions of creativity; however, it appears that the university strives for novelty. Problem-solving is not stated either, yet; it seems to be present. Critical Thinking is offered by placing students to think of new artistic and scientific ways of seeing the world.

10 Stanford University

A school with a wide-open policy, welcomes anyone to join and become an innovator. Interdisciplinarity is deeply rooted here, as the school serves Stanford students regardless of their major or discipline. Their inclusive approach aims to help people unlock their creative potential and apply it to all kinds of problems, including messy and complicated issues.

Creativity is embedded very well in the d.school curriculum. Problem Solving is at the core of the projects that the d.school students are working on, as all projects come from the real world and are not student assignments, they are actual problems. Critical Thinking appears not to be part of the curriculum.

*Table 3. Skills taught, as observed by their publicly accessible online prospectus.
September 14, 2018*

Rank	School	Creativity	(Complex) Problem Solving	Critical Thinking
1	School of Design - Royal College of Art (RCA)	Taught	Unclear	Unclear
2	Parsons School of Design -The New School	Taught	Taught	Taught
3	Rhode Island School of Design (RISD)	Taught	Taught	Taught
4	Design Lab - Massachusetts Institute of Technology (MIT)	Taught	Taught	Unclear
5	School of Design - Politecnico di Milano	Unclear	Unclear	Unclear
6	University of the Arts London (UAL)	Taught	<i>Seems not taught</i>	Taught
7	School of Design - Pratt Institute	Taught	Taught	Taught
8	School of the Art Institute of Chicago (SAIC)	Taught	<i>Seems not taught</i>	Taught
9	Department of Design -Aalto University	Unclear	Seems taught	Taught
10	d.School - Stanford University	Taught	Taught	<i>Seems not taught</i>
		8/10	5/10	6/10

Conclusions & Discussion

In this section you can read the main conclusions of this study. Limitations of the study are further below. The paper concludes with two suggestions for further, future research.

Main findings

Creativity is the top promoted skill, and it integrates well across the board. Every single English-speaking institution has creativity in their texts. Critical thinking is also encouraged by a little over than half of the institutions. Complex problem-solving appears to be missing entirely. We failed to find any reference to the exact wording “critical problem-solving”. Nevertheless, upon looking at “problem-solving” without any reference to complexity, we can see that about half of the schools advocate problem-solving. Many schools are aware that this skill is a definite asset for their students, and the lack of any reference to complexity may worth further investigating.

Creativity appears to have a similar connotation across all universities (with usefulness or novelty mentioned at times) even though slight nuances emerge, depending on the university. For instance, MIT is a school with a solid foundation in engineering, and it seems to have a definition of creativity that is leaning towards innovation whereas some art schools seem to lean towards inventiveness or imagination. Overall, creativity does appear to have a meaning that is analogous to our working definition.

Critical thinking appears a looser and more unrefined concept throughout the texts examined. For instance, RISD labels it as “Critical Making”, and it correlates it with craftsmanship, whereas Aalto University encourages the freedom to be creative and critical. Parsons and Pratt Institute, on the contrary, promote critical thinking as independent skills. We can observe that the same concept slightly varies from institution to institution.

Perhaps the variety of definitions may be attributed to the fact that many and design schools are operated independently without seeing any analogy of themselves with

any academic counterparts (Abel, 2013). It is understandable that different schools are aligned towards their specific area of expertise and approach the same concept from a slightly different angle. Different angles provide multiple perspectives and make the field deeper. However, it is crucial to have a common ground with solid definitions. For instance, problem-solving has many definitions (McCade, 1990) which makes it possible that the universities may refer to different meanings of a similarly labelled concept. Such phenomena make this study more difficult but also more critical and relevant.

Another finding in this study is a great emphasis on interdisciplinarity and cross-disciplinarity from multiple colleges. Sarah Stein Greenberg (2014), an educator from Stanford University argues that the world is changing rapidly, and it is possible that the skills students receive now may become outdated quickly within a few years after students graduate. Educators ought to prepare students adapting to new circumstances over their lifetimes. This skill is labelled as “adaptive learning” in Stanford (Greenberg et al., 2014). The world’s top design universities are exposing their students to multiple educational experiences, providing a rich-learning environment.

Limitations of the study

A significant limitation of this study is that the website or the prospectus of an educational institution may not necessarily reflect the program content and what courses they teach. It is possible that a university aims to attract prospective students through these pages and as such they portray an optimistic idea that is relevant to fresh school graduates. Judging an institution from its promotional material is perhaps superficial because we only see the image that the university wanted us to see. Thus this information may be fundamentally biased. Judging module syllabuses or course handouts would have been ideal. However, this information is publicly available for all universities.

A reflection that we must mention in regards of the textual analysis that we performed is that we have been looking for specific strings of texts or their synonyms, such as creativity, complex problem solving and critical thinking. The issue with this approach is that we are looking for precise terminology and we may have misjudged some institutions due to the colourful complexity of words having multiple meanings. For example, a school may be teaching problem-solving skills, and they have been labelling the same skill as analytical thinking. Therefore we may have missed it with the method that we pursued.

Another issue is that of the temporal nature when surveying websites. As websites continuously adapt to new circumstances and frequently change with dynamic content, our observation in this study is temporal. That means our findings now may be incorrect shortly. For this reason, this study only assesses the situation as is, at the time of publishing this paper.

Another problem that we ought to mention is that of the QS World Ranking List. The theme examined is Art and Design. Art and Design are two separate domains with different characteristics and motives, even though they share some commonalities.

That means it is -somewhat- flawed to consider this list as the list of the world's top design schools.

Suggestions for future studies

This paper presents an initial, exploratory study. There are many possible directions for future research. In this section we offer two suggestions for future studies, the first one is to pursue a more extensive look at complex problem-solving in design education. The second one regards design being as an academic discipline.

Complex problem-solving in design education

As we are facing many complex problems in the world today, it takes more than just troubleshooting to address complex issues. It is possible that universities are tackling complex problem-solving through an interdisciplinary approach or perhaps complex problem-solving skills are fostered through design thinking. A more in-depth, more extensive study could provide more insights in this area.

Design as an academic discipline.

About half the world's top art and design schools offer a PhD program. PhD studies may imply a particular type of skill-set, that can include skills such as project management, knowledge and information or communication skills. Some argue that design is as a hands-on, practical skill. At the same time, design is also emerging as an academic discipline. It may worth investigating whether the schools that offer PhD studies in design are promoting a different skill-set to their design students, compared to schools that have been traditionally teaching design as an applied arts and crafts discipline.

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The Root of Spiritual Education: Chinese Culture's Guigu Spiritual Method

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

Spiritualism is the faith or belief that an individual maintains concerning life's ultimate value. Out of the world's four ancient civilizations, only the Chinese culture has remain fairly unbroken in its continuity, and the I Ching can be found at the root of Chinese philosophy and thoughts. All that governs Chinese culture can be traced back to I Ching, which describes the laws of harmony for the universe at large, and is the path for returning spirituality to the empty space (akasadhatu). I Ching originated from the Three Sovereigns and the Five Emperors, inherited by the master of wisdom Wan Chan Lao Chu and nurtured into the Guigu culture. The spiritual method is the origin, which is the root and source of I Ching, truth and wisdom, is both of Master Wang and Mentor Guigu, and is the awareness of the self. Spirituality is gained through the method. The truth from the universe's law of harmony is our origin and the infinite depth of our spirituality. The origin and root of spirituality is also the law of harmony, under the pseudonym of Guigu. The Guiguzui spiritual method using I Ching teachings, a superior spiritual method to true peace where man is taught peace can only be achieved through peace. This is the key to why the energy of Chinese culture has continued and flourished through time. This article describes the essence of Guigu spiritual method in Chinese culture, and what is the root of spiritual education in Chinese culture.

Keywords: Guigu spiritual method, Guigu culture, weixin divination, the Middle path, spiritual education

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Introduction

Pursuing economic and social progress is often a necessary direction for state governance. Looking back at the Asian financial turmoil in 1997, the global financial crisis in 2008 and the European debt crisis in 2011, the global economic environment is turbulent. The first issue to be confronted is the unemployment rate, which affects the stability of social security. The consequence is the issue of the physical and mental health on the individual level. According to the World Health Organization, in 2018, the burden of depression and other mental health conditions is on the rise globally. Depression is a common illness worldwide, with more than 300 million people affected. Depression results from a complex interaction of social, psychological and biological factors. People who have gone through adverse life events (unemployment, bereavement, psychological trauma) are more likely to develop depression. At its worst, depression can lead to suicide. Close to 800 000 people die due to suicide every year. Suicide is the second leading cause of death in 15 to 29-year-olds. Depression is an issue that is not limited by countries, ethnicities, genders, ages, occupations, and wealth, which is influencing different regions of the world at speeds and at a level of crisis that we can't imagine. From the macroscopic perspective, the external environment is reflected in the political, economic, societal and scientific and technological aspects, but from the microscopic perspective, it is the meaning and value of life truly hidden within human beings.

Therefore, Gawain (1996) believes that much of the chaos in society is rooted in "the deepest level of spiritual alienation and deprivation." Miller (2000) points out that the world's interest in spiritual affairs is increasing day by day. Miller defines spirituality as: if the existence of "spirituality" can be found in life, it is certain that the relationship between heaven and man is not a broken one. Any action that can be learned by the top and passed down to the bottom is certain to magnify life, and inspire spirituality, which in turn promote being serious about life, to live a meaningful life so as to affirm oneself. Spiritual education is one with high expectations. Spiritual learning seeks to restore the balance between external and internal life.

With regards to discussions of spirituality in the field of education, the 74th issue of the New Directions for Adult and Continuing Education series published in the U. S. in 1997 focused on the topic of spirituality to explore many adult learning and spiritual issues. Perterson (2002) consider that the term spiritual not only includes the omnipresent, boundless, immutable Principle pervading the universe that many call God, but it also includes forces and beings that are so subtle in their energetic field that they are rendered imperceptible to gross, physical senses. He assumed that the "outside environment" that we perceive with our senses is merely the outer crust of a vibratory reality that contains worlds within worlds of objective, "spiritual" existence. The many layers of subconscious and unconscious mentality of human beings, according to this view, also exist in these inner, subtle worlds. Perterson formulated the view about spirituality is everywhere in education and all work with children is, in essence, spiritual. A statement such as "all education is spiritual" can be substantiated by his own research documented in the secret life of kids. Perterson scholar's point of view is that the purpose of education is essentially the same as the spiritual purpose of life itself. The Latin term *educare*, meaning to "draw out from within," gives a spiritual context to all education. Education is meant not simply to prepare children

for adult careers or to initiate them into the ways of society. Rather, education should help children unfold their inner, human potentials so that they can be of service to the world around them.

The relationship between education and culture is one that connects them to one another and is cooperative. The transmission and innovation of culture depend on the implementation of education. Culture should be regarded as education, and education as culture, such that the two are in a position of unity. Culture is the past experience of mankind, the societal tradition, the heritage of history, or even learned behaviors. The function of education is the process to transfer and sustain the past experience of human beings, societal traditions, and historical heritage, so that every member of society, as well as individuals who will become members of society, can learn and share. Therefore, the process of education is the process of culture. The form of education is the form of culture; the content of education is the content of culture. However, from the perspective of oriental culture, what are the roots and connotations of spirituality, education, and culture? Looking at the four ancient civilizations of the world, only the Chinese culture has maintained a continuous history, innovating and refreshing itself. Nowadays, Chinese culture is in the center of the world economy. Therefore, this study uses Chinese culture as the research theme to explore the origins of spiritual education.

The origins of the orthodox Chinese culture

Chinese culture has a long history and its philosophical foundation is in the I Ching, the Book of Changes. The Book of Changes is the oldest book of Chinese culture. It is the head of the classics and the origin of the grand ways, which has deeply influenced the development of Chinese culture. In order to further understand the roots of Chinese culture in spiritual education, this article is based on the literature review of the 15615 volumes of Collected Taoist Scriptures and 23 volumes of idealism classics of Weixin Shengjiao.

“Tiande Scriptures” of Mentor Guigu states:

「無極天帝伏羲氏。心傳天機。畫卦作易。妙述天地法則。傳至今日已有七千年。悠悠歲月。人事山河大地文化變遷無量劫。但真理永恆不變。易之妙。道之妙。天地無常之道也。」

“Fuxi the Wu-Ji Celestial emperor passed on the secrets of the heaven, drew Bagua and wrote the Book of Changes. He wonderfully taught the rules of heaven and earth. It has been passed on for seven thousand years. The Changes in people, things, mountains and rivers, and culture have been tremendous in the innumerable eons. But the truth is eternal. The wonder of Changes and paths represents the impermanence in heaven and earth.”

Grand Master Hun Yuan of Weixin Shengjiao described that prior to the innumerable eons, the origins of wisdom, nature and life were a peaceful heaven full of vigorous Yang Chi and light. Fuxi drew the Primordial Bagua of Tai Chi, and comprehended through his heart the secret of heaven represented by Qian, Dui, Li, Zhen, Xun, Kan, Gen, and Kun of Primordial Bagua, which is of the void of the grand universe. The Changes are the exchange of Yin and Yang. The rule of heaven and earth is the relative communication of Yin and Yang. The Yin and Yang are the ways. The law of Yin and Yang is the abundant native truth and wondrous method of the void of the

grand universe. It has been passed down from Fuxi for more than seven millennia. All of the world's laws and things are the Changes, all governed by exchanges and alterations. Every living being and thing in the world, every change, and every good and evil are all laws evolved from the impermanence.

“Tiande Scriptures” of Mentor Guigu also states:

「心易大道。不離八卦。乾兌離震。巽坎艮坤。位位天機。位位天德。妙不可言。不可思議。」

“The grand path of the heart and the Changes do not deviate from the Eight Diagrams. Each position of the Qian, Dui, Li, Zhen, Xun, Kan, Gen, and Kun are the secret of the heaven, and represents the virtue of the heaven, which is incredulously wonderful and unbelievable.”

In 2003, Grand Master Hun Yuan explained the spirit of the grand path of the heart and the Changes as the life of all sentient beings. The hearts of all sentient beings comprise our lives, and our lives comprise the lives of all beings. This also reveals the intricate life concepts and experiences of the Qian, Dui, Li, Zhen, Xun, Kan, Gen, and Kun. "Qian, Dui, Li, Zhen, Xun, Kan, Gen, and Kun" are the eight wonderful methods that the void of the trisahasra-maha-sahasra-lokadhatu can't leave. They are the basic conditions for the structure of all sentient beings and things, and the eight elements of family ethics in the secular world. They are the basic elements and forces of human life and they are also the element of earth's reconciliation. The heavenly secrets of Qian, Dui, Li, Zhen, Xun, Kan, Gen, and Kun of Bagua evolved into sixty-four trigrams and three hundred and eighty-four lines of a trigram, and evolved into boundless sentient beings in the Dharma realm in time and space 2.4 billion and 6,400 rounds. The grand path of the heart and the Changes is return to the origin from the heart, the path to any heaven and the world. Therefore, the Dharma between heaven and earth cannot be expressed, discussed and imagined in words. It can only be experienced and practiced by oneself with the combination of knowledge and actions. Grand Master Hun Yuan explains the Zen interpretation of Bagua of the Book of Changes, and states:

- ☰ "Qian as the sky"; the sky is wide and boundless; one needs to learn the forgiveness and generousness of the sky.
- ☱ "Dui as the pool"; there are many lives and energies in the pool, and it also contain every sentient beings and things, which means one needs to learn to transform this into life, and turn into wisdom, confidence, and strength.
- ☲ "Li as fire"; fire symbolizes the light, and the heart contains the light which shines upon the earth. One shall have good understanding of everything and learn the enlightened heart of sages.
- ☳ "Zhen as thunder"; thunder is the voice of Dharma, and the thunder between heaven and earth reminds everyone to do things with wisdom and courage, to be more understanding, recite more of Buddhist mantra, and speak good words;
- ☴ "Xun as the wind"; the wind is the energy of breathing, and if the earth is windless, all beings would be lifeless. The wind is the great mentor of all beings and therefore, the wind is joy.
- ☵ "Kan as water"; water is the source of human life and property. One shall be

wise and grateful upon seeing water, and needs to learn the flexibility of the water.

- ☰ "Gen as the mountain"; the mountain is life, Buddhist nature, gorgeous genuine nature, and steadfast as can be. One needs to learn the stillness of the mountain, and the steadiness of the mountain.
- ☷ "Kun as the earth"; the earth bears and carries all the sentient beings and things. One shall learn, reflect, and repent to accommodate all beings as the earth does.

Given the aforementioned, Grand Master Hun Yuan revealed that the origin of the orthodoxy Chinese culture is the Book of Changes. 7352 years ago, Fuxi created the sky in one stroke and founded the earth with a second stroke, which is known as the Wu-Ji, is the Primordial Bagua and the nature of void. There then came the fairy of ninth heaven, which is Tai-Ji, as the Manifested Bagua. The Two Forces and Four Symbols were generated from thence. Later, the Three Emperors of China, the Yellow Emperor, the Emperor Yan and the Emperor Chi-You subsequently emerged. The Yellow Emperor and the Emperor Yan inherited the Primordial Bagua of the ancestor Fuxi, which is emptiness, the Feng Shui of the mountains and rivers and the methods of Lianshan and Guizang, as the "body"; Emperor Chi-You inherited the Manifested Bagua of the fairy of ninth heaven, which is the three elements and nine operations with the flow of fate and the law of movement for the nine planets, as the "application"; Thereafter, the Kunlun civilization, Fuxi civilization and Sanzu civilization was passed down along Taihang Mountain to Yunmeng Mountain in Qixian County, Henan Province. It was passed down from the ancestors to the Bodhisattva Wang Chan Lao Zu, and was developed as the Guigu Culture. It began with the Primordial and Manifested Bagua Culture of the Three Sovereigns and Five Emperors. The physical form and practical application for both were well established. Guigu Culture was passed from Yunmeng Mountain in Qixian County, Henan Province, through Magong City, Penghu County, to Mt. Chan-Chi in Taiwan. It was passed down to Grand Master Hun Yuan of Weixin Shengjiao, which then established itself and became rooted in Taiwan.

Chinese culture is spiritual education

“Scripture of Peace of Mind” of Weixin Shengjiao states:

「唯心聖教 法源易經 伏羲氏祖 一畫開天 再畫闢地 人立其中 萬法生成 先天河圖 後天洛書 體用兼備 法古今來 未有變化 一以貫之 人之生命 亦復如是。」

“The doctrines of Weixin Shengjiao originated from the Book of Changes. The Ancestor Fuxi created the sky with one stroke, founded the earth with the second stroke, and then sentient beings stood in between. All laws were formulated. Both the physical form and practical application of Primordial Bagua in the illustration from the Yellow River and Manifested Bagua in the book from Luoshui were well established to be consistently observed through the ages without change. It is also true to human life.”

In 2014, Grand Master Hun Yuan explained that the Book of Changes demonstrates everything from the cause to the result, which is the most serious religious treasure for causality. The Book of Changes is the supreme wisdom that is so large to have

nothing going beyond and so small to have nothing going within. The Dharma source of the Book of Changes is the wisdom of 7,354 years. It is the grand wisdom of 2.4 billion and 6,400 rounds of Bagua, which can relieve 84,000 troubles. Therefore, the Book of Changes is the source of Weixin Shengjiao. Ancestor Fuxi is the same as Wu-Ji the ancestor, meaning that Wu-Ji (Limitlessness) is our ancestor, our root and origin. Striking once to create the sky means that the sky is pure and radiant, which is our spirituality and indicates that everyone is equal; striking twice to found the earth means our physical and darkness, which comprises greed, anger and ignorance, the three poisons in the human mind. There is heaven and earth and there are sentient beings in the middle. There are all the laws that are boundless between heaven and earth. The primordial in the Primordial Bagua in the illustration from the Yellow River is our wisdom, and it is as steady as can be. The illustration from the Yellow River is our emptiness, focusing on the spirituality and emphasizing the emptiness.

The manifestation in Manifested Bagua in the book from Luoshui represents the application. The book from Luoshui is the Bagua of Jiugong, namely, Qian, Dui, Li, Zhen, Xun, Kan, Gen, and Kun, which are constantly changing. Therefore, the spiritual wisdom of our entire thinking is the knowledge, and our internal organs, eyes, ears, and limbs are the utility, and we must be able to make use of both the physical form and practical utility, and integrate our knowledge and actions. Heaven, earth, and sentient beings are all in one place. This is Zen, which represents our heart and life. The human body will eventually be decayed and destroyed, which is in the world of form, but life is eternal is the empty space (akasadhatu). We are constantly in the wheel of reincarnation circulating through the worlds. From this, it can be seen that the Dharma origin of the Chinese culture is the Book of Changes. Human being is life and culture is also life.

“The True Scripture of the Mysteries” of Bodhisattva Wang Chan Lao Zu states:

「靈性稟自無極 惟人得厚 物僅得微 故人微為萬物靈長 能致知格物
自三皇迄至於今 生生不息 其數難稽」

“Spirituality originates from Wu-Ji (Limitlessness). Only human beings are bestowed the rich natures from the world, while the other sentient beings obtained only very little of it. Therefore, the human beings are at the top level of sentient beings, who can exploit knowledge and research things. Since the Three Emperors, they have continued to perpetuate and the amount is countless.”

Human life includes the access to and the departure from the world. The life of human beings is the Buddha's nature, the universe's void is infinite, and the human life is our soul. There are three lives in a human being, the first one is the life of the body that is temporal ; the second is the life of the soul, which is the Sipa Bardo; the third is the life of wisdom, which is the infinite life and eternal wisdom. The life of the wisdom and the life of the soul contained in the life of the body are integrated as one. If a person does not have the "essence of life", he cannot master his own life.

In 2014, Grand Master Hun Yuan explained "Scripture of Peace of Mind in True Zen" of Weixin Shengjiao regarding the importance of studying the Book of Changes. Through the study of the Book of Changes, the use of the Book of Changes to solemnize our hearts, the truth of the law of Yi Jing, the solemnity and achievement of

our sacred self-Buddha. When we know both ends, we realize that success, failure, from birth to death, arrival and absence, the coming and going, and whether or not we should be able to return to the sun and the moon.

Therefore, Grand Master Hun Yuan of Weixin Shengjiao revealed and enlightened with an ink treasure at the Origin of the World Peace Dharma meeting in Taichung Bodhimanda of the Weixin Shengjiao: "Buddhism and Taoism both start from each end of the Yin and Yang, with no good and evil. The good and evil in one heart, they all return to the stillness and purity without the controversy between the cleanness and filthiness, which can then realize the true Zen of Buddhism and Taoism." In addition, the ink treasure states: "concentrating wholeheartedly on the Changes to maneuver the openness and closeness of the Yin and Yang. The rise and diminishment of the ideas shall not reside at both ends. The presence and absence of the ideas exist in the minds of the secular persons and the saints. All of the beings improve intensively and never retreat. Such is the oneness." All of the above are the grand path of the Changes and the true Zen and Truth.

The inheritance of Chinese culture is the Guigu spiritual method

The "Perfect Scripture for Calming the Mind" of Weixin Shengjiao states:
 「鬼谷仙師 王禪老祖 始自三祖 軒轅黃帝 神農炎帝 九黎蚩尤 三皇五帝 列祖列宗 億萬子孫 生生不息 三世因果 一以貫之 即名王禪 心法是祖 真理是祖 亦名鬼谷 佛曰佛子 無始無終 故名老祖 王禪老祖 鬼谷仙師 本是如一 故有真禪 了知法界 三千世界 萬法歸宗 萬法唯心 即是易心 古往至今 一炁呵成 即名易經 生命如是 萬法如是 空無如是。」

"The Mentor Guigu and Wang Chan Lao Zu originated from the three ancestors: the Yellow Emperor, the Emperor Yan and the Emperor Chi-You. The Three Sovereigns and Five Emperors, every ancestor and billions of descendants are endlessly living on. The three generations of causes and effects resulted in a constant outcome as the name of Wang Chan. With the spiritual method and the truth as the ancestral origins, he is also known as Guigu. Just like the offspring of Buddha, who has no beginnings and no end, he bore the name of Lao Zu. Wang Chan Lao Zu is the Mentor Guigu; they are the one and the same. Therefore, there is the true Zen that thoroughly comprehends the realm of Dharma. In the trisahasra-maha-sahasra-lokadhatu, every law pertains to this origin; every law originates from the heart, that is, the heart of Changes. From ancient times to the present, the truth is realized in one action, and its name is I Ching - the Book of Changes, as is life, as is every law, as is the emptiness."

In 2014, the Grand Master Hun Yuan explained that Mentor Guigu is the Wang Chan Lao Zu. Wang Chan Lao Zu is the heavenly realm, the empty realm and the sage of wisdom. The Mentor Guigu is the mentor of the man and the heaven. Guigu represents the man and the earth, the Mentor is the heaven, a practitioner, a teacher for people, and a teacher for the secular world. Therefore, the Mentor Guigu is our spirit. The human heart contains the spirit of heaven and the spirit of the earth. The heaven, the earth, and the people are united as one, which is Wang Chan, representing wisdom, consciousness, light and nature.

"Three generations of causes and effects" are all the causes and effects, first the cause then the effect, the good causes and good effects, and evil causes and evil effects. Only when we let go can we return to find our own spirituality, nature and Amitabha. This is called Wang Chan. The spirit in "spiritual method" is the accumulation of life experience. The method is the joy, anger, sadness, and happiness of the world, favors and grudges, affection and hatred, as well as the formation, existence, destruction, and emptiness. The spirit is the process of the method, and therefore, the method is the origin of the spirit and the spirit is the origin of the method. The spirit and the method are thus our origins as well as our roots and source. The spiritual method is the origin and hence, the Book of Changes, and the origin of the truth and wisdom. That is, the ancestors of Wang Chan Lao Zu are also the Mentor Guigu. The self-consciousness means the real realm of conscience and peace of mind. With the real understanding, actual practice and wisdom, it is true Zen.

Therefore, the spirit is of such a principle, the past, the present and the future is a long flowing path, which is also the spirit of Changes. From the past to the present, our spiritual life wisdom forms in one action, which is called the Book of Changes. Life is the grand path of the Changes as mentioned above, and all laws are also the grand path of the Changes, in addition, when the physical body perishes, the spiritual nature return to the empty space (akasadhatu), which is also the grand path of the Changes. Therefore, Chinese culture is named as Wang Chan, also known as Guigu, the spirit of Changes, also as the Book of Changes. The Grand Master Hun Yuan thus explained the true Zen of fortune telling: one is the secrets of heaven, two is the hearts of people, and three is the righteous outcome. The connotation of the above classic text reveals to the people that the orthodoxy Chinese culture is the Book of Changes. It is a well-established grand path of Changes. It is the law of the grand universe. It is the grand path for the spirituality to return to the world of emptiness. It is the truth of the middle and true Zen that are not attached to both ends. However, how does one find an unbiased central point of the true middle? The only way is the spirit method of the Book of Changes. The ancient wisdom is applied for present use, and it uses the Changes. The true Zen in the realm of peace of mind can only be realized by applying the ancient wisdom to the present. Therefore, the Grand Master Hun Yuan revealed that "Guiguzi's spiritual method is to use the Changes. Therefore, teaching mankind to achieve peace from peace is the ultimate spiritual method...the promotion of Guiguzi's spiritual method in Taiwan is an illuminating lighthouse of Chinese culture for the past five millennia."

Hence, this article is complimentary of Wang Chan Lao Zu's Buddhist hymn:
 "The Yin and Yang and the sun and moon have the longest existence. Unfortunately, the heavenly principles are difficult to comprehend. If there is a true sage such as Guiguzi, the world shall come to peace once such an individual emerges."

In 2003, Grand Master Hun Yuan of Weixin Shengjiao elaborated on the Buddhist hymns of Wang Chan Lao Zu. The so-called "Changes" means exchange. Everything in the world and every law of the world will exist forever. From birth to death and from death to life, life and death are all of "the Yin and Yang and the sun and moon have the longest existence", and they will always exist.

"Unfortunately, the heavenly principles are difficult to comprehend." Heavenly

principles are principles of human beings. Our life is in the pursuit of a middle path. No matter the modulation of the one Yin and one Yang or one sun and one moon, the most important thing is our heart.

“If there is a true sage such as Guiguzi,” The so-called "sage" is our heart and our consciousness. They are the true sage because they are pure and clean. The holiness of the sages is from those who have come to a realization, have become enlightened. Our nature and our characteristics are called Guiguzi. Guiguzi shows us enlightenment: in the middle of a thought, where is the beginning and ending of our thought? It is the characteristics of our souls in our nature, that is steadfast, and it is called Guiguzi.

"The world shall come to peace once such an individual emerges," If our conscience appears, our own little world will be peaceful, our little spiritual world will be serene. The family will be peaceful, the work will be smooth, the society will be safe and happy, and the country will be strong and stable. Therefore, it is called "The world shall come to peace once such an individual emerges."

Summary

This article is based on the literature review of the 15615 volumes of Collected Taoist Scriptures of Weixin Shengjiao, which are lectured on and edited by Grand Master Hun Yuan. The doctrine of Weixin Shengjiao is the Book of Changes, that is, to promote the orthodoxy of Chinese culture. Therefore, the collection of classic literature of the Collected Taoist Scriptures is based on the orthodoxy of the Chinese culture, the Book of Changes, and Feng Shui. This article is based on the four main classics of the Weixin Shengjiao. The article essentially draws on the content of the scriptures as evidence to demonstrate the root of Chinese culture is the Book of Changes. The spirituality of humanity is derived from the Wu-Ji (Limitlessness), which is the primordial of all things. At the same time, it consolidates the classics lectured on and enlightened by Grand Master Hun Yuan, and establishing the core value of the inheritance of the orthodoxy Chinese culture as the Guigu spiritual method. Finally, supplemented by the law of Feng Shui, it constructs a idealistic pure land in the form realm, and through the use of Changes in the heart returns one to the wisdom of own-being and world of emptiness, such that the life of wisdom can be eternal so as to implement the true meaning of education. It can be seen the Guigu spiritual method of Chinese culture is ever-proliferating, with a long history and is the root of the spiritual education.

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Using Social Innovation to Implement Weixin Shengjiao Doctrine in Lifelong Education

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

In the past decade, the concept of social innovation has been constantly looked at and examined by scholars, for-profit organizations, non-profit organizations as well as the government, and has been widely explored and applied. Taiwan is facing the problem of an aging population and low birth rate. It is therefore of the essence to be able to maintain harmony and stability in society. This study conducts individual case studies to explore how the new religious group, Weixin Shengjiao applies the concept of social innovation to implement its doctrine through lifelong education, and to help the government create a harmonious society. The research found that the central tenet of the Weixin Shengjiao is the fusion of I Ching and Feng Shui, with the thoughts of Confucianism, Taoism and Buddhism in Chinese culture, to pass on and further promote Chinese culture in modern society. In 1994, the founder of Weixin Shengjiao, Grand Master Hun Yuan, created a lifelong education platform known as I Ching University. The university has three major foci, which implements the core essences of the Weixin Shengjiao of moral, life, environmental, filial piety and cultural education. Based on the local humanistic, social and economic features, I Ching University uses practical, current, realistic innovations for widespread distribution, in order to nurture talents and create a harmonious society.

Keywords: social innovation, I Ching University, I Ching, Feng shui, Lifelong education

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Introduction

In the past few decades, the concept of social innovation has continuously attracted attention from scholars, for-profit organizations, non-profit organizations or government bodies, and has been widely explored and applied. The emergence of social innovation lies in the use of innovative methods to solve social and economic problems, and potentially affect the well-being and sustainable development of individuals or groups in a positive manner. Over the past 10 years, the world has been facing various challenges, such as typhoons and hurricanes caused by changes in the environment, earthquakes, tsunamis, air pollution, terrorist attacks, nuclear and military threats, wars, religious ideology struggles, hunger, poverty, drug trafficking, virus transmission, state-scale financial crisis, corporate labor disputes, dissemination of fake news, food safety, demographic changes and so on.

Therefore, it is imperative for individual countries to maintain harmony and stability of nation and society. This study takes "social innovation" as a theoretical point of view and explores how to apply the concept of social innovation in the emerging international religious group "Weixin Shengjiao" in Taiwan through a case study method, and implement the doctrines of the religion in the way of lifelong learning to achieve the purpose of universal harmony and peace of the world and help the government to create a harmonious society based on the power of the private sector.

Social Innovation

Drucker (2002) defines innovation as a tool used by entrepreneurs to exploit a change as an opportunity for a different business or a different service. The Oslo Manual (1997, p.22) states that "innovation can occur in any sector of the economy, including government services such as health and education." Social innovation is a process initiated by social actors to respond to a desire, a need, to find a solution or to seize an opportunity of action to change social relations, to transform a frame or propose new cultural orientations to improve the quality and community living conditions (Crises, 2014). O'Byrne et al. (2013, p. 54) defined social innovation as the "successful implementation of activities, such as ideas, practices, or objects, through new collaborations and partnerships, in ways that positively impact society by improving the delivery of public services." Social innovations encompass "changes in the cultural, normative or regulative structures of the society which enhance its collective power resources and improve its economic and social performance" (Heiskala, 2007, p. 74). Social innovation can be defined as the "development and implement of new ideas (products, services and models) to meet social needs" (Mulgan, Ali, Halkett, & Sanders, 2007, p. 9, cited by Howadlt & Schwarz, 1010, p. 25); be concerned with generation of social value (Cloutier, 2003; Saucier et al., 2006; Phills, Deigmeier, & Miller, 2008; Assogba, 2010; Herrera, 2015) for social actors and society; and also "create new social relationships or collaborations" (Murray, Caulier-Grice, & Mulgan, 2009, p. 3).

At present, it can be stated that social innovations are becoming more and more significant for economic growth (Mulgan et al., 2005). This is partly due to the fact that some of the economic growth barriers such as climatic changes or aging of societies, may be overcome only by implementation of social innovations, which reinforce human relations and well-being instead of straining these. Social innovation

is innovation in social relation as well as in meeting human need (MacCallim et al. (eds), 2012). Moulaert, Martineli, Swyngedouw, and Gonzalez (2005) identify three main dimensions of social innovation: (1) satisfaction of human needs that are not currently satisfied; (2) changes in social relations, especially with regard to governance, that not only enable the satisfaction of needs, but also increase the level of participation, especially of deprived groups in society; (3) increasing the socio-political capability and access to resources required to enhance rights to needs' fulfillment and participation.

The Weixin Shengjiao Doctrines

The source of the study in the doctrines of Weixin Shengjiao is mainly based on the Tiande Scriptures of Guiguzi enlightened by Grand Master Hun Yuan in the 99 Dharma meeting in 2003, a Zen version of interpretation for the "Chapter of Great Harmony in the Operation of Etiquette" in "Book of Rites" enlightened in 2007, the "True Scripture of the Mysteries" of Bodhisattva Wang Chan Lao Zu enlightened in the 99 Dharma meeting in 2013, "Perfect Scripture for Calming the Mind" of Weixin Shengjiao enlightened in the Thousand years of Prays for Peace and Praise of Heaven Dharma meeting in 2014, and the "Praise of the Almighty Bodhisattva Wang Chan Lao Zu" in the Nation Protection, Disaster Relief, and Peace Pray Dharma meeting in 2017.

What is a doctrine? According to the "Revised Mandarin Dictionary" by the Ministry of Education of the Republic of China, a doctrine is defined as "the meaning, reason and purpose of a religion." Grand Master Hun Yuan points out that "The heart of Weixin Shengjiao is the heart of heaven. All doctrines in the secular world all originated from the heart. All the Dharma doctrines of the saints are created by the heart of heaven and expressed to the world by words. The doctrines of Weixin Shengjiao is inclusive of all the mantras of the saints and the universe: the foundation is founded by the heavens and the earth, and the teachings and doctrines are established by the saints; the ancient saints and sages stand on the earth and live beneath the sky, consulting and measuring the sky and the earth to observe the orbits of the sun, moon, and stars, such that they comprehend that everything in the universe is contributing their duty for harmony and maintaining the relationship among people. The rise and fall of human beings and things in the universe all sprout from the heart." Grand Master Hun Yuan further indicates that "Weixin Shengjiao implements the path of compassion on behalf of the heaven. Every magi and sage of idealism should cultivate the paths for the country, pray for the people, study the holy doctrines for the greater harmony of the peoples, and to turn the holy Dharma wheel together for world peace." Therefore, on the main gate of Weixin Holy Hall of the Hsien-Fo Temple at Mt. Chan Chi, Grand Master Hun Yuan wrote the following couplet in ink "Weixin is the foundation to cultivate principles of self for the country so as to facilitate the people and heaven; Shengjiao as the words of truth to pray for the people in order to realize peace." It can be seen that the core doctrines of Weixin Shengjiao are "cultivation of principles the self for the country, prays for the people, and realization of world peace."

This study summarized the enlightenments of Grand Master Hun Yuan, and discovered that the doctrines of Weixin Shengjiao are based on the I Ching - The Book of Changes and Feng Shui of the Chinese culture, integrating Confucianism,

Buddhism and Taoism. In addition, this study finds that with the core of "cultivation of principles of self for the country and prays for the people", we have developed five major Dharma teachings, such as the Dharma teaching of filial piety and for tracing the ancestral roots, the Dharma teaching of peace of mind, the Dharma teaching of altruism, the Dharma teaching of disaster relief, and the Dharma teaching of the "Chapter of Great Harmony in the Operation of Etiquette" in "Book of Rites". With the substantive purposes of "cultivating talents, cultivating morality, cultivating noble aspiration, and realizing world peace", the ultimate goal is to achieve true peace in the world.

What is the cultivation of self for the nation and praying for the people? The so-called "cultivation of self" in the "Xiang Jun" chapter under the "Nine Songs" section of "Songs of Chu" in Qu Yuan is: "Beauty as delicate as can be, shall be cultivated." "Cultivation" has the meaning of conservation and practice. According to the "On Five Levels" section in "Anthology" written by Lu Chi: "cultivating principles of self and bringing comfort to the common people..." there is a sense of study and research in cultivation. The "Five Fish Moths" chapter in "Han Fei Zi" states: "cultivate the literature and learn speeches today." The term "cultivate" as a noun refers to a person with virtues. The "principles" refers to a common code of conduct. In the section "Ta-ya" of "The book of Odes and Hymns", it is stated that "the path of Chou is as hard as a whetstone, and as straight as an arrow" The "path" here refers to the "road", which can be extended to mean reasons, laws, principles, and other connotations. The country following the right path and implementing etiquette and righteousness to govern the world in a grand manner is the so-called path. Thus, the "Principle" are "Etiquette and Righteousness." The so-called "pray" means praying for the blessings of Heaven. In the chapter "Order of Month" of the "Book of Rites," it is said: "Let the people all contribute their power to support the royal heaven, the gods, the great mountains and rivers, and worship the spirits of the ancestral temple of a ruling house, in order to pray for blessings for the people."

The doctrines of Weixin Shengjiao: The Dharma teaching of great filial piety for tracing the roots.

This study summarizes the views of Grand Master Hun Yuan on the Dharma teaching of great filial piety for tracing the roots and discovers that, for example, Grand Master Hun Yuan revealed the essence of the "True Scripture of the Mysteries" of Bodhisattva Wang Chan Lao Zu enlightened in the 99 Dharma meeting in 2013 as: "The Shengjiao was founded based on the Dharma teaching of the filial piety for tracing the roots and returning to the hearts for all the spirits. The doctrines of Weixin Shengjiao is to trace the roots." This study observes that Weixin Shengjiao established the Taiwan Weixin Shengjiao Chinese peoples' joint ancestor worship association and held the first Chinese nationwide grand ceremonies of joint ancestor worship at the National Taiwan Sports University Sports Center on January 1, 2004. Since then, the association has invited all the decedents of the three Chinese ancestors to join the ancestors worship, and the subsequent events were held on the New Year's Day in 2005, 2006, 2008, 2009, 2010, 2012, 2013, 2014, 2015, 2016, and 2017.

Thus, in 2017, Grand Master Hun Yuan revealed the enlightenment in the Praise of the Almighty Bodhisattva Wang Chan Lao Zu" in the Nation Protection, Disaster Relief, and Peace Pray Dharma meeting in 2017 as: "honoring the glory of the

Chinese nation in centuries, internationally praising the virtues of the ancestors, remembering our origin even in daily actions, and the joint ancestors worship deserves to be praised.” There were four major ancient civilizations on Earth. The only one that prevailed is the Chinese culture. The reason why the Chinese culture can prevail is the filial piety of the Chinese peoples.” “The entire nation must worship our ancestors, starting from filial piety. We must work hard to promote filial piety. Through the path of grand filial piety, the world will be at peace. The "path of grand filial piety" is the best treasured weapon for world peace.”

The Weixin Shengjiao doctrines: The Dharma teaching of peace of mind

This study’s conclusion regarding Grand Master Hun Yuan's views on the laws for peace of mind found that the Zen Master is constantly revealing the desires of the people so that they can reach the realm of peace through various methods. They must start from reflection, repentance, practice, and at the same time, cultivate and practice the heart, the mouth, and the true spirit. Grand Master Hun Yuan encourages the public to practice diligently. He believes that "People at the age of sixties should be diligent in cultivating the self; there will be no great promotion and no greater grievance if people fail to achieve enlightenment." Cultivation is “the act of correcting the deviant minds and behaviors accumulated in the many life cycles by an individual, and frequently reflecting on their past and present daily life to see whether it aligns with righteousness. If there is a deviation, it is necessary to repent and reflect upon it, and then work hard and earnestly practice in daily life according to the revealed Dharma teaching, so that they can reach to a state of peace of mind and obtain happiness."

In 2017, Grand Master Hun Yuan also revealed the enlightenment in the “Praise of the Almighty Bodhisattva Wang Chan Lao Zu” in the Nation Protection, Disaster Relief, and Peace Pray Dharma meeting as: "Only the heart is the true doctrine. How can we settle our hearts to have peace of mind? The solution lies in learning I Ching: "Everyone learns the Book of Changes, and you can have peace of mind when you are interacting with people or doing things. You learn from the Book of Changes, and things will go smoothly no matter what you are doing." Grand Master Hun Yuan pointed out that the public can understand how to achieve peace of mind from the meaning of Baguain the Book of Changes. Grand Master Hun Yuan revealed and enlightens: "What kind of mentality can we find in Weixin Shengjiao? What is our teacher? Qian, Kun, Xun, Dui, Gen, Zhen, Li, and Kan; the streams, the air, daylight, wind, water, and earth are all our teachers."

The Weixin Shengjiao doctrines: The Dharma teaching of altruism

This study summarizes the view of Grand Master Hun Yuan on the Dharma teaching of altruism. It finds that Grand Master Hun Yuan frequently reminded people with the revelation of the founding father of the Republic of China, Dr. Sun Yat-sen, that "the purpose of life is to serve others" as well as the importance of altruism, as stated in the “Tiande Scriptures” of Guiguzi: "People of virtue are blessed and protected wholeheartedly." Grand Master Hun Yuan revealed the enlightenment of the “Tiande Scriptures” of Guiguzi in the 99 Dharma meeting in 2003 that: "For the people of moral, we try to help them, however, for people without morality, we also help him. Why should we help people without morality? Because the person is in trouble,

making him confused and do immoral things. Our Dharma teaching provides aids to people regardless of whether they are rich or poor, virtuous or without virtue. Their confusion is because they have shortcomings. We need to help him more to get over this troubled realm and get over the troubles of life and death.”

Grand Master Hun Yuan subsequently revealed the enlightenment of the “True Scripture of the Mysteries” of Bodhisattva Wang Chan Lao Zu in the 99 Dharma meeting in 2013 as: “The Dharma approach of Weixin Shengjiao is based on the “benefits”, using the orthodoxy cultural system of the I Ching - The Book of Changes and Feng Shui to let everyone enter the state of peace of mind, peace for the family, peace for career, and people will be able to have peace in the heart after that. Even if you don't become a Buddha, you can achieve the Buddha in your own hear on the spot, achieving the stability in your family and harmony around you. It is the only way to become a Buddha.”

The Weixin Shengjiao doctrines: The Dharma teaching of disaster relief

This study summarizes the views of Grand Master Hun Yuan’s on the Dharma teaching of disaster relief. Weixin Shengjiao is based on the principle of “cultivation of principles of self for the country and prays for the people”. Grand Master Hun Yuan encourages the disciples to chant the Buddhist scriptures and follow the Dharma etiquette to turn the Dharma wheel to eliminate disasters together.

This study observes that Weixin Shengjiao to eliminate disasters through the perspective of resolving injustice and absolving feud. Grand Master Hun Yuan believes that the crux the Chinese peoples have encountered countless wars lies in the restlessness of the ancestors and the unresolved injustices in history. The origin can be traced back to injustice suffered by the ancestor Chi You, and the enmity has kept brewing in generation after generation, which leads to 3,762 wars of various sizes among the Chinese peoples. Therefore, Weixin Shengjiao put forward the concept of “resolving injustice and absolving feud,” searching the past, the present and the future in order to solve the national injustices to accomplish the wish of world peace. In addition, Grand Master Hun Yuan believes that “冤” (injustice) can be between people, between people and animals, and between people and nature. And Grand Master Hun Yuan believes that it is necessary to diligently recite the scriptures and Dharma teachings to practice transference to the enmity person so as to resolve injustice and release feud among those that is suffering the injustice.

The Weixin Shengjiao doctrines: The Dharma teaching of Chapter of Great Harmony in the Operation of Etiquette

This study found that Grand Master Hun Yuan began teaching Confucius's “Chapter of Great Harmony in the Operation of Etiquette” of “Book of Rites” since 2007. Grand Master Hun Yuan provide his revelation and enlightenment on “Chapter of Great Harmony in the Operation of Etiquette” of “Book of Rites” as: ““Chapter of Great Harmony in the Operation of Etiquette” of “Book of Rites” is in Confucius’ doctrines, the most excellent approach for governance of a nation, governance of a family, governance of a career, and governance of insecurity, injustice, and dissatisfactory in our mind.” “At the time of Confucius, the greatness of “Chapter of Great Harmony in the Operation of Etiquette” of “Book of Rites” has already been

recognized and has been passed on to the present time. Dr. Sun Yat-sen, the founding father of the Republic of China, then promoted the “Chapter of Great Harmony in the Operation of Etiquette” of “Book of Rites” to the whole world.” “The “Chapter of Great Harmony in the Operation of Etiquette” of “Book of Rites” is a heavenly path to open the Dharma approach for human peace of mind.... This is the truth that the ancient sages have realized. It is a very good scripture for people to practice; it is the true scripture for the nation establishment, world peace, and the future hopes for the Chinese descendents; it offers the broad direction, policies and grand wisdom for state governance; it is the wondrous method for the country’s leader to govern the country; if people can understand the wondrous methods of “Chapter of Great Harmony in the Operation of Etiquette” of “Book of Rites” for governance of the heart, family, society and country, I believe that the world will become peaceful.” "Modern life and social phenomena are inseparable from the word "etiquette." The “Chapter of Great Harmony in the Operation of Etiquette” in “Book of Rites” is mainly based on etiquette, prioritizing the etiquettes. "Etiquette" is used to run our lives, our destiny and maintaining harmony in our society." "Therefore, we carry forward the truths of the “Chapter of Great Harmony in the Operation of Etiquette” in “Book of Rites”, and the main focus is to establish human dignity of every individual, to establish dignity of society and the dignity of all human beings."

The Case Study: Weixin Shengjiao Lifelong Education

In 1994, the then President of the Republic of China, Mr. Teng-Hui Lee, made a clear policy statement on "lifelong education": "The concept of lifelong education is to recognize the need for education at every stage of growth in life and to open up a society of learning." This study finds that Grand Master Hun Yuan, the founder and leader of Weixin Shengjiao, at that time also proposed that "everyone has the basic right to learn" and created "I Ching University" in the same year to inherit and promote Chinese culture in the way of lifelong learning in religious education and encourage people to learn I Ching. Therefore, "I Ching University" is the pioneer of the promotion of lifelong education in the history of education in the Republic of China. It is based on the principle of "cultivating talents, cultivating morality, cultivating noble aspiration, and realizing world peace."

Nowadays, I Ching University takes the doctrines of Weixin Shengjiao as the source of religious education, and teaches the sacred Dharma doctrines: the Dharma teaching of filial piety for tracing the roots, the Dharma teaching of peace of mind, the Dharma teaching of altruism, the Dharma teaching of disaster relief, and the Dharma teaching of the “Chapter of Great Harmony in the Operation of Etiquette” in “Book of Rites.” The five aspects of lifelong learnings, such as moral education, life education, environmental education, filial piety education and cultural education, are designed to be specifically practiced for the implementation of the Weixin Shengjiao doctrines for accomplishing "cultivation of principles of self for the country, prays for the people” to fulfill the ultimate goal of realizing world peace. Up to now, I Ching University has 42 Learning Hubs in the whole Taiwan, and 33 classrooms in various township communities. In addition, learning classrooms have been established in overseas regions including Hong Kong; Vietnam; Japan; Spain; Los Angeles, New York, U. S., and Toronto, Canada. At the same time, Weixin Shengjiao has established a dedicated Television station, the Wei Xin Television Station, in its philanthropy system, and courses of I Ching University is spread to the world 24/7.

Conclusion

In this paper, actual observations and literature analysis was used to discuss the application of social innovation in the emerging religious group in Taiwan, Weixin Shengjiao. The doctrines of Weixin Shengjiao are specifically spread through the model of lifelong education to achieve the purpose of world peace. This study finds that with the core of "cultivation of principles of self for the country and praying for the people", Weixin Shengjiao has developed five major Dharma teachings, such as the Dharma teaching of filial piety for tracing the roots, the Dharma teaching of peace of mind, the Dharma teaching of altruism, the Dharma teaching of disaster relief, and the Dharma teaching of the "Chapter of Great Harmony in the Operation of Etiquette" in "Book of Rites".

Weixin Shengjiao founded I Ching University in 1994. This study discovers that using I Ching University as a platform, Weixin Shengjiao specifically practice the five lifelong learnings of moral education, life education, environmental education, filial piety education and cultural for the implementation of the Weixin Shengjiao doctrines. Therefore, this study finds that in the five lifelong learning orientations described above, Weixin Shengjiao use the perspective of social innovation to develop new initiatives, so as to put forth the greatest effort for solemnity, achievement and perfection of all beings. These efforts will enable all sentient beings to gain peace of mind, and thus settle their hearts to arrive at the pure land of the secular world, and the ultimate goal will be to achieve the goal of world peace. This is the very enlightenment of the "Chapter of Great Harmony in the Operation of Etiquette" in "Book of Rites": "When the grand way prevails, the world community is equally shared by all. The worthy and able are chosen as office holders. Mutual confidence is fostered and good neighborliness cultivated. Therefore, people do not regard only their own parents as parents, nor do they treat only their own children as children. Provisions are made for the aged till their death; adults are given employment, and the young is abled to grow up. Widows and widowers, orphans, the old and childless, as well as the sick and disabled are all well taken care of. Men have their proper roles, women homes. While one hate to see wealth lying about on the ground, one do not necessarily keep it for one's own use. While one hate not to exert one's own effort, one do not necessarily devote it for one's own ends. Thus, evil scheming is supressed, and robbers, thieves and other lawless elements shall fail to arise. So that outer doors do not have to be shut. This is called "the Age of Great Harmony."

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The Study of Clinical Observation of Acupuncture Therapy in the Treatment of Motor Aphasia after Cerebral Infarction

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

Objective: To observe the clinical efficacy of acupuncture on post- cerebral infarction aphasia. **Methods:** The clinical study was based on the comparison of results pre and post treatment. 83 Patients, diagnosed as acute cerebral infarction with motor aphasia, were enrolled. They had 6 treatments per week with a day rest, 4 weeks treatment course. They had language abilities assessment according to the Chinese Aphasia Assessment Method by Gao Su Rong of Beijing Medical University. The Barthel Score was used to assess the ability to carry out daily activities. The degree of loss in neurological function was assessed using the National Institutes of Health Stroke Scale (NIHSS). The results were considered statistically significance at $P < 0.05$. **Results:** Acupuncture increases the language ability of the patients suffering from post-cerebral infarction aphasia; the total efficacy was 87.95%. It also increases the patients' ability to carry out daily activities, and significantly improve the neurological functions of the patients. **Conclusion:** Acupuncture is significantly increasing the language ability, communication ability in daily living, lowering the degree of aphasia and improving the neurological functions of patients. Acupuncture should be used widely in the clinical setting.

Keywords: Cerebral Infarction; Aphasia; Acupuncture

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Introduction

Language ability is the uniqueness that creates reaction of mental intelligence processes of complicated human. Center that controls language are mouth, tongue, pharynx and other organs which work together effectively. But especially the part where the cerebral artery can cause damage to the cortex structure which is the language control center, causing differences in aphasia. Research shows that stroke patients around 1/3 or more can have different co-occurring symptoms and different levels of speech loss. The most common language loss are patients that have communication obstacles often comes with some symptoms like irritability, short temper, self-deprecation, depression etc. patients might have negative thoughts. If not treated immediately or wrong treatment have been given, aphasia may be life-long. This will reduce the quality of daily life and mental health of patients. Currently, the mechanism on post- cerebral infarction aphasia has not been fully explained. Clinically has not yet been approved or agreed on efficacy of the treatment. There are still lack of drugs use to treat aphasia. Currently medical treatment of this disease is in use of language as a basis for practice and rehabilitation to stimulate and replace some of the abilities of the language control center. Originally this intervention although it has definite result but it is low efficiency it takes a long time so as to shorten the disease. For higher medical performance it was focus on the research in the past year for Traditional Chinese Medicine. It has gained widespread attention and has been developed in this research study using of Chinese Traditional Medicine technique theory and modern medicine as the guideline. Based on clinical trials through research study comparison, analysis, examination and experimentation. Using acupuncture to awaken the mind and open orifices effects together Acupuncture is a commonly used, simple and safe therapy, easily acceptable by most patients. Acupuncture can improve circulation, balance yin and yang, increase immunity to dispel external pathogenic factors.(Tosaeng,M., Hadsamad,S., Buahom,W,Putak,A,. & Buranatawonsom,T,2018).With treating with medicinal capsules (Danqipiantan). Rehabilitation therapy with speech practice as well as treated loss of speech after stroke for clinical effectiveness and increase in clinical rehabilitation.

Information and Methods

1. Design and Experimental

In patients with post- cerebral infarction aphasia in study before and after

Acupuncture treatment has been use to open orifices and awaken the mind. Information available from June 2012 to December 2013 from Tianjin University of Chinese Medicine, Specialized acupuncture department and out-patient clinic. Patients treated with cerebrovascular disease in total of 192 patients.

2. Diagnostic Criteria

2.1. Thicken of the arteries wall and less elasticity according to the research criteria of western medicine

According to "Chinese approach to treatment of acute cerebral ischemia 2010"

(Chinese Traditional Medicine Association of Neurological and acute stroke with stroke treatment guidelines author).

(Chinese ischemic stroke and transient ischemic attack,2010)

- (1) Onset of acute symptom
- (2) Specific damage of Nervous system
- (3) Symptoms and how long will the symptoms last?
- (4) CT scan or MRI scan or proven non-hemorrhage in the brain or other diseases.
- (5) Photos from CT scan or MRI scan that have clear image of stroke.

2.2. Diagnostic criteria of stroke

Refer to "Clinical Research Guidelines of Traditional Chinese Medicine" edition 2002. (Smith WS, Johnston SC, Easton JD. Cerebrovascular diseases. In: Kaspers DL, Fauci As, Longo DL, 2005).

- (1) Main symptoms: Hemiplegia, weakness of the four limbs, loss of control in the speech or disable to speak, deviation of the mouth.
Secondary symptoms: headache, dizziness, change of the size of pupils, chock, tilted eyes no blinking, hemiplegia and poor balance.
- (2) Onset of acute symptoms
- (3) Before symptoms occurs usually are due to cause
- (4) Age of 40 years old and above

2 or more of the above main symptoms or 2 secondary symptoms according of the occurrence the disease. Factor that causes the signs and symptoms of age-related diagnosis. Image of (CT scan or MRI scan) an obvious view of vessel constriction leading to stroke so it can be diagnose.

2.3. Standard disease stage

- (1) Acute phase within 2 weeks after onset of symptoms occurs.
- (2) Rehabilitation phase within 2 weeks to 6 months after onset of symptoms occurs.
- (3) Complications that persist beyond 6 months after onset symptoms has occurs.

2.4. Diagnostic criteria for post- cerebral infarction aphasia

According to Professor Gao Su Rong, uses "The method to check the Chinese language for motor aphasia condition" (Gao, SR.,1993). (Aphasia Battery of Chinese, ABC) content includes: easy and understandable conversation, repeating of words, calling of an objects, reaction when calling, capability to read the character or write the letters, use of language to calculate and scoring orderly so it can be finalize to diagnosis of aphasia.

The diagnostic criteria for aphasia are as follows:

- (1) Inability to speak fluently, Stuttering;
- (2) After hearing the language there are good understanding, but as soon as the conversation starts there will be wrong grammar to make it hard to understand;
- (3) Language that was heard when repeating, there are difficult;

- (4) There are obstacles in calling the name of the objects;
- (5) Difficulty to read;
- (6) Difficulty to write.

3. Admission Criteria

- (1) To comply with criteria for Western medicine diagnosis of cerebrovascular disease.
- (2) In accordance with Chinese Traditional Medicine diagnosis criteria for diagnosis (中风) in Jing Luo type (中 经络)
- (3) For the first time, the disease period is between 15 and 180 days.
- (4) The criteria for diagnosis of aphasia.
- (5) Age between ≥ 40 years to ≤ 75 years
- (6) Clear conscience mind test to show the size of MMSE shown no dementia and no mental disorders.
- (7) Before the onset of symptoms, obstructive vision and unclear hearing occurs;

4. Selection Criteria

- (1) Does not meet the criteria for admission.
- (2) Severe vision and hearing impairment;
- (3) There is aphasia proficiency from other causes before stroke;
- (4) Serious complications such as: respiratory failure, heart attack, acute myocardial infarction, renal failure, liver failure, severe pulmonary infiltrates, and cancer, etc;
- (5) Basic treatment can not be performed. Heading towards the bad prognosis.

Do not follow admission criteria, or in cases patient are selected mistakenly and do not follow acupuncture rules or incomplete information and other factors that affect the treatment should be eliminated.

5. Quitting Criteria

If the symptoms of the disease get more severe. The physician should ask the patient to stop clinical trials and withdraw from the study;
 Patients with severe illness and complications should be judged. Any non-suitable participant in the study should be withdrawn from the research;
 Patients who are reluctant to continue treatment on clinical research study, if the acupuncturist leaves the clinical trial the patient have rights to leave the clinical trial as well.

6. Termination Criteria

Serious adverse events. Clinical research design or performance deviation causing difficulty to evaluate the treatment result.

Treatment Patterns

1. Basic Treatment according to the formulas

Refer to the "Chinese Prevention Stroke Manual Guide" for blood pressure control, control of glucose in blood, control cholesterol in the blood and blood coagulation.

The treatment using medicine to prevent thrombosis

2. Acupuncture technique for opening orifices and awaken the mind. (醒脑开窍针刺法)

Treatment: Opening orifices and awaken the mind, nourish the liver and kidneys and dredge the meridians.

Indication:

Main point ; 内关 (Neiguan, PC6) (both sides), 水沟 (Shuiguo, DU 26), 三阴交 (Sanyinjiao, SP 6) (both sides), 金津 (Jinjing, EX-HN 12), 玉液 (Yuyue, X-HN 13), 上廉泉 (Shanglianquan, X-HN21)

Secondary point; 极泉 (Jiquan, HT 1), 委中 (Weizhong, BL 40), 尺泽 (Shizhe, LU 5) (affected side)

Extra points; 风池 (Fengshi, GB 20), 翳风 (Yifeng, SJ 17), 完骨 (Wangu, GB 12) (both sides)

Muscle spasm or paralysis on the upper limbs: 肩髃 (Jianyu, LI 15), 合谷 (Hegu, LI 4), 八邪 (Paxue, EX-UE 10) (affected side)

Muscle spasm or paralysis on the lower limbs: 阳陵泉 (Yanglingquan, GB 34), 丘墟 (Qiuqu, GB 40), 照海 (Zhaohai, K 16) (affected side)

Methods:

At first puncture Neiguan on both sides, embedded needle perpendicular in 0.5-1 inches, using the method of sedation technique by rotating the needle together with pulling the needle up and down for 1 minute.

Puncture Yingtang oblique upward of 0.3-0.5 inches use sedation technique by pulling the needle up and down, give the acupuncture area a tight feeling.

Puncture Sanyinjiao, obliquely along the inner bone with the skin making the an angle of 45 degree with the depth of 1-1.5 inches using the reinforcing method of pulling the needle down causing the affected leg to contract 3 times.

Puncture Jiquan avoid the axilla hair, embedded needle along the same meridian down from the same point 1 inches below, puncture perpendicular 1-1.5 inches, using

the sedation method of pulling up and down the needle making the arm muscle contracted 3 times. Puncture Shije arm bent and insert the needle in a straight line 1 inch, using the sedation method of pulling the needle up and down, causing the muscle to contract 3 times.

Puncture Weizhong, patients lay facing upward straighten the leg and put it higher insert 0.5-1 inches using the sedation method by pulling the needle up and down, make the muscle on the affected leg contract 3 times.

Puncture Fengshi, Wangu, Tianju, insert the needle in the opposite direction to the outer canthus, in-depth of 2-2.5 inches choose the reinforcing method of rotate the needle in small degrees with high speed, in 1 minute.

Puncture Jianju, embedded the needle obliquely in the direction of towards down side in depth of 1.5-2 inches, use of reinforcing needle by pulling the needle up and down, stimulate the needle to make the sensation down to the Hegu together with rotate the arm outwards, make the arm muscle contract for 1 minute.

Puncture Hegu, insert the needle in the direction of the San Jia point depth of the needle is 1-1.5 inches using the sedation method and make the patient's fingers wiggle by its own.

Puncture Baxue 0.5- 1 inches in-depth using the reinforcing method by pulling the needle up and down make the sensation down to the tip of the fingers and make the patient's fingers wiggle by its own.

Puncture Yanglingquan insert the needle obliquely in the direction downwards to the skin making an angle of 45 degrees, depth of 2-2.5 inches make the needle sensation down to the tip of the toes.

Puncture Qiuqu and make it pierce through Zhaohai shifts the patient's affected feet to straight post, insert 2-2.5 inches deep and making the end of the needle point to Zhaohai and withdraw the needle back to 1.5 inches.

2.3 Chinese patent medicine

Danipiantan capsule (丹芪偏瘫胶) 4 tablets / time 3 times / day

2.4 Rehabilitation with practice. (Zhong, DL. ,2001)

2.4.1 Muscle Training by Pronunciation: Choose one of the pronunciation methods when training focus on the use of tongue and oral muscles. Exercise the tongue, the patient put the tongue in and out then up and down, left and right respectively, follow the steps from slow to fast practice every day 6-9 times, 6-10 minutes each time. Repeat by pronouncing "ah" or other expressions such as blow the air out, blow the cheeks with close mouth, bending up the tongue, showing the teeth etc..

2.4.2. Language training: The key to restore speech is to let the patient open the mouth and speak simple word that use in daily life like sit down, thank you, hello, goodbye and so on. Besides also set up a simple problem for the patient to solve.

Patients should be careful when talking slowly and clearly, giving the patient time to think and be prepared to answer the question.

2.4.3. Analyze and understanding: Looking at an image and analyze and speak out can be used. Patients will remember familiar names, colors, or what patients are interested in. It also allows patients to view newspapers, magazines, or singing, to help in restoring memory function.

2.4.4 Body language training: The body refers to the human body in accordance with the expression, including the external body, gesture, facial expression, movement of the eyes and posture.

2.4.5 Language training at the same time with total rehabilitation: Combined therapy is very important including rehabilitation and training of limbs, language, psychological and other aspects. Rehabilitation in combination with other methods along the way.

Standard of treatment effect

1. Speech assessment: By Beijing Hospital " Method to Check Chinese Language

Speech Loss" (ABC Measurement Table), patient evaluation; listening, repeating lecture, reading aloud, understanding of writing and calculating.

2. Evaluation of the ability to communicate in everyday life

Method use to examine the capability of communication skills (The Chinese functional communication) CFCP, communication skills of patients in everyday life is divided into 5 parts. 25 listed

CFCP scoring:

Mild loss should have the total score of less than 200 points.

Moderate loss should have the total score of less than 150 points.

Severe loss should have the total score of less than 100 points.

3. Assessment of aphasia level

By using standard aphasia grading (Boston Diagnostic Aphasia Assessment. BDAE) (Grades 0-5):

Level 0: Expression and understanding are both obstacles.

Level 1: Ability to speak and understand little vocabularies.

Level 2: Ability to express and understand simple words, but often make grammar mistake.

Level 3: Expressions and understanding of everyday vocabulary are rarely wrong. Level 4: Extreme complex language is expressed well through patients. Level

5: Expression and understanding have a little difficulty, but the patients are able to noticed by themselves.

Evaluation of treatment

Patient pre- post treatment with all methods has been use “The Chinese functional communication test” method. The CFCP scoring method.

Proceeded the test to evaluate the language proficiency assessment. Basic treatment: Score 90% or more, CFCP total score of 50 points or more. Clear results: Score between 60-90%; CFCP total score of 36 points. Effective: Score between 30-60% CFCP total score of 26 points, or language spoken 10 points and above.

No result: Score less than 30%, CFCP total score of 10 points and below or no spoken language.

1. Criteria for assessing daily activities:
Using Barthel index score

(People’s Republic of China and Ministry of Public Health “Chinese Clinical Standard For Medical Rehabilitation” Beijing: Publisher. Huaxia 1999: 220-231) Assessing daily activities 100 is normal score: ≥ 60 points basic self-care, 41-59 points moderate score for abnormal life that need assistance, 21-40 points severity disorder life must rely on, ≤ 20 points life are fully to rely on.

2. Evaluation of neurological impairment:

Use of United States, National Health Facility Evaluation of National Institution of Health Stroke Scale (NIH)

Statistical

Microsoft Excel was used to collect data to create a database containing all of the input data into SPSS13.0 for statistical analysis. Mean \pm Standard deviation ($\bar{x} \pm s$) pre-post treatment using the t-test, $p < 0.05$ was considered statistically.

Results

1. General conditions of the patient: 192 patients

In patients with stroke in the hospital that consistent with the diagnosis according to standard admission criteria and ejection criteria 83 patients were enrolled. Out of 83 patients, 47 were male patients and 36 female patients. The mean age was (65.32 ± 9.63) years old. Mean disease duration was (42.77 ± 13.26) days.

2. Improved speech skills after treatment.

Language Assessment: See Table 1.

Table 1 Change in heaviness in speech using ABC score pre-post treatment of patients.

List	Before Treatment	After Treatment	P Value
Listening Understandable	51.72±15.36	65.77±21.42	<0.05
Repeating	46.53±9.72	74.91±13.61	<0.01
Speaking	21.37±5.74	34.03±12.56	<0.05
Reading aloud	29.98±10.13	42.72±18.33	<0.05
Reading	48.22±20.05	57.88±23.42	<0.05
Calculating	42.70±21.11	58.41±22.76	<0.05

From table 1 It is clearly shown that post treatment of patient's with aphasia have been improved.

Patient comparison pre-post treatment in using of speech skills: Table 2

Table 2 Pre-post CFCP treatment ($\bar{x} \pm S$)

No. Of patients	Before Treatment	After Treatment	P Value
83	119.67±68.29	188.77±81.30*	<0.05

Note: * Before treatment P <0.05

The statistical analysis after CFCP treatment has improved significantly compare to before treatment (P <0.05).

Evaluation pre-post treatment for aphasia condition: Table 3

Table 3 Comparison of scores pre-post treatment for aphasia.

	Level 0	Level1	Level2	Level3	Level4	Level5
Before treatment	11	19	22	14	6	11
After treatment	3	6	11	13	25	25

Table 3 can be seen that post treatment of patients with aphasia have been improving significantly.

Evaluation: Table 4

Table 4 Performance Testing

n	Fully recovered %	People (%)			Rate of Effectiveness %
		Obvious Result %	Affective %	Not Affective %	
83	4 (50.60)	21 (25.30)	10 (12.05)	10 (12.05)	87.95 %

3. Daily Use (BI Index) to improve the situation: Table 5

Table 5. After treatment change in patients with BI index ($\bar{x} \pm S$)

No. of patients	Before Treatment	After Treatment	Variable Value	P Value
83	50.2±20.4	86.2±19.0	36.0±20.5	<0.05

From Table 5 It can be seen that after the treatment the quality of daily life have been improved.

4. Improvement of nervous system (NIHSS): Table 6

Table 6 after treatment in patients with changes NIHSS scores ($\bar{x} \pm S$)

No. of patients	Before Treatment	After Treatment	Variable Value	P Value
83	8.1 ±3.0	3.8 ±2.7	4.3 ±2.3	<0.05

Table 6 can be seen. After treatment for impaired vision. The nervous system is clearly improved.

Discussion

1. Condition on post- cerebral infarction aphasia in the Western Medicine perspective

Cerebral infarction also known as Cerebral Ischemic Stroke is caused by several reasons of brain damage that further causes cerebral thrombosis, obstruction or vessel narrowing leading to lack of blood and oxygen. As a result the affected brain tissue get lack of blood and oxygen supply making the brain cells around the area become dead cell. It is a bad prognosis and high mortality rate.

After stroke occurs it usually accompanies with destruction of the nervous system, aphasia disorder is commonly found. When the disease has taken place language is defected and brain tissue is destroyed resulting in impediments, understanding and the loss of ability to communicate. (Zhang, Y. , W , YJ . , Zhu , YL . , Ma, RH. ,2005).

The key is to reduce the ability to use terminology, the use of grammatical errors etc. Condition of aphasia can be divided to Broca type and Wernicke type. Patients have inability both in spoken and written languages, difficulty in speaking and inability to speak at all, difficulty in repeating words and unable to follow the instruction, inability to call an object or unable to call an object at all. Broca is most commonly seen language impairment after a high risk of stroke both domestic and foreign reports are up 30% and above. (Pedersen PM, et al. ,1997; Li , HL. , LIU, YL. , Ren,L., and other. ,2003; Xu, ZY. , Chen, JL. ,2001).

Language barriers affecting the ability of patients to communicate also reduce the quality of life of patients and social skills. Currently, medical research in treating of aphasia disorders majority use rehabilitation with language training together with psychology to measure. Using of photography (iconography) bring the disease condition to aphasia with anatomy. Traumatic brain injury are link together. (Zhou Y, Chen HY , Wang LM, the column Han , Wang ,YJ. ,2006).

Traditional Chinese Medicine treatment of this disease in the past year are considered successful. Most treatments include Chinese medicine and acupuncture etc. without pausing to do research study on Chinese medicine. Traditional Chinese Medicine for the treatment of post- cerebral infarction aphasia make it even more acceptable. (Chang, JL., Gao,L., 2006).

2. Causes and mechanisms of post- cerebral infarction aphasia occurs according to Chinese Medicine point of view

Chinese medicine considered occurrence of Zhong feng (中 风) or stroke of the patient usually caused by the weakness of the body, deficiency of qi, blood, heart, liver, kidney, yin and yang. Along with anxiety, anger, alcohol, too much consuming or too much sexual activity, excessive work. Invasion of pathogens from outside causes impairment of qi and blood, skin and tendons lose of nourishment. Hyperactivity of liver yang and yang transformed into wind causing adverse flow of qi and blood. Fire and phlegm close the orifices leading to upper excess and lower deficiency. Yin Yang does not work together making it dangerous. Condition of aphasia "comes from modern western medicine main symptom of stroke which cause is aphasia symptoms of hemiplegia of one side. Which is not mentioned in ancient Chinese literature. However, the disease of speech impediment after stroke happen in Chinese Medicine is known as "stiff tongue", "stuttering", "cerebrovascular disease", "stiff jaw", and so on.

3. Analysis of Acupuncture Treatment and Therapies of Condition of post- cerebral infarction aphasia

3.1 Acupuncture to open orifices and awaken the brain. (醒脑 开窍)

The concept of Professor Shi Xue Min emphasizes on "Shen" (神), especially "shen", in the broad sense refers to the brain, mind, spirit including other expression of the body which is control by "Shen". The basic mechanism of the disease occurrence is blood stasis, liver wind, phlegm turbidity is the factor that causes the closure of orifices. " When the orifices close shen are hidden it does not bring the qi with (窍 闭

神匿, 神不导气) "and" Brain is the sea of the bone marrow, and it is home of shen (脑为髓海, 为元神之府) ", and the brain in the skull is the source of the yang. All Yang meridian will flow through the head as well as Yin meridian also passes this way. All the meridians are interconnected in the head. The tongue is the window of the heart (舌为心之苗). Spleen and heart qi flow through the tongue. Heart meridian are connected especially with the tongue not just deficiency or excess wind, fire, qi and phlegm that causes post- cerebral infarction aphasia occurs making lack of malnutrition to shen leading to deficiency of bone marrow finally the original shen has been damage.

Intelligent brains can not function normally causes condition of aphasia. It is the causes of disease like stroke. Acupuncture point that are chosen is Neiguan which belongs to pericardium meridian this point helps to calm the shen and help qi flow. Adjust the tongue control with the use of Renzhong point to awaken the brain and open orifices. Sanyinjiao point to tonify liver, spleen and kidney yin meridian of all three and to dredge the orifices of the tongue. Fengshi, Wangu and Yifeng point are use to tonify the brain and spinal cord, it has the properties to open orifices. Changelianquan point is a special meridian point, the position is near the pharynx, useful for the tongue and to open the orifices, eliminate wind and phlegm. To tonify qi and blood, Jinjing and Yuye point are use. These two points are located near the veins under the tongue, left is Jinjing and right is Yuye, it properties is to dissolve phlegm, open orifices to help the speech.

3.2 Danqipiantan Capsules

Based on clinical experience over 10 years of Professor Shi Xue Min in the treatment of Stroke in ischemia condition. Ingredients in the formula are Huangqi, Renshen, Chuanxiong, Leech, Niu Huang, Xiyangjiao, Antelope bugs and Shichangpu (黄芪, 丹参, 川芎, 水蛭, 人牛黄, 羚羊角, 全蝎, 石菖蒲). This formulas has special effects on tonifying qi and blood, promote the flow of blood and break stasis, calm the wind and dissolve phlegm, open orifices and treat spasms. Outstanding feature of stroke is deficiency, blood stasis, wind and phlegm.

3.3 Rehabilitation of language communication training

Rehabilitation in practicing the speech, the most important is training the lips, tongue, throat and other organs associated with the use of sounds along with practice of listening, observing and writing. In order to rehabilitate language communication to stimulate loss of centralized language control. To increase the level of language and communication. (Shi ,XJ., Fang, JR. ,2006; Meijun, R. (2006). In this research study is the method of repeated stimulation. From light to heavy stimulation gradually, recognition of patients and combination in a variety of ways, lastly continue to balance.

This study included treatment with acupuncture using the technique of awaken the brain and open orifices. Medicinal use of Danqipiantan capsule and rehabilitation with speech training. Starting from speaking, listening, repeating, reading aloud, pronunciation, reading understandable, copying, depiction, dictation, and calculations

etc. to improve the language communication skills of the patients. Reduce the level of speech loss and increase the quality of life.

Conclusion

Therapeutic treatments include Acupuncture to awaken the brain and open orifices. Medicinal use of Danqipiantan capsules and rehabilitation with speech training. Can improve the function on post- cerebral infarction aphasia significantly. Enhances communication in everyday life and improved neurological function and clinical effectiveness.

Acknowledgement

The Study of Clinical observation of acupuncture therapy in the treatment of motor aphasia after cerebral infarction. Was supported by Suan Sunandha Rajabhat University's fund in the fiscal year 2018. The researcher would like to thank the executives, the director of Institute of Research and Development and the experts for all suggestions and supporting this achievement

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***Revolutionary Potential of Metaphors for English Language
Teaching and Learning***

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

Metaphors, in the form of visual symbols or stories have been long used by our ancestors to bestow their wisdom and belief to their children. It is essentially not a new tool in education field for it is long used to present ideas and to gain insights for generations. Metaphors help us describe, visualize, and make sense of the world around us. Recent studies highlighted how metaphors play prominent role in structuring thought and motivating everyday language. It is one of the major forces behind linguistic creativity and is not only used to create lexical domains, but also for grammatical constructions. A crucial mark in the study of metaphor from a cognitive perspective was established by Lakoff and Johnson in 1980 with the publication of their revolutionary book *Metaphors We Live By*. According to this view, human thinking is largely structured in metaphorical terms. The theory puts forward the idea that both verbal and non-verbal language used to express perceptions and feelings, as well as ordinary language, are significantly linked to our capacity to conceive one thing in terms of another (events, entities, concepts). Using exploratory research design, this paper investigates the possibilities of utilizing metaphors for English language teaching and learning and how metaphors may be used to develop learner's knowledge on English language and literature, as well as their own native cultures. A description on teaching practices and various literary sources upon metaphors are presented to offer the new insight on ELT issues.

Keywords: metaphor, education, ELT

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Introduction

The use of metaphor is unavoidable since the world we observe is not substantive, “there is no one-to-one correspondence between words and what we experience.” (Papin, 1992, p. 1256). Everything around us is filled with metaphors, especially in a form of language. In other words, we can say that naturally language itself is metaphor. They indeed play prominent role in structuring thought and motivating everyday language. Metaphor is one of the major forces behind linguistic creativity and is not only used to create lexical domains, but also for grammatical constructions. It holds significant part of communication, and is unique in each society. In his *De Poetics*, Aristotle wrote that “the greatest thing by far is to be a master of metaphor. It is the one thing that cannot be learnt from others; it is also a sign of genius, since a good metaphor implies an intuitive perception of the similarity in dissimilars.” (Garfield, 1986, p.316)

To our general knowledge, metaphors are used especially in literature and poetry, as a high form of artistic creativity. Metaphor in literary reading involves psychological processes and it is due to the fact that reception is a mental process that takes place on the basis of individual acts of reading. Such mental processes of meaning construction can be modelled up to help us analyze the text. Since metaphor deals with human cognitive capacity, we can analyze the phenomena from cognitive approach; “This cognitive approach to metaphor has grown into one of the most exciting fields of research in the social sciences, with psychologists leading the way for cognitive linguists...” (Steen, 1994, p. 3).

In the present time, researchers have started to acknowledge that metaphor is more than just an ornament that decorates language. There has been a growing concern in humanities that metaphors used in language shows some basic pattern about the way human brain works; they operate at multiple levels of analysis to provide insight into how we understand an organizational life. It may also reflect human language system and the systematic metaphors in our thought (Gavins and Steen, 2003, p. 9). By that reason, metaphors have gained prominent interest from researchers. The understanding of the role of metaphorical patterning in cognitive processes has driven cognitive psychology and cognitive linguistics to radical new insights in the study of the mind (Stockwell, 2002, p.105). Hence, metaphor is believed to be primarily conceptual, conventional, and part of the ordinary system of thought and language; “Upon investigation, it appears that many ordinary expressions and ways of representing the world rely on metaphorical mappings, even when most of us do not realize the fact.” (Stockwell, 2002, p.109) Metaphor has been regarded to become intelligible as a highly revealing instance of the human capacity for making sense.

Traditionally, and until today, metaphor has been long used by our ancestors to bestow their wisdom and belief to their children. The uses of metaphor are culturally embedded amongst different group of people and are embodied in their identity in everyday activity. In its initial uses, metaphors are also appears vastly in religions to embrace their faith in God or the greater power, and in early science to study the universe; “The illustrations in the Old and New Testament, the sacred writings of Kabbalah, the teachings of Zen Buddhism, the allegories in literature, the poetical images and the stories of the storytellers – they all use metaphor in order to argument an idea in an indirect and paradoxically, more fully understandable way.” (Csorba,

p.766) Metaphor can transform something considered to be complex or hard to explain, to become comprehensible and more 'real'. Metaphors help us describe, visualize, and make sense of the world around us. Hence, metaphor is essentially not a new tool in education field for it is long used to present ideas and to gain insights for generations in all societies.

As educators, we need to understand more about the obstacles that a subject has in order to provide more solutions to students' problems in learning. Metaphor can help to comprehend concepts that are difficult to reach. In science, metaphors have been long used to bridge the understanding of the metaphysical concepts including quantum theories. In language learning, the difficulty might come from the differences of culture, and therefore, the world view of the learners from the complex concept, such as foreign language grammar. Nevertheless, any educational metaphor is more or less associated with paradigms, ideologies and beliefs. The deciphered of the metaphor's hidden meaning, enables transactions between different contexts representation of the same order to improve its realities. The pedagogical metaphor can open doors to new worlds of comprehension in an educational and philosophical level.

Literature Review

Metaphor is a figure of speech. All metaphors consist of a source domain and a target domain and metaphor comprehension requires the listener to identify some kind of relationship between these domains. Therefore, one must be aware of a wide range of connotations for both the source and target domains, and identify those that are being referred to by that particular speaker in that particular context. Successful metaphor comprehension frequently involves making maximum use of the context.

The study of metaphor underwent a major shift since the publications of Lakoff and Johnson's *Metaphors We Live By* in 1980. They challenged the traditional view of metaphor with their basic premise of which is that metaphor is not simply a stylistic feature of language, but that thought itself is fundamentally metaphorical. Metaphor is no longer considered as a figure of speech, but rather as a figure of thought. The use of it is not limited within works of literature only, but to everyday speech and moreover to other areas outside linguistic. However, the cognitive view that metaphor is more of 'a figure of thought' emphasizes that it is a knowledge rather than meaning that is responsible for the interpretation of similarity which lies at the basis of process of understanding one thing in terms of another (Lakoff 1986 in Steen, 1994, p.11). Hence, they ushered a new theory of metaphor, a cognitive linguistic theory whose basic theoretical manifestation is conventionally referred to as Conceptual Metaphor Theory (Lundhaug, 2010, p.24).

Conceptual metaphors theory has become the earliest and most important theory in cognitive semantic approach. "Ever since Lakoff and Johnson (1980) it has been commonplace in cognitive semantic to say that metaphor is not a matter of 'mere language' but is something conceptual." (Crisp in Gavins, 2003, p. 99) Furthermore Crisp argues that "Conceptual metaphors typically projects experientially basic categories onto more abstract ones." (p. 100) In other words, conceptual metaphors are conceptual packaging of reality understood in their own terms because they have evolved to facilitate our everyday functioning in the world. Kovecses (2005) also

indicated that the analysis of metaphors in language could reveal a great deal of patterning. This strongly suggests that at least on an unconscious level, the linguistic metaphors also manifest elaborate structures.

Metaphor has scientific utility, it is a fact hardly ignored that science has been using metaphors in attempt to explain the natural phenomena around us; “Scientist, too, use metaphor to transform the objects of their perception.” (Woods, 2009, p. 10). Ricoeur in *The Rule of Metaphor* (cited in Woods) explains that the power of metaphor lies in its capacity to redescribe the world. Boyd in Ortony (1993, p. 538) also argues that genuine metaphors (analogies) are also fundamental to science, providing an occasion, “an irreplaceable part of linguistic machinery of a scientific theory.” The use of metaphor, nonetheless, are a bound in science; “Metaphor maybe inevitable and necessary to science and cognitively prior to scientific description, because of psychological factors in learning, inference-making, symbol-formation, and explanation.” (Hoffman, 1979, p. 406). By that reason, scientific language functions with the same complexity as literary discourse does.

Some models in the use of metaphors in science have been conducted through several well-known theories. In Biology field study, Darwin’s famous “entangled bank” metaphor from the *Origin of Species* has been used to explain the wondrous functioning of natural selection. In Physics, Albert Einstein’s metaphor of dropping stone from a moving railway carriage is used to explain his revealing theory of relativity and the curvature of space (Woods, 2009, p.13). The theory of science mostly evokes mental image, especially when they try to explain microscopic being that cannot be observed naked eye. Words traditionally considered as purely scientific and descriptive such as *electron*, *particles*, and *atoms* were not as transparent as we expected. Physicists believed that physics theory is tough to explain not because it is hard to grasp but because the language itself is not adequate to explain the marvels. Robert Frost strongly believed about the importance of metaphor in gathering around the data and material recalled Walt Whitman’s confidence that poetry can help the nation to understand the role of science in everyday life. Whitman plots the connection between the earth and celestial beings in *Leaves of Grass* metaphor: “a leaf of grass is no less the journeywork of the stars” (Woods, 2009, p.7-8). Both poets agreed that science must be brought to life, animated, and made beautiful; it is through the gathering of metaphors that makes such attempt possible. Despite its regard as scientific utility, some in philosophy of science and psychology doubted about the effectiveness of metaphor to formulate theories. They argued that we should avoid any ambiguities and vagueness of everyday language. In other words, they maintained that scientific logical should be purely logical-rational affair.

Methodology

This study uses exploratory research design as the main method in order to provide several examples of the using of pedagogical metaphor in English language learning. It intends merely to explore the research questions and does not intend to offer final and conclusive solutions to existing problems. This type of research is usually conducted to study a problem that has not been clearly defined yet. It has been noted that exploratory research is the initial research, which forms the basis of more conclusive research since it tends to tackle new problems on which little or no previous research has been done. Hence, this article viewed two earlier researches

about the use of media and material in English language teaching done by English lecturers in Universitas Brawijaya, Indonesia, from the perspective of metaphors in education.

Visual Metaphor for English Poems

English literature is compulsory subject for students of English education and literature major in ESL/EFL countries, including Indonesia. The study of English literature which is generally divided into poetry, prose, and drama, are usually given to the second and third year of college students. However, poetry is commonly found as the most challenging subject to teach and to learn amongst any other genres. This problem is commonly appeared amongst the students for the lack of interest and difficulty in comprehending the text.

The problem in learning English poetry is not only identified in Indonesian university but in other country where English serves as second language or foreign language. Hirvela and Boyle (1988) quoted in Khatib (2012) report that only 6% of the Hong Kong Chinese students who were involved in the survey favoured poetry more than other literary genres and 73% of them found poetry the most difficult and intimidating literary form. The problems in learning poetry for ESL/EFL students are due to its complex language and infamous interest for the students as well as for the teachers. Moreover, the problem of learning poetry is also common in the countries where English serves as the main or native language, as I. A. Richards noted more than half a century ago in his seminal book *Practical Criticism* (1929), the chief problem faced by the student of poetry is “the difficulty of making out [the poem’s] plain sense” (Hoepfer 1990, p.82).

Hence, it is found that the focal problem in learning poetry is not mainly caused by the cultural differences, but simply in realizing and visualizing the images of poetry or the figures of speech. It is important to see poetry in its total framework at first since in order to understand poetry content, one must imagine or visualize the figure of speeches that occur in a poem. It is a well-known phrase that a picture says a thousand words and a poem paints a thousand pictures. In one hand, every visual art speaks something about the characteristics of particular existence, while in the other hand; a poem is a verbal art that contains figures of speech that needs to be visualized in mind.

A visual metaphor is the representation of a person, place, thing, or idea by means of a visual image that suggests a particular association or point of similarity. It’s also known as pictorial metaphor and analogical juxtaposition. According to Robert N. St. Clair in *Visual Metaphor, Cultural Knowledge, and the New Rhetoric* (2002), visual information is also another way of knowing, and it too is virtually invisible in the modern culture. St. Claire also pointed out that the metaphor of verbal form is highly significant in Western culture and has dominated centuries of social and cultural epistemological scripts. Regardless the existing assumption, Frederik in her book *English Poetry: An Introduction to Indonesian Students* (1988) stated that the best way to learn foreign language is actually through learning their culture since culture is reflected through the use of language (also Kramsch 1998, p.3). To help Asian English learners get better understandings of what the modern western life philosophy

is and how western people form their culture in their society, it is essential for EFL teachers to teach culture by metaphor in EFL class.

As a matter of fact, the tradition of relating visual and verbal arts has been dated back to the ancient era. Horace, a Greek philosopher in his book *Epistles* writes to his fellow “*ut pictura poesis*” which means, poetry is like a painting. These lines are often cited as the foundational text establishing a connection between visual and verbal arts (Corn, 2008): “Horace, in his *Epistles*, writes a verse letter to his friend Pisos, the opening lines of which develop the metaphor of painting as a means of criticizing arbitrary combinations of incompatible components in a poem. (This is the third letter of Book II of the *Epistles*.)”

Kehl (1978) states that any work of literature has visual characteristics because of the inherent power of words to evoke visual image, “to understand words, it seems to be natural and necessary for the mind to translate them into visual images; conversely, understanding visual images seems to be enhanced by “translation” into words” (p. 3). In other words, in the realm of literature, image essentially resides in poetry, prose, and drama. All that it takes to realize this is the imagination of the reader in relating the images to get the whole ‘picture’ or idea. In drama we can see the play performance visually, in prose we could have glimpse of picture that depicts certain scene in the story going on, while from poetry we get imagery words with a much comprised idea: “Images have always been important in poetry because they force us to become sensually involved in the experience of a poem. An image is generally recognized to be any particular arrangement of words which awakens a sensory response on the part of the reader.” (Thompson, 1970)

In the past time, some English poets also painted their own poems to emphasize the images of the poem. William Blake one of the famous poets from Romantic Age, is one of the poets who paints some of his own poems. Although he was unrecognized for his talents during his lifetime, Blake is now considered as a seminal figure in the history of poetry and visual arts. Aristotle also argues that art is mimetic which means that it is mirroring life; therefore, art is the imitation of life. Since art is imitation, it never has the complete elements of reality “The work of art, although an illusion of reality, represents a heightened form of reality, a “true lie” (Kehl 1978, p.10). Furthermore Kehl wrote, “Neither kind of art is, of course, identical to life. A painting of a chair is not the same as the chair...” (p. 2). The principal works in the same way for selecting the ‘right’ picture for visualizing the selected poetry. Teachers might likely to choose the most suitable and accessible visual arts whether in form of picture, photograph or painting. The standard of choosing a suitable picture therefore, can be traced back to the elements of the particular poetry that is going to be discussed or analyzed. The poetry elements here refer to the ‘visual’ ones, which is the figures of speech. They can be found in the figurative languages of poetry, more precisely, the imagery that mostly dominates the major theme of the poem, for a special kind of imagery employed by poetry and painting alike is the metaphor which is derived from a Greek word meaning “vehicle,” it transports us from the realm of one object into the realm of another” (Kehl 1978, p.3, Panofsky 1982, p.12). Nevertheless, any picture could be used to represent the reality depicted in poetry as long as the picture could serve as a suitable informing image for the relationship between poetry and the visual arts and considerably could trigger the imagination of the students.

Even after the use of visual image students might still have different interpretation for the various experience and knowledge in poetry and in life: “The incorporation of both visual and verbal resources into a narrative text has the potential to extend the narrative repertoire and to provide greater differentiation and/or greater depth of experience depending on how well realized the text is as a whole.” (Doloughan 2011, p.26) However, by using visual images, students are guided to comprehend the content of poetry without straying too far from the imagery given in the poem; the use of visual image could give way for students to embrace the total framework of poetry, to get its main idea, and to interpret it based on the actual imagery stated in the poetry.

Film Metaphor for English Grammar

Grammar is central to the teaching and learning of languages. It is also one of the more difficult aspects of language to teach well. Many people, including language teachers, hear the word "grammar" and think of a fixed set of word forms and rules of usage. They associate good grammar with the prestige forms of the language, such as those used in writing and in formal oral presentations, and bad or no grammar with the language used in everyday conversation or used by speakers of non-prestigious forms. Grammar is urgently needed to master by all learners of any languages since it becomes essential principles to make grammatical sentences, phrases, or words (Thornburry, 1999 p. 1) In other words, mastering grammar is the foundation in the proficiency of a language. In general, tenses is the fundamental for English grammar. Furthermore, the theory of teaching tenses is also inseparable from the theory of teaching Grammar. Thornburry (1999, p. 1) says that Grammar is part of a study of the shape (structure) that exist in a particular language. Grammar is essentially trying to explain how the form of a language that can be accepted, so it is important for the learners to study the forms of grammar of a language in order to facilitate them in understanding the meaning of a sentence in a language.

Implication of teaching grammar is inseparable from the utilization of instructional media. Research conducted by Sandhya and Bhuvaneswari (2014) found that the use of media as a tool for teaching Grammar could facilitate a better teaching. The implementation of learning techniques is still insufficient without the use of media in order to support the success of teaching grammar in the classroom. Moreover, as mentioned previously that instructional media has many types and forms, one of which is now much in demand is the use of video. There are many reasons why the use of video as a medium of learning a language is strongly recommended. Harmer (2004, p. 282) explains some of the reasons as to why the language teacher is advised to use video as a medium of learning and teaching. The first is that language learners not only hear the language they learn, but they also look at the context directly from the video being played. Video will be a marvelous medium that represents expressions, gestures and other visual forms. The second is the knowledge of cultural differences. Video will enable students to see situations outside the classroom without having to leave the classroom. The third is learning material in the media would be easy to remember because it is fun. Fourth, the video can enhance students' motivation and interest in learning. It is as described previously that students not only learn how to see, but also listen, and it will be interesting for them so their motivation to learn will also increase.

Mastering English Grammar becomes a necessity for English Language Education Program in Faculty of Cultural Studies, Universitas Brawijaya because, ideally, they must be equipped with English Grammar competence when they are graduated as *Sarjana Pendidikan*. However, the fact shows that many students of the last semester are still weak in mastering grammar. This is documented on their undergraduate thesis writing. To support this finding, the researchers distributed questionnaire consisting of two open-ended questions dealing with the most difficult material in learning grammar and the reason why it is determined as the most difficult one. The respondents of the questionnaire were all of the second semester students in academic year 2015/2016 who were taking Fundamental English Grammar. The result of the questionnaires revealed that 72 % of the students said that the most difficult material was tenses. Further, they claimed that they still found difficulties in understanding English tenses especially on how to differentiate verb tenses in different context of sentences and how to use subject verb agreement although they have already got such materials since they were in high schools. (Unsiyah et al, 2016)

The lecturers of English Language Education Program in Faculty of Cultural Studies, Universitas Brawijaya have been trying to increase students' knowledge and skills on producing not only fluency and meaningfulness but also accuracy on grammar use. To achieve the learning goal, the researchers as the lecturers of the Program proposed to develop video as an instructional media to teach English tenses in the form of film. The researchers believe that this kind of video is considered as appropriate instructional media to deliver English grammar tenses because it consists of various characters that perform particular expressions and gestures in particular plot and setting.

The product developed was video for teaching English tenses entitled "Better Grammar" for students of English Language Education Program. The duration of the video is precisely 30.12 minutes and based on its original script, it is divided into 9 scenes. The script was design to fit the basic 12 English tenses into an interesting story plot for early semester students of Higher Education in Indonesian context. The tenses are: Simple Present Tense, Present Continuous Tense, Present Perfect Tense, Present Perfect Continuous, Simple Past Tense, Past Continuous Tense, Past Perfect Tense, Past Perfect Continuous, Simple Future Tense, Future Continuous Tense, Future Perfect Tense, Future Perfect Continuous. The movie script emphasizes on the comprehension of the concept of each tenses and to visually illustrate the explanations. (Unsiyah et al, 2016)

The summary of the movie script is about an English Education Student (Fajar) who finds his lack of understanding of English tenses in the Grammar class. Having learnt English for many years since Primary school, he realizes that he still is not very adept in using English tenses in practice. He gets distressed until he finds that there is another student (Maharani/Rani) who seems to have better understanding about tenses. He then tries to make acquaintance with Rani and ask her favor to help him in understanding English tenses. Rani agrees and they develop friendship as they study together. The Past Tenses (Simple, Continuous, Perfect, and Perfect Continuous) are illustrated through the experience of Fajar in his past, how he came to dislike English subject back in Senior High School and how it has affected his learning ever since. The Present Tenses are illustrated when they continue to study together in the park in

another day. The Future Tenses are explained within Fajar's letter for Rani as he is about to leave for Sydney for 3 months for a student exchange program.

The video development on teaching English tenses as supporting visual teaching media is considered appropriate for it helps lecturers in delivering materials on English tenses since these materials as parts of Grammar are known as one of the most difficult aspects of language to teach well. Thornburry (1999, p. 1) says that Grammar is part of a study of the structure that exists in a particular language. Grammar is essentially trying to explain how the form of a language that can be accepted, so it is important for the learners to study the forms of grammar of a language in order to facilitate them in understanding the meaning of a sentence in a language. It is also supported by Sandhya and Bhuvanawari (2014) who state that the use of media as a tool for teaching Grammar could facilitate a better teaching. The implementation of learning techniques is still insufficient without the use of media in order to support the success of teaching grammar in the classroom.

Conclusion

This study highlighted the importance of analogical reasoning in learning language and the specific use of metaphorical media as vehicles for learning English language. Researches show that the uses of metaphors served educational purposes as teaching media and produced foundational knowledge in learning English grammar for Indonesian students. Additionally, the use of metaphors was an opportunity to promote teacher awareness of his/her own teaching since metaphor production needs a deep level of knowledge in a field. In this study the authors view metaphors as vehicles and apply it to draw upon English language teacher's methods and media in making their explanation visible. This study shows that metaphor can provide communicative and facilitator character of learning. It is possible to conclude that analogical reasoning and metaphors are vehicles for learning as it is recognized their pedagogical power to enhance students motivation and to deep knowledge production and acquisition. To conclude, it seems that metaphors and reasoning by analogy are important to introduce students to a scientific field, but they are not expected to remain valid in the records of scientific production, at least those who are novices at it. Further studies need to be done to prove the effectiveness of metaphorical media and methods in language learning, especially English for foreign languages.

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International Mindedness to Survive & Thrive: Challenges & Possibilities

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

International schools, particularly under the auspices of the International Baccalaureate Organisation (IBO), are unique hot houses of K-12 Education. These 4937 schools are situated in various contexts across the world and are required to deliver a challenging curriculum that is concept based and inquiry driven. At the middle years and diploma level, this includes compulsory components of critical thinking, action service and academic research. As teacher trainers who are exploring global citizenship and international mindedness, we hope to share the possibilities and challenges that face all institutions grappling with the delivery of authentic, transferable skills for the 21st century. This presentation explores the challenges and the possibilities of using the loose guidelines provided by the IBO, to build an honest, robust and resilient program of exploration. Students need to be challenged to use their critical thinking as a framework for intercultural understanding and global engagement. The possibilities of building a multicultural society must be explored through the use of multiple languages as the repositories of culture and knowledge across diverse peoples. The challenges include using technology as a tool to foster the possibilities of diversity rather than as a tool of standardisation and limitation. The challenges of creating personal identity in a globalised world through language, the arts and history need to be addressed. Students need to be actively taught to foster resilience and security through connecting mind, body and the spiritual self at a time when mental health among young adults, is particularly precarious.

Keywords: multilingualism, intercultural understanding, global engagement

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Introduction

The aims of this paper are threefold:

1. To introduce the imperative for international mindedness. Why it is important now, more than ever before: 18 years into a new century. It was only 100 short years ago when World War 1 took place and there are as yet cautionary lessons that have not fully been learnt. Humanity has always faced the great crossroads of self-destruction versus self-fulfillment, the choice between merely **surviving** instead of **thriving**. Yet never more urgently have we had to address it than now. Except it is no longer a choice, it is an imperative based on the fact that other roads are closing themselves off for us. It is therefore essential to change and preserve what we hold most valuable on the planet and none of these possibilities can afford to be easy or superficial.
2. What information is already available - what would work? What signposts, gateways and clues are already out there? What are the messages learnt by organisations like the IBO which have been attempting to maximise the possibilities of Int Mindedness and global citizenship for the past 50 years?
3. Each signpost, each clue points to both possibilities and challenges. We can choose!

International mindedness if taught through inquiry into the self and critical thinking that takes into account other perspectives, could lead to greater identity for all as well as resilience. Perhaps the paradigm shift required in education is genuinely to create a generation of stronger, highly aware,, service-minded and compassionate young people who are prepared to engage with the world, committed to systemic change.

Making the case for International Mindedness: Why is the imperative NOW?

- **Carl Sagan: The Pale Blue Dot:** Carl Sagan, Nasa Scientist, space explorer and writer of *Cosmos* made this profound case on what it means to be human on earth, a mere 2 years before he died in 1996. As Voyager 1 in 1990, left our planetary neighbourhood on a mission of unmanned discovery for the fringes of the solar system, Sagan wrote these words about the final photograph it sent of Earth, a faint smudge of blue, caught in a sunbeam:

“That’s here. That’s home. That’s us. On it everyone you love, everyone you know, everyone you ever heard of, every human being who ever was, has lived out their lives. The aggregate of our joy and suffering. Thousands of confident religions, ideologies and economic doctrines, every hunter and forager, every hero and coward, every creator and destroyer of civilization, every king and peasant, every young couple in love, every mother and father, hopeful child, inventor and explorer, every teacher of morals, every corrupt politician, every ‘superstar,’ every ‘supreme leader,’ every saint and sinner in the history of our species lived there - on a mote of dust suspended in a sunbeam.” -Carl Sagan from a lecture delivered at Cornell University, 13th October 1994.

It is possible here to begin to make the case for what a number of famous scientists, astronomers, evolutionary biologists, philosophers and writers have been saying for many decades. The possibilities and challenges arise from the fact that our biological, chemical and evolutionary realities are scientifically documented and now proven to us in the 21st Century in unprecedented ways. This is here, this is us, this is now!

Carl Sagan also said, *'...that astronomy is a humbling and character-building experience. There is perhaps no better demonstration of the folly of human conceits than this distant image of our tiny world. To me, it underscores our responsibility to deal more kindly with one another and to preserve and cherish the pale blue dot, the only home we've ever known.'*

- **Bill Bryson: A Short History of Nearly Everything:**

Bryson addresses our molecular structure and some facts that Science has now proven to us about the basic chemical and atomic building blocks of human composition. *'The bad news is that atoms are fickle and their time of devotion is fleeting-fleeting indeed. Even a long human life adds up to only about 650,000 hours. And when that modest milestone flashes past, or at some other point thereabouts, for reasons unknown your atoms will shut you down, silently disassemble, and go off to be other things. And that's it for you. Still, you may rejoice that it happens at all. Generally speaking in the universe it doesn't, so far as we can tell.'* Bryson, B. (2013).

There is a humbling atomic imperative that Bill Bryson gives us. An hourly deadline to create a sense of some urgency if we are to impact and influence the world we live in and the wonder of the human condition. In Zen, Buddhist and Hindu philosophy, being born human in this life comes with a set of unique privileges and responsibilities. These are our possibilities and while they are not without challenges, we must use our talents to achieve our full potential: essentially to improve our own life that of others. The terrifying challenge is that we have but finite hours in which to achieve everything that our generation - even as teachers or educators aspire to achieve.

- **Robert Sapolsky- Humans are a standard off the rack mammal:**

Primatologist and neuroscientist Robert Sapolsky says we are just *'a basic off the rack mammal...we've got the same basic building blocks and plumbing...but we use it in ways that are unprecedented.'* (Sapolsky, TED Sept 2009). What are these unprecedented ways? We can practise acts of senseless, illogical and unprovoked violence or cruelty but equally illogical and awe inspiring acts of **altruism** and **human empathy**. We have indeed the unique theory of mind: the ability to think about thinking and through this to be **able to change our own circumstances** and that of others by simply rethinking it differently.

- Evolutionary biologist, Mark Pagel tells us that it is **not necessarily just tool use** but **Language** that might have transformed humanity (Pagel, TED Global, 2011). The possibilities of language to transform humanity still exist and when used for positive effects, still astound us. For 3.5 million years we have survived as humans in a food web and a biosphere where we were certainly not the fastest or the fittest of species. This miraculous evolution to be the sentient species we are today has been

through social evolution and visual theft or indeed social cooperation (Pagel 2011). The thread of language connects us to our primeval ancestors as they struggled to survive and provides us with both clues and possibilities today. How might we use our languages and our collective experience of being human to collaborate and improve ourselves?

Can we challenge ourselves to use social media and technology to thrive and explore our myriad languages and their ways of knowing and being? Multilingualism is a fact, a right and our greatest resource, (IBO, *Language and Learning in IB Programmes*, 2011). Could it be that what we really need is to use technology to translate, for languages to thrive rather than disappear? Could technology increase multilingualism and intercultural understanding rather than shrink into a monolingual, English based code that expresses artificial intelligence rather than the rich variety of the organic human impulse?

Pagel reminds us that somewhere in our evolutionary past, human beings made a decision towards, '*cumulative cultural adaptation*,' to move away from caves and small family groups towards larger village settlements in order to survive and thrive through this process of sharing and learning. Surely our greatest feats from the invention of the decimal system, laptop computers to mobile phones and space travel have come through communication and collaboration? Equally, have not our most dangerous acts of mutual destruction taken place when the sheer human potential to survive and thrive has been deliberately curtailed aborted? When communication, languages, cooperation and collaboration have been threatened by self-started human phenomenon like war, slavery, colonisation and genocide?

The unfulfilled possibilities of Star Trek:

In 1966, Gene Roddenberry thought it would be a good idea for there to be a science fiction television series that was about open ended space exploration. The fabled *USS Enterprise* was composed of a multicultural, gender balanced, multi-species crew whose mission was simply to explore, '*Space. The final frontier....to seek out new lands, new civilizations, to boldly go where (no one as opposed to no man! Corrected 1987) has gone before!*' The United Federation of Planets was in fact Roddenberry's idealised version of a successful United Nations which actually prevented war and promoted exploration and inter-planetary or indeed even intercultural understanding on a platform of mutual benefit, in fact to survive and thrive.

These are the possibilities of the *Star Trek*, a journey of discovery, not the *Star Wars*. The *Star Wars* narrative is simply a mirroring of what we have always had on earth - exploitation, good versus evil empires and renegade rebel forces, colonisation, monstrous struggle, cold wars, revolution, dog-fights in space and constant strife. *Star Trek* on the other hand was full of possibilities: of intercultural and even inter-species understanding, mutual appreciation and a search for mutual co-existence.

For those of us born in the last decades of the 20th century, in the delirious excitement of modernisation and the possibilities of a brand new century, there is now a

profound sense of disappointment. Yet eighteen years into the exciting 21st century, it is not a debate about interplanetary exploration that divides us but the polarising issues are gender, race and environmental destruction. Issues that the science has been saying for a long time are ‘no-brainers,’ issues that are as old as time itself. These are *still* the most burning issues in a world that seems very far indeed from achieving forays into space. Not only have we not had any more manned or indeed ‘woman-ned’ missions to the moon, we are still in profound disagreement on what it means to be human!

Our Ecological Disaster: Repair or despair?

Despite our great advances in technology and industrialisation, the finite, ecological Earth is sending us some strong messages and according to climate change scientists and activists, this warning has been available through various big data predictions, for over 70 years. We now have to sit up and pay attention to the weather forecast as there is every possibility that the earth is doing something unprecedented through weather and climate. Not only has every human being experienced what we like to call ‘natural disasters,’ like famine, drought, typhoons, hurricanes, storms, tsunamis and forest fires, these phenomenon are now here to stay. They show no signs of being the freak occurrences they once were. Additionally there is evidence to show that their menace has been amplified and exacerbated by some avoidable and strictly man-made phenomenon.

The word Anthropocene was first used in the year 2000 by Nobel Laureate Paul Crutzen, an atmospheric chemist came up with the term ‘Anthropocene’ to describe this weird geological phenomenon we are both creating and experiencing. It was defined as, *‘relating to or denoting the current geological age, viewed as the period during which, human activity has been the dominant influence on climate and the environment.’* (Crutzen, 2000).

Since then, the word ‘anthropocene,’ has rapidly been incorporated in the vocabulary of those concerned by climatological change and global warming. Yet it is used with pride and a sense of smug self-congratulation when in fact, the reasons to be satisfied are far from evident. This is definitely an age where human beings are the dominant effect on both climate and the environment but to what effect? Do we survive and thrive or do we err and merely contrive?

Our collective challenge, the moral and physical imperative to act has never been stronger, yet are we repairing or despairing? There is evidence to show that the next generation will have no choice but to act and act decisively to contain, repair and address the damage on a scale so far unprecedented. Therefore is our education preparing them for the skills required by this century? What are we in fact doing to create the knowledge, skills, values attitudes and belief systems required to tackle the problems of the present and the future? How in fact can students be trained or alerted to developing what PISA, calls ‘Global Competence?’ The IBO mission states, *‘The International Baccalaureate® aims to develop inquiring, knowledgeable and caring young people who help to create a better and more peaceful world through*

intercultural understanding and respect.'

Signposts, Possibilities & Challenges:

The IBO model of International Mindedness: The IBO has close to 4937 schools who follow one or all of their curriculum programs. All of these schools must therefore adhere to IBO's stringent '*From Principles to Practice*,' for the various programs they subscribe to. The foundations of these are the mission and vision that exhorts learners towards, '*the recognition of a common humanity, shared guardianship of the planet and contribution to world peace & development.*' In addition, the IBO offers a Learner Profile, a set of ten, key virtues that most befit an internationally minded person. These offer signposts and possibilities that educators around the world could use to guide and govern both the mundane and the procedural parts of an IB Education, in fact the principles that guide the practice.

The most important part of the IBO's mission and vision is of course the fostering of international mindedness. They highlight the three key dimensions of international mindedness in all their documentation. These are:

- Multilingualism
- Intercultural Understanding
- Global Engagement

It is worth investigating these ideas not only as dimensions but also as conceptual lenses through which to both frame and focus on international mindedness. They form the basis upon which to build the knowledge, skills, values, attitudes and beliefs that are necessary to develop a '*common humanity and shared guardianship*' of the planet. These ideas are in fact a useful foundation for all curriculum to grow from.

Multilingualism:

Multilingualism is now recognized as a fact, a right and a resource. A fact that best describes (as opposed to prescribes) the reality of '*a new linguistic dispensation*' (Aronin and Singleton 2008). This is a right as (supported by, for example, declarations from UNESCO on mother-tongue entitlement and government legislations for global language/lingua franca education). The IBO further cites multilingualism as a RESOURCE and an opportunity for engendering the ideals of international-mindedness and intercultural awareness. (*Language & Learning in IB Programs*, IBO, 2011).

There has been much debate and discussion about the challenges as well as the possibilities of multilingualism in the 21st century. School administrators are often quick to cite budgetary constraints and timetable impossibilities with accommodating on average twenty to forty mother tongue or first languages represented by the language profiles of most IB schools, especially in the Asia Pacific region. Yet these are the very schools who are equally quick to advertise the flags of these forty countries in their foyers and on their websites as a much more colourful and obvious

nod towards advertising international mindedness. Many IBO educators warn against the far too easy wins of the 6 Fs - food, flags, fashion, faces, festivals and fundraising that consume new international schools intent upon consolidating their international competitiveness. True multilingualism allows students to explore their education in multiple languages, investigating through language the diverse perspectives offered by language as a way of knowing and being.

The challenges around implementing mother tongue and school supported self-taught languages abound but they offer students sound intercultural perspectives that cannot otherwise be accessed. Wittgenstein famously said, *'the limits of my language are the limits of my world.'* It is therefore imperative for the IB spirit of international mindedness to explore the world through more than one language.

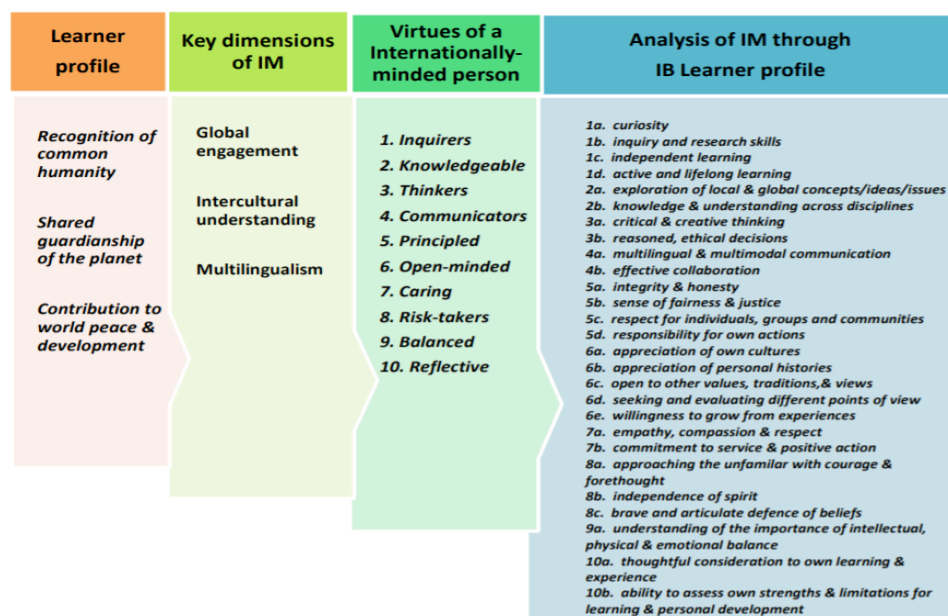


Figure 7 (Model 4) Pedagogies for forming the virtues of internationally minded learners

Figure 1: Source: *21st century international mindedness: An exploratory study of its conceptualisation and assessment.* Michael Singh & Jing Qi, 2013. Centre for Educational Research, University of Western Sydney.

Intercultural Understanding:

In the context of challenges presented by the teaching of multilingualism and intercultural understanding, it might be useful to reference an earlier more ancient era of possibilities. At a time when neither language or cultural understanding were a barrier to the spread of a whole set of beliefs and a way of life. Founded in the 5th century BCE, Buddhism spread widely from India across Asia, traversing Sri Lanka, Burma, Tibet, Nepal, Myanmar, Cambodia, Vietnam, Thailand, Korea and China before finally coming to rest in Japan. Translation of the Buddhist texts was not only prolific, it necessitated a spate of exploratory journeys between and across these lands. Intercultural and interlinguistic exchanges were rife. There seemed no barriers,

to either translation nor indeed the eloquent discussions, debate, question and consensus of Buddhist concepts that were the hallmarks of Buddhist Sangha teachings.

Equally architecture travelled with Buddhism. Beginning with the Indian *Toran* gates which marked the outer threshold of temples. These ubiquitous gateways that symbolised the human ascent from the mundane to the sacred, also travelled across vast distances. In China they were called *Pailou* gates and in Japan, they continue to be called the *Torii* and mark the entrances to most shrines. Both the *Toran* or *Torii* spread across Asia with the spread of Buddhist texts and doctrines. From Buddhist texts & architecture to the modern languages of technology, language can indeed become a tool for intercultural understanding and sharing the common goals of humanity.

As stated earlier, international schools can be superficial in their very attempt to be visibly international. They display multiple national flags with pride, have signage occasionally in other languages, faces of all racial groups - the United Colours of Benetton! Food is prominent at school fairs and dress up days are elaborate. Yet Qi and Singh were in their 2013 study of 21st century internationalism, asked if this was in fact a truly transformative education? Is this truly an international education that provides students with the tools through which to interrogate their own beliefs and values? (Qi & Singh 2013). Are we teaching students to be good 'tourists' of the world or good 'residents, citizens of the planet?' How do these global citizens at international schools, investigate who they are - under the surface of skin colour, food, fashion and festivals? These are the true challenges of an international education.

Global Engagement:

The OECD (2018) provides a useful definition of Global Competence that subtexts engagement: '*Global competence is the capacity to examine **local, global and intercultural issues**, to understand and appreciate the **perspectives and worldviews of others**, to engage in open, appropriate and **effective interactions** with people from different cultures, and to act for **collective well-being and sustainable development.***' Only by examining local, global and intercultural issues and understanding and appreciating the perspectives and worldviews of others can global citizens genuinely engage in open, appropriate and effective interactions across cultures. The final outcome of this, one hopes, is an ability based on sound skills, knowledge and values to take action for collective well being and sustainable development.



Figure 2: PISA Global Competence, PISA 2017.

The IBO insist within their core that students are involved in ‘Creativity Activity & Service’ a program of extra-curricular learning that must investigate local actions that might be connected to larger community, national or global goals of development or sustainability. These CAS Programs provide endless possibilities to indeed engage with transformative learning of skills or knowledge and service learning that could indeed interrogate values and belief systems, whether it is engaging with the problem of homelessness in seemingly affluent Hong Kong or working with youngsters afflicted by landmine injuries in Vietnam or AIDS orphans in Cambodia. Yet without a strong grounding in curricular rigour and the skills with which to process the experience, students might indeed experience these as one of ‘snapshot’ events that do not necessarily evolve into the ‘mindsets’ (Singh & Qi, 2013) that we hope might drive systemic global change in the future.

Critical Thinking & Critical Literacy:

Young people today need to realise that they are lucrative pawns in the games played by information tech giants and Big Data. They are documented and profiled and hugely manipulated by the social media platforms that they inhabit in various ways. Although they are digital natives, it is perhaps precisely because of this that their critical thinking and critical literacy filters need to be alert and well developed. This needs to be achieved by schools and colleges in explicit and implicit ways.

Information communication technology is a *tool*, a means to a greater end, not an end in itself. It has myriad possibilities and multiple challenges. How can we use it for the greater good, to take us *towards* our agreed goals rather than to create distance, disillusionment and chaos?

The challenge before educators is encouraging young people to investigate their identity as essentially human, organic creatures. We are neither plastic nor digital in

our fundamental cognitive, sociocultural, biological vibrations, as the most intelligent mammal on the planet. Yet as we frame ourselves as agents to act locally and think globally, we need to consider the role of technology in creating this 21st century identity. We need to reconsider our current paradigm of indiscriminate growth and competition which we are told is 'natural.' But is it indeed natural? Could we perhaps equally consider another natural paradigm which might serve us better? A paradigm which allows us to survive of course but to genuinely flourish and thrive? This is the paradigm of sustainable identity through symbiosis and acknowledged, compassionate, interdependence.

The Crisis of Youth Identity:

An increasing issue that is facing the globalised world is that of personal Identity. Teenagers talk about the parts of themselves that are Japanese or Indian or Chinese and the parts of them that are 'different.' In a world where they live away from their original home culture, what is their identity? Passports are just tools and are changeable identities. Multicultural marriages merge into a neutral globalised culture that harkens only superficially (food, fashion, festivals, faces & flags) towards the roots of either parent, which may be quickly forgotten in the urban, still industrial metropolis that they both inhabit. For children of these 'world cities' and these wonderful marriages, confusion and disorientation or indeed a sort of cultural schizophrenia abounds unless issues of identity are explicitly tackled by both parents. Who am I? How do I relate to my parents, my multiple cultures, my acquired nationality and the world? Which languages do I use to make myself understood? Where am I a citizen, where a denizen and how do I create identity online as a netizen?

Struggling with these questions, it becomes easier for today's youth to immerse themselves in an easy online world that provides candy cane sustenance through celebrity worship, brand loyalty and instant gratification as well as sporadic endorsement through likes, retweets and emoticons. Being a 'netizen' becomes by far the easiest and least demanding identity. It allows assumed personas, pseudonyms and photoshopped profile pictures, creating an ideal but un-lived fantasy world. Despite the constant almost intrusive contact offered through online relationships, youth are increasingly dissatisfied with the quality of their friendships and their emotional bonds, with each other as well as with the adults who oversee rather than guide or mentor them.

Some psychologists attribute the spate of mental health issues amongst the youth to the lack of meaningful, real, human physical contact. After all we are organic creatures inhabiting a mechanised world. Mammals operating within a virtual machine? Technology mutes our immediate instincts for who to trust, who to communicate our innermost thoughts with, who to support and who to reject. In the online jungle there are no markers that pick out friend from foe. Online tribes may not have real tribal affinities. Political, ideological likes and dislikes shift on a daily, even hourly basis following the constantly breaking, news cycle. Judgements and verdicts are passed through thumbs up and thumbs down, creating a culture of public shame

and humiliation in an arena where you are not really known or acknowledged for your 'common humanity.'

Thus the challenges of international education and international mindedness may seem to outweigh its possibilities. Yet, those very challenges offer opportunities to genuinely engage with the immediate task of raising a generation of learners to become resilient, self-sufficient and knowledgeable enough to take their rightful place on the planet as its future denizens. If indeed humanity is to make the choice to veer away from self-destruction towards emancipation and self-fulfillment, every opportunity needs to be fully explored.

Acknowledgements

I would like to thank Professor Carol Inugai Dixon for her profound and thoughtful reflections that pepper this paper. I am grateful for the endless wisdom stream she has shared over skype, long distance and then over coffee and bento boxes in Tokyo. My husband Raghvendra Singh has provided the critical, supportive sounding board for my early morning flurries of jumbled thoughts. His insightful questions and practical connections have been invaluable to clarifying my thinking. Finally I would like to thank my Principal, Christopher Sammons for the opportunity to explore the role of global citizenship and international mindedness in the wellbeing of our students.

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Japanese English Language Education at the Preschool Level: Institutional Possibilities, Home Options and the Utilization of Both—Part 1

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

The implementation of formal English language classes at the Japanese elementary school from the year 2020 has recently revived interest in early childhood English education programs among parents and educators. As more parents have become interested in providing children with language learning opportunities in English, so has the market—along with the number of English language preschools and internationally oriented nursery-kindergartens. Furthermore, the multitude and variability of these types of preschools and programs make it difficult for parents, given their individual family circumstances, to determine what is the best school for their child and his future. Knowing what kind of English language preschool programs are available can help inform parents to make sound decisions about their children's future. Simultaneously, when these programs or institutions are unaffordable or out of reach, by drawing upon proper knowledge about bilingualism, parents can implement an action plan for promoting long-term bilingualism. In the first part of this multi-paper series, the author outlines the current system of early childhood education in Japan. Then it considers factors that may be involved in the why the number of internationally oriented kindergartens and day nurseries have increased throughout Japan. Finally, it examines four different types of English language preschool programs and options that are available in Japan, simultaneously presenting a framework for analysis and evaluation of potential preschool sites for parents interested in raising their children bilingually or biculturally. In the subsequent essays, the author plans to discuss common myths associated with bilingualism and attempt to debunk these myths based on research. The multi-series paper will also consider ways in which parents can create consistency, form and manage effective language boundaries, maximize language input and positively overcome obstacles towards fostering and educating their child bilingually in the realm of the home. Simultaneously, the forthcoming versions of the paper will try to explore ways in which educational objectives and language input at the preschool can complement or help reinforce what is taking place within the home.

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Outline of Current Japanese Early Childhood Education and Care system

According to scholar Mariko Ichimi Abumiya (2011), the beginnings of both Japanese kindergartens (*youchien*) and day nurseries (*hoikuen*) date back to over a century ago in the late 19th century. Both have historically developed and co-existed under distinct systems, with kindergartens being associated with the educational sector and day nurseries linked to the welfare sector. Ishikida (2005) outlines, in its modern form, *youchien*, under the supervision of the Ministry of Education, Culture, Sports Science and Technology (MEXT) provide three to six-year-olds with approximately four hours of instruction each day. Day nurseries were founded under the guidance of the Ministry of Health, Labor and Welfare (MHWL)(formerly known as the Ministry of Health and Welfare) as part of social welfare programs for working parents and guardians. These facilities watch over and provide full-day care to children ranging from newborn babies, toddlers, and pre-school aged children up to the age of six. They were established to assist guardians who are unable to care for the children due to work commitments, health problems, or responsibilities that entail the care of sick or elderly family members.

In the year 2012, the Japanese government authorized three laws to enact *The Comprehensive Support System for Children and Childcare* (CSSCC). According to Abumiya (2015), this was a historic measure in the field of Japanese Early Childhood Education and Care (ECEC), enabling a comprehensive support system for child-rearing with sound financial resources to be implemented at the national level. In addition to the existing kindergartens and day nurseries, this enactment helped to establish a type of facility called Unified type ECEC Centers (*youjien*) which are regarded to be both a school education site as well as a facility for social welfare. Unified type ECEC Centers fall under the supervision of the Japanese Cabinet Office (CO). They are also capable of providing both instruction and care to children between the ages of zero to five.

Although the enactment of the CSSCC tries to streamline and consolidate some of the guidelines and resources for each of the facility types, there are differences especially in the curricular standards, the qualifications of its staff, and the number of instructional or care hours that the center provides for the children and their guardians. For example, kindergartens and kindergarten type ECEC Centers fall under the supervision of MEXT and are governed by the educational principles and guidelines outlined in the “*National Standards for Kindergartens*”. Simultaneously, in order to become a teacher at a *youchien*, one must pass the *Kindergarten teacher certificate* and become a *youchien kyoyu*, which is based on the Educational Personnel Certification Law. Day Nurseries or *hoikuen* have traditionally fallen under management of the Ministry of Health, Labor and Welfare and follow the standards mandated in the “*Guidelines for Nursery Care at Day Nurseries*”. In order to be hired at a day nursery or a day nursery type ECEC Center, one must obtain the certification of *Qualified childcare worker*, also known as *hoikushi*, which is dictated by the Child Welfare Laws and Regulations. For unified type of ECEC Centers, the curricula falls under the supervision of “*Curriculum for Education and Childcare in Unified Type of ECEC Centers*”. To oversee children between the ages zero to two, one must obtain the certification for *Qualified childcare worker* and for children between three and six, one must obtain a special qualification as an *ECEC teacher (hoiku kyoyu)*. Instructional and childcare times also differ amongst the three groups with

kindergartens providing a standard four hours of service per day, while day nurseries offering a standard eight hours of service and unified type of ECEC Centers supporting four to eight hours of care per day. In recent years, even kindergartens like day nurseries are allowing for extended hours of care to meet the needs of parents and specific family needs. Information regarding the three categories of facilities and its respective features have been summarized in Table 1: “Kindergartens, Day Nurseries and ECEC Centers in the CSSCC.”

Table 1: Kindergartens, Day Nurseries and ECEC Centers in the CSSCC
Adapted from: National Institute for Educational Policy Research (NIER.go.jp)

Category of Facility		<u>Kindergarten/ Kindergarten type ECEC Center</u> (School Education Institution)	<u>Day Nursery/ Day Nursery Type ECEC Center</u> (Child Welfare Facility)	<u>Unified Type of ECEC Center</u> (Facility positioned as both a School Education Institution And Child Welfare-Facility)
Governing Authority	Supervision	MEXT	MHLW	CO
	Funding	MEXT	(CO) Cabinet Office	
Standards		“National Curriculum Standards for Kindergartens”/ Unified ECEC Curriculum	Guidelines for Nursery Care at Day Nurseries/ Unified ECEC Curriculum	Curriculum for Education and Childcare in Unified Type of ECEC Centers
Target		Ages 3 to 6	From ages 0 to 6 (Those requiring childcare due to jobs, health etc.)	From ages 0 to 6, regardless of parent’s work status or other reasons
Qualification for the Staff		Kindergarten teacher certification (<i>youchien kyoyuu</i>)	Qualified childcare worker (<i>hoiku-shi</i>)	0 to 2yrs: Qual. Childcare worker 3 to 5yrs: ECEC Teacher
Education and Childcare Times/ Hrs		4 hours a day (since 1997: extra hours available)	8 hours a day (Longer → up to 11hrs)	4 to 8 hours a day, according to family situation.

According to the Ministry of Health, Labor and Welfare, there were a total of 22,909 Early Childhood Education and Care Centers in 2008 (*MHLW Press Release from 2015*). This number grew to approximately 32,793 in 2017 with over 2.5 million pre-school aged children enrolled in these types of facilities (*Press Release from 2017*). Abumiya (2015) summarizes her findings regarding the increase in numbers of Japanese ECEC Centers by asserting, “it shows a pluralistic and comprehensive image of how the ECEC is developing, in response to the current trends in families and the economic situation in Japan.”

Internationally-Oriented and English-Medium Instructional Kindergartens and Day Nurseries in Japan

For the purpose of this paper, we would like to shift our focus towards internationally-oriented kindergartens and day nurseries that may have different degrees of utilizing the English language within its curricula, instructional programs and/ or daycare routines. As the primary contributor to the *International School Times* webpage, Murata (2016) presents a framework for comparing nursery-kindergartens and preschools in Japan according to the language medium and the curricular focus of the institution. Table 2, titled “A Comparison of Nursery-Kindergarten and Preschools

in Japan” helps to cross-examine and conceptualize early childhood education in Japan in light of English language education.

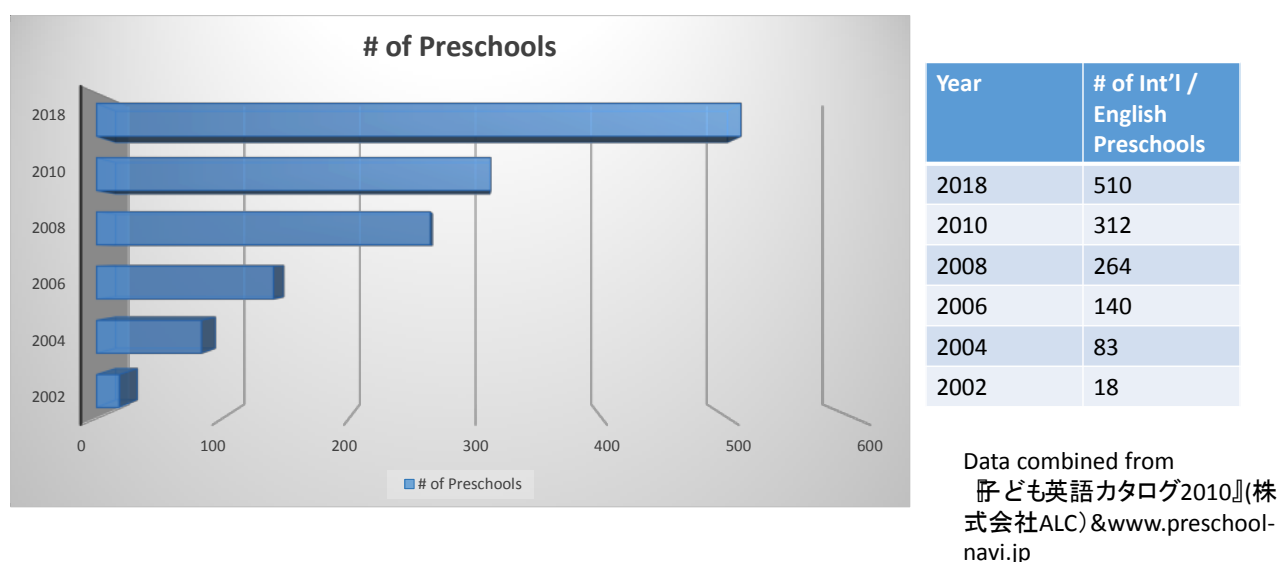
According to this table *hoikuen*, *youchien* and unified early childhood education centers which are also known as *youjien* are institutions in which are taught in or provide care in the Japanese language medium. Private international preschools and kindergartens, nursery-kindergarten programs of international schools, and privately-run English daycare centers and services can be grouped together in the quadrants where instruction, interaction and care occur with the English language medium. *Youchien* and to a certain degree, *youjien*, as well as private internationally-oriented preschools and kindergartens and nursery-kindergarten programs of international schools fall into the category of where the curricula and/ or daily routine emphasizes education. In contrast, the daily interactions, routines and curricula of *hoikuen* or Japanese day nurseries and English daycare facilities and services tend to be more focused on nursery-care. Simultaneously, *youchien* and private international preschools, nursery-kindergarten programs and kindergarten programs can be grouped together according to ages of children enrolled (ages three to six), while *hoikuen* and daycare centers in English or Japanese can be classified in another category according to ages zero to three.

Table 2: A Comparison of Nursery-Kindergartens and Preschools in Japan (According to Language Medium and Curricular Focus) (Adapted/Translated from: The International School Times, Murata, 2016)		
Curricula/ Daily Routine is Focused more on/ Emphasizes: Education (Age 3 to 6)	幼稚園 (<i>you-chi-en</i>) Kindergarten (Y o-u-jien 幼児園/ Unified ECEC Centers)	Private International Preschools and Kindergartens and Nursery-Kindergarten Programs of International Schools
Curricula/ Daily Routine is Focused more on / Emphasizes: Nursery-Care (Age 0 to 3)	保育園 (<i>ho-iku-en</i>) Nursery-Day care	Day Care in English
	Japanese Language Medium	English Language Medium

In order to determine actual numbers of international preschools, nursery-kindergarten programs of international schools and English day care facilities in Japan, the author consulted several Internet websites including the *International School Times*, the *Tokyo Association of International Preschools*, and the *Preschool Navi* as well as published resources such as the *Guide to International Schools in Japan* (Pover, 2009) and the *2010 Children’s English Language Catalog* (ALC publishing, 2010). A review of these resources helped to identify a growing trend since the early 2000s. According to the *2010 Children’s English Language Catalog*, numbers of internationally-oriented preschools, day nurseries and kindergartens as well as those that explicitly taught or provided care in the English language medium in 2002 were

estimated at a merely 18 schools. In 2004, that number rose to 83 and in 2006, 140 schools were accounted for by the publication. The growth trend continued where in 2008, the number of schools were reported to be at 264 and in 2010 the numbers further expanded to 312 internationally-oriented and English language medium kindergartens and day nurseries. In use of the *Preschool Navi* website's search function of locating internationally-oriented and/ or English language medium preschools which include both day nurseries and kindergartens on their portal, it revealed that there were a total of 510 schools (that ran half-day and/ or full-day services) in operation as of this year in 2018. Figure 1: Estimated Numbers of Internationally-Oriented Preschools in Japan organizes these estimates in graphic form.

Figure 1: Estimated Numbers of Internationally-Oriented Preschools



MEXT's 2003 "Action Plan", 2011 Revision and Visions for 2020 regarding English Language Education at the Elementary School Level

In 2002, the Ministry of Education, Culture, Sports, Science and Technology (MEXT) asserted in its official report ("Developing a strategic plan to cultivate "Japanese with English abilities": Plan to improve English and Japanese abilities, 2002) that "it is essential that our children acquire communication skills in English." Subsequently in 2003, it announced an "Action Plan" to cultivate "Japanese with English Abilities." This marked for the very first time in which MEXT clearly and specifically spelled out its goal to improve the standard of English language education at the national level. As a result of these announcements, the ministry introduced English classes at the elementary school level, in which fifth- and sixth-graders were given the opportunity to become familiar with English in a non-formal classroom environment, if schools decided to incorporate them into the curricula.

An article written by Mizuho Aoki in *The Japan Times* ("English heads for elementary school in 2020 but hurdles abound," 2016) explains further changes that

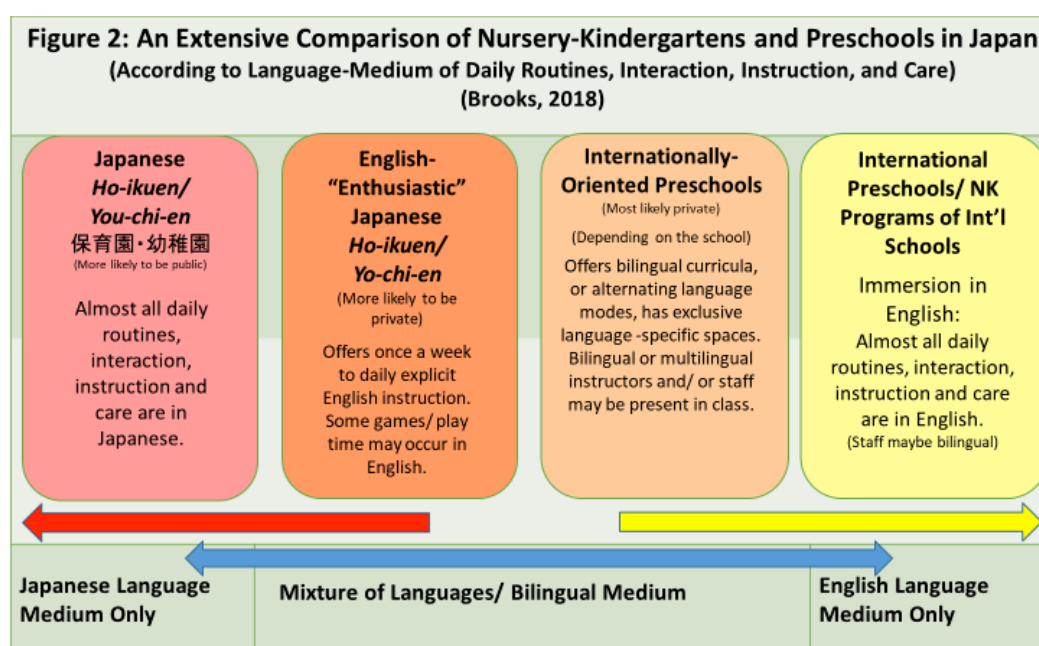
were made to the elementary school English education curricula in the year 2011. During this academic year, these formerly “optional” language introductory sessions were transformed into foreign language activity classes with more structure and regular scheduling. In its latest transformation, the same article outlines some of the more drastic changes that are going to occur with English language education at the elementary school level by the year 2020. After a two-year transition period, English will be taught as a formal class for the first time in public elementary schools. In 2020, English will become a required subject for fifth- and sixth-graders with the annual number of classroom hours doubling from the 35 to 70 hours. Reading and writing will also be taught explicitly in conjunction with designated textbooks and students will be formally assessed and graded. In addition to the changes with the upper level grades, foreign language activity classes will also become mandatory for third- and fourth-graders as well.

Going back to Figure 1, the graph show that the growth trend in the numbers of internationally-oriented preschools and day nurseries and kindergartens that are conducted in the English language accelerates after the year of 2002—the year in which MEXT made its crucial announcement in its plans for bolstering the English abilities of future generations. In each of the years beyond 2004, the number of schools steadily rises most likely indicating that there was a viable market need for these schools. One can hypothesize that, as the amount and degree to which English language education was incorporated into the elementary school curricula increased, so were the interest levels among Japanese parents with children of pre-matriculatory ages before first-grade amplified as well. One possible interpretation is that as parents realized that more English was going to be incorporated even at public elementary schools, more parents wanted to give their children a “head-start”. Other factors such as changes in the number of international marriages and families in which would like to educate their children multilingually and/ or the number of Japanese parents with international study abroad experience themselves, in turn wanting some sort of international, multicultural, or multilingual experience for their own children could be possible factors leading to the rise in the need for these type of schools; hence, the increase in the raw number of such schools. Possible avenues for future research could include a cross-examination of other factors that possibly led to the growth of these type of schools and simultaneously, analyzing whether the growth trend will continue in the future.

The Problem of Deciphering “What Actually is an Internationally-Oriented Preschool?”

Trying to decode or determine whether an institution or facility is actually an “internationally-oriented” preschool, solely based on institutional name can be quite confusing and problematic. When conducting an Internet search for international preschools in Japan or when browsing comprehensive lists that can be found on websites such as *Preschool Navi*, one will find many institutional names with the words “International”, “Bilingual”, “English”, prefixes and words such as “Duo”/ “Dual” partially embedded in their names. In other cases, the school name will be utilizing the English word “Kindergarten”, “Pre-school”, “Daycare”, or a combined portmanteau form such as “Kindercare”. On the other hand, the institutional name may have the *katakana* word of [*puri-su-kuu-ru* プリスクール] forming the official school name.

Although Murata's framework, "A Comparison of Nursery-Kindergarten and Preschools in Japan" which has been depicted in Table 2 is useful for a general discussion of internationally-oriented preschools in Japan, it makes it difficult for parents who would like to send their children to a bilingual, English-language medium-based, or an internationally-oriented institution to make specific decisions on what type of school they would like to actually send their child to. Therefore, the author would like to present alternative framework that centers upon a continuum of language use for daily routines, interaction and care to help conceptualize and analyze specific institutions so as parents can make informed decisions for the family and their child's future. Figure 2: "An Extensive Comparison of Nursery-Kindergarten and Preschools in Japan: According to Language-medium of Daily Routines, Interaction, Instruction and Care (Brooks, 2018)" seeks to posit and examine specific institutions in a more multi-faceted manner.



An Extensive Comparison of Nursery-Kindergartens and Preschools in Japan: Explaining the Four Models Housed Within

On the one end the spectrum, we have Japanese *Hoikuen and Youchien* where almost all daily routines, interactions and care are conducted in the Japanese language medium. A description along with some characteristics of such an institution may be as follows:

- a) Sending a child to this school/ facility may cost lower than other institutional options due to the fact that many are publicly operated.
- b) The proximity of the school may be close to the home of a family.
- c) A high percentage of teachers and staff will be certified.
- d) Proper safety/ illness/ natural disaster protocols will likely be in place.
- e) It will most likely be full-immersion in Japanese throughout the day.
- f) Peer interaction and play of the children will occur in the Japanese

language medium.

- g) In many cases, lunch and snacks are provided by certified staff and chefs.
- h) Potential disadvantages could include very little or no input in English (or the second language).
- i) Depending on the family, there could be cultural differences / differences in daily routines of the daycare center and in the home.
- j) All paperwork for registering are in Japanese and entry is not guaranteed for all families.
Depending on the situation of the municipality a family could be wait-listed.
- k) If the parents don't speak Japanese they may have communication difficulties with teachers.

On the other end of the spectrum where the predominant language of interaction, instruction and care will be in the English language medium, we have the categorical group of International Preschools and Nursery-Kindergarten programs of International Schools. A description along with some characteristics of such an institution may be as follows:

- a) Many of these institutions aim for/ proclaim "full-immersion" in English in terms of the care, interaction, communication with parents, and provide explicit instruction in the English language medium.
- b) Most of the teachers and staff will be certified (according to non-Japanese academic standards).
- c) Proper safety/ illness/ natural disaster protocols will likely be in place.
- d) Peer interaction and play of the children will be more likely to occur in the English language medium.
- e) Due to the fact that these will be private institutions, the tuition/ day care expenses will be anywhere between 80,000 to 200,000 yen per month. Therefore, it may be unaffordable for many non-affluent families.
- f) Depending on the family, there could be cultural differences / differences in daily routines of the daycare center and in the home. (Especially, if the Japanese language or Japanese culture is dominant at home.)
- g) Lunch and snacks may not be provided by the school. Therefore, parents may have to prepare meals and snacks on a daily basis.
- h) Depending on the family, the location of the school may be far from home (or the parents' workplace) and/ or is extremely inconvenient in terms of commute.
- i) Unlike public daycare facilities or programs they institutions they may not have care or supervision for extended hours available. Hence, it may not be a viable

option for some families.

Identifying how a specific preschool is aligned on the spectrum will depend on gathering information about a specific school. In some cases, based on some preliminary research, it may not be such a difficult task to do, especially if it fits into one language medium extreme or the other. However, for some schools, even after looking beyond the initial clues, it may not be so apparent. It may be necessary to look beyond just the school name and delve into the Homepage layout and analyze the language interface to dig a little deeper. Clues that are located on the main homepage of an institution may be indicative of the school's philosophy and language mediums it functions or operates in. In any case, for evaluative and assessment measures, the author has included two checklists in the Appendix titled: Appendix A: Checklist for Evaluating or Assessing an Early Childhood Education and Care Center in Japan and Appendix B: Checklist for Further Evaluating or Assessing an Early Childhood Education and Care Center in Japan. Appendix A is intended to help parents and families determine where on the spectrum does a specific ECEC center, preschool, or nursery-kindergarten fit into. Appendix B is proposed as means to help parents and guardians determine how other non-language medium related factors or characteristics would potentially make the school or "good fit" or not for the individual child and/ or family. Using the checklists, especially Appendix A can help with the analytical process of identifying preschools that fall in the middle ground categories of English-"Enthusiastic" Japanese *hoikuen* and *youchien* as well as those that are categorized as internationally-oriented preschools.

Located slightly to the left of the center of the continuum, we have the model of English-"Enthusiastic" Japanese *hoikuen* and *youchien*. The author chose the phrase English-"Enthusiastic" as means to describe Japanese *hoikuens* and *youchiens* that are functioning mostly in Japanese but to some extent, try to eagerly incorporate some form of or extent of English into their daily activities or routines. These institutions might for example, offer a weekly 30-minute session in English with an outside native English teacher or, conduct certain daily routines in English, or have a set song that is consistently sung in English every day. Ultimately, each individual institution will vary according to factors such as founding philosophies, staff availability and clientele needs. A hypothetical description along with some characteristics of such an institution may be as follows:

- a) These may either be private or public but more likely to be privately owned. Nonetheless, day care fees and tuition are usually reasonably priced.
- b) The proximity of the school may or may not be close to the home of a family.
- c) Percentage of teachers and staff that are certified will vary according to each institution.
- d) Proper safety/ illness/ natural disaster protocols will vary according to each institution.
- e) One advantage of enrollment could be that exposure to non-Japanese teachers and staff may foster sensitivity towards people of diverse backgrounds.
- f) Peer interaction and play of the children will likely occur in the Japanese language medium.

- g) Depending on how much language input there is in the second language, there is a possibility
for the children acquire a degree of bilingualism.
- h) However, the quality and amount of exposure to English will vary according to each institution.
- i) The outcomes of exposure to English may be difficult to measure or see.
- j) In some cases, if an English-speaking teacher is hired externally and is not present at the school
at all times, it may be difficult for parents and teachers to communicate / discuss aspects of their
child's development.

Located slightly to the right of the center of the continuum, we have the model of Internationally-Oriented Preschools. The author chose the phrase "internationally-oriented" to depict a range of preschool types that would likely utilize both language mediums of English and Japanese. How specific interactions take place in which language and aspects such as how daily schedules are organized, or how certain spaces on the premises of the school or arranged or allocated according to language will vary greatly according to each individual institution. Some schools and programs may offer bilingual curricula, or have certain times of the day that operate in the English language mode, or the Japanese language mode. Depending on the school, a certain part of the school might be designated as an "English-speaking zone" and/ or "a zone where it is okay to speak Japanese" but in other spaces children and staff are required to speak in English. In many cases, such institutions will likely have bilingual instructors as well as bilingual administrative staff members hired at the school. A hypothetical description along with some possible characteristics of such an institution may be as follows:

- a) Fees and tuition may cost more than public daycare and kindergartens, but are usually more
affordable than international preschools and preschools of international school programs.
- b) The proximity of the school may or may not be close to the home of a family.
- c) The Percentage of teachers and staff that are certified will vary according to each institution.
- d) Proper safety/ illness/ natural disaster protocols will vary according to each institution.
- e) Like English-"enthusiast" ECECs, an advantage of enrollment could be direct interaction with
non-Japanese teachers and staff may foster sensitivity towards people of diverse backgrounds.
- f) Peer interaction and play of the children will depend on the make-up of enrollment at the school
will be dependent on: How diverse or internationalized are the backgrounds of the children?
- g) Depending on how much language input there is in the second language, there is a possibility
for the children acquire a degree of bilingualism. Nonetheless, researchers such as Grosjean

(2012), especially emphasizes the importance of using the minority language at home in terms of frequency and in its purpose.

h) The quality and amount of exposure to English will vary according to each institution.

i) The outcomes of exposure to English may be difficult to measure or see.

j) Similar to situations at other institutions, if an English-speaking teacher is hired externally and

is not present at the school permanently, the parents and teachers may have a hard time

communicating or discussing the development of the child in terms of language and / or in other respects.

Utilization of the Framework and Links to Subsequent Themes of the Paper

Many of these descriptions and characteristics that are listed here have been organized and formulated based on a combination of both the author's in-person visitations and observations at more than a half-a-dozen preschools in the Tokyo area, and through information obtained on nearly another dozen schools by means of browsing and researching information about specific schools on the Internet. These generalized descriptions were written with the intent of potentially helping parents that plan to raise their own children bilingually or multiculturally with an analytical framework for assessing and evaluating how and to what extent did a specific school or institution utilize or function in the Japanese language, in the English language or with a combination of both languages—in essence trying help locate where on the spectrum did a specific preschool a fit and which model it might mirror or emulate. By no means was it created to “evaluate” whether a specific school was “good”, “bad” or “mediocre”. The author's goal is to ultimately help parents find the “appropriate” school or program that fits the needs of their child and /or goals of their own family.

In order to help make sound financial, educational and logistical decisions for their child's bilingual and multicultural development, the author would like to propose the following steps: 1) For families to first discuss, lay out and outline in written form what their specific educational, language and cultural goals are for their children; 2) Parents and guardians should then proceed to conduct research and complete visitations of potentials preschools or ECEC Centers, in person; 3) Upon completing evaluations of each potential location, parents should then finally, weigh the pros and cons of sending their child to that particular school or location in light of their future goals and the present financial situation and/ or familial circumstances. As reiterated before, it may not necessarily be choosing the ‘best’ school, but selecting the school that is “right” for the child and the particular situation that the family is in.

The goal of this paper was to first outline the current situation of Japanese Early Childhood Education and Care Centers and summarize differential characteristics of *Hoikuen*, *Youchien*, and the newer forms of unified care—*Youjien*.. Then it considered how the Ministry of Education, Culture, Sports, Science and Technology's proposals to revitalize English language education at the elementary school level since 2002 have played a role in the growth of the internationally-oriented/

international preschool market. Finally, the paper proposed an expansive analytical framework for examining kindergartens, international preschools and internationally-oriented daycare centers based on the continuum of language medium or mediums utilized in the daily routines, interaction, instruction and care at a specific institutions. Forthcoming themes to be explored in the subsequent papers, include the exploration of definitions regarding bilingualism, bilinguality and biculturalism, the review and scrutiny of several myths about bilingualism that are relevant to the topic of language development at the preschool age level, and an inquiry into the process of planning and implementing a bilingual action plan at home in hopes of create links language and developmental links between preschools and home.

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Appendix A: Checklist for Evaluating or Assessing an Early Childhood Education and Care Center in Japan

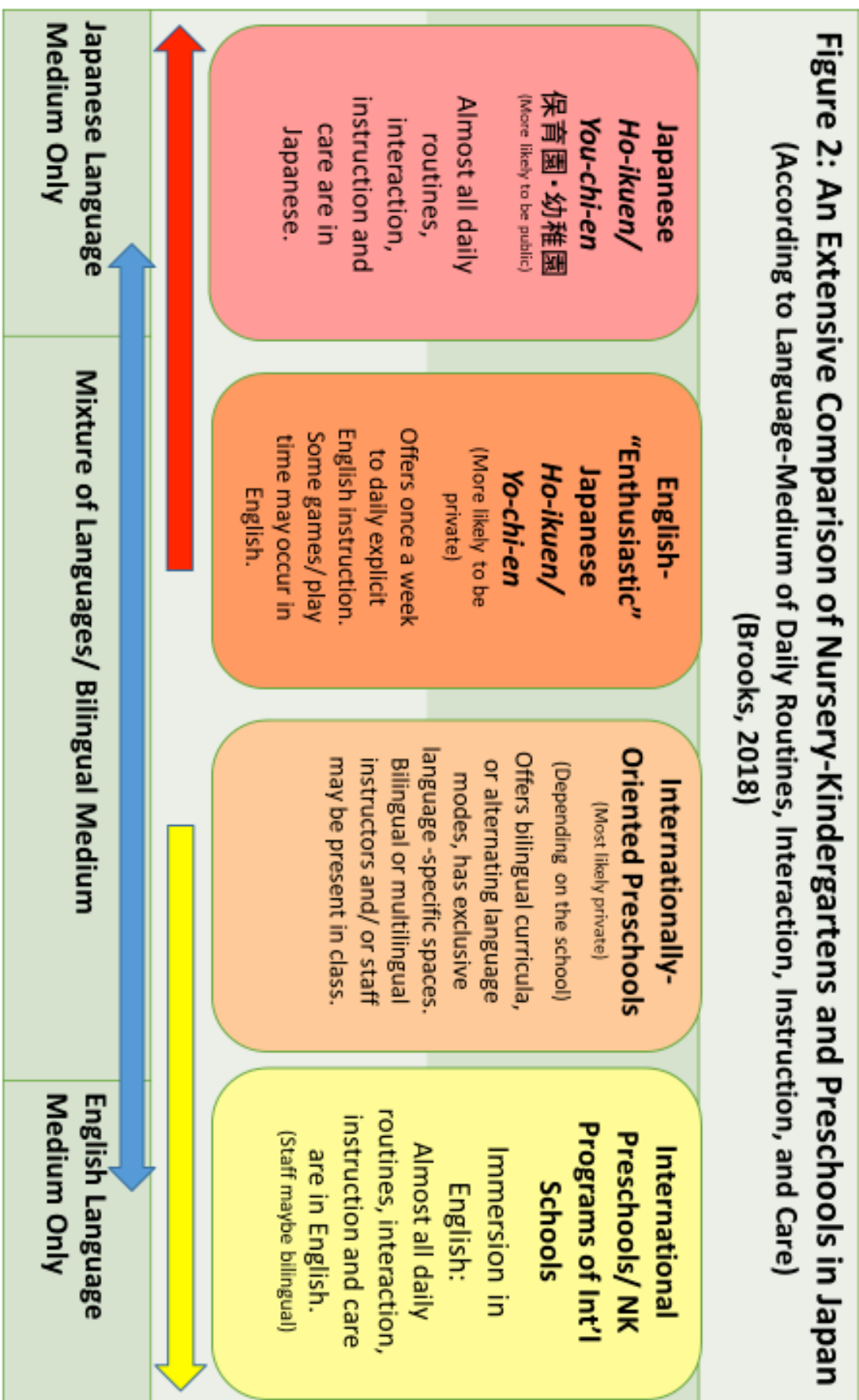
Determining where on the spectrum does this ECEC center/ pre-school/ NK fit into? (Simultaneously, is a good fit for our child/ children/ our family?)

<input type="checkbox"/> Founding Philosophy / Educational Philosophy Statement (webpage/ brochures)	<input type="checkbox"/> Explanations / information about curricula / daily or weekly schedules	<input type="checkbox"/> School visitation/ classroom observation opportunities (watching the teachers in action)
<input type="checkbox"/> Availability of Information in English and/ or Japanese	<input type="checkbox"/> Information on educational outcomes (self-reported/3 rd party assessed)	<input type="checkbox"/> Looking at the clues on the walls : Types of posters, colors, pics, achievements, writing, rules, etc.
<input type="checkbox"/> Language of Informational Sessions: Lang. spoken/ of the brochures/ Q &A	<input type="checkbox"/> Leadership / organizational structure and titles of individuals	<input type="checkbox"/> Listening to the sounds that you hear: Language of songs, playing, talking, of teachers
<input type="checkbox"/> Teachers: Certifications, nationalities, backgrounds and ratios	<input type="checkbox"/> Progression of students after completing the program	<input type="checkbox"/> Library: Size, type of books (lang.(s) of books), location in relation to entire school

Appendix B: Checklist for Further Evaluating or Assessing an Early Childhood Education and Care Center in Japan

Other factors for considering the ECEC center/ pre-school/ NK for your family. (Simultaneously, is it a good school? A good fit for our child/ children/ our family?)

<input type="checkbox"/> Tuition/ Day care fees	<input type="checkbox"/> Policies and Procedures for Lunch and Snacks	<input type="checkbox"/> School visitation/ classroom observation opportunities (See how the children/ teachers greet and interact with you)
<input type="checkbox"/> Number of Standard Hours/ Availability of Extended hours	<input type="checkbox"/> Size of the campus/ number of rooms/ space designated for play/ age-designated spaces	<input type="checkbox"/> Diversity in backgrounds of staff, teachers, and children enrolled
<input type="checkbox"/> Information on Safety and Illness Guidelines/ Protocol in the event of a disaster	<input type="checkbox"/> Proximity of school/ facility to local parks	<input type="checkbox"/> Using the sense of smell: Determining sanitation standards, whether staff is well-staffed/ under-staffed
<input type="checkbox"/> Distance to and from Home (Distance to and from Parents' workplace)	<input type="checkbox"/> Types of Toys / Play Facilities that are available (including times of bad weather)	<input type="checkbox"/> Toilet training/ usage philosophies



***The Satisfaction on Supportive Learning Materials of Students and Lecturers of
Medical and Public Health Secretary Program***

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The Asian Conference on Education 2018
Official Conference Proceedings

Abstract

This research aim to study on satisfaction rate and improvement process of supportive learning materials in College of Allied Health Sciences, Suan Sunandha Rajabhat University, branch of Medical and Public Health Secretary. Furthermore, the research result will be reported for future arrangements of supportive learning materials. In this study, there are 54 questionnaires, which is categorized in 4 main subject matters, distributed to the first and second year students, branch of Medical and Public Health Secretary. It is found that the satisfaction rate of students and lecturers is at upper rate, which has the average at 4.12 from all 4 subject matters. In addition, the satisfaction rate from all subject matters are 4.22, 4.13, 4.09, and 4.03 from the academic matter, service matter, location & environmental matter, and educational tools & equipment respectively. Therefore, the research results affect development and adjustment for educational purposes, which we aim to sustainably and continually be standardized.

Keywords: satisfaction rate, students, lecturers, supportive learning materials

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Introduction

Nowadays, education is progressed and continually advanced. The style, format, and fashion are adapted and adjusted over period. Therefore, both educational system and students can be flexible, creative, and challenge, which aspects the issues to riddles. Other than the development and the system quality, curriculum management is also important. Academies would sustain and develop the well-refined course syllabus with proper learning and teaching.

The actuation of curriculum management must have supportive learning materials; consist of physical, equipment, service, and academic respectability, which improves the quality of learning and teaching. Therefore, in order to gain the fact and the matters of supportive learning materials for students and lecturers in Suan Sunandha Rajabhat University, branch of Medical and Public Health Secretary, and recompense to the 8th National Economic and Social Development Plan that aims to improve the quality of human resources as a basis to national developments that implies to verify and evaluate the educational quality, the studied of satisfaction rate and improvement process in the matters of education are introduced for the adjustments of learning and teaching in supportive learning materials for College of Allied Health Sciences, Suan Sunandha Rajabhat University.

Objectives

1. To study the supportive learning materials of students and lecturers in the branch of Medical and Public Health Secretary.
2. To evaluate the satisfaction rate of supportive learning materials of student and lecturers in the branch of Medical and Public Health Secretary.
3. To improve the course syllabus, the educational services, tools, and equipment from the research results.

Literature Reviews

The Theory of Satisfaction

The meaning scope of satisfaction generally in studies consists of two dimensions, which are Job Satisfaction and Service Satisfaction. This study desire the Service Satisfaction which is variously referenced in the resemblance and relation to common attitude. For instance, Vroom (1970) said that attitude and satisfaction in a thing is interchangeable, which means that the involvement of a person will produce positive or negative attitude based on their satisfaction or dissatisfaction respectively. Another example from McCormick (1965) said that satisfaction is the human motivation that is closely related and incentive to basic needs. Dalton (1968) said that attitude is the feeling of liking or disliking in individuals or environment. Lastly, Shelly (1975) studied in the topic of satisfaction and concluded that satisfaction is two expressible feeling which are positive and negative feeling. The positive feeling is the feeling that occurs when we happy, this happiness is different from other positive feelings since this happiness cause another happiness. Furthermore, this happiness is a complex

feeling and is concerned more individually. Negative feeling, positive feeling, and happiness are complexly related, and this complex relationship is called satisfaction, where satisfaction occurs when positive feeling is greater than negative feeling. The factor that cause human satisfaction commonly includes resources and stimuli. Satisfaction analysis is the study of the resources and stimuli that is preferable, satisfiable, and provides happiness. Satisfaction mostly occurs when the resources are fully occupied. Although there are many given meanings of satisfaction, satisfaction commonly describe about the value evaluation feeling of a person to a certain instance. All in all, it is shown that satisfaction and attitude are indistinguishable related to each other (Pituk Truttim, 1995, pp. 24-25).

The Studies about Satisfaction in Thailand

The research of satisfaction in Thailand consists of two dimensions as described above. These are the following dimensions:

1. Job Satisfaction: the value evaluation of personnel to their working environment.
2. Services Satisfaction: the value evaluation of customer and consumer to certain matters of the products and/or services.

Therefore, these two types of research aim to study the fact of satisfaction rate which refers to the factor that affect the satisfaction and find out the other factors that also affect the satisfaction rate.

Principles of Public Health Service

Kulton Tanapongsation (2005, pp. 155-156) concluded the following list of principles:

1. The Principle of General Needs: the benefits from the provided services must be agreeable to the general needs, not a specific target group.
2. The Principle of Regularity: the services must sustainably and continually proceed.
3. The Principle of Equality: The services must provide equally to all consumers and must not provide any kind of privilege to a certain group.
4. The Principle of Conservative: The cost of providing services must not exceed the income.
5. The Principle of Convenient: The services that provide to the consumers must follow the aspect of ease, convenient, and reasonable cost.

The Theory of Evaluation

1. The Composition of Evaluation

Pasamon Katkrongsuk (2006) said that evaluation is the verification process of operation to the result production. It is the process to control and advance the operation to fulfill the project's objectives, seek for solutions, and lead the

improvement of working process and plan. The important principles of the evaluation aim the validity and accomplishment.

2. The Scope of Satisfaction

Generally, the studies of satisfaction consists of two dimensions which are Job Satisfaction and Service Satisfaction. In this study, it is the study of service quality which is mainly focus on Service satisfaction where the value evaluation of customers or consumers concern to a certain matter. The objectives of this studies aim to find the fact of satisfaction rate. Therefore, finding the facts and factors to the cause of satisfaction must be from varies amount of target group.

3. The Studies of the following Components

- a. Affective component is an aspect of feeling or emotion consists of two aspects, which are positive (pleased and willing) and negative aspects (dislike, displeased, fear, and disgusted)
- b. Thought component, the perception and predicate that generates the knowledge and aspect to the matters and situations, is the component that refers to how people think of righteousness, right or wrong, and good or bad.
- c. Behavioral component is the act that responds to the aspect of the actor.

4. The Factors to Satisfaction

The factors to satisfaction can be considered from the idea and notion to the public health services. Satisfaction is a factor to success, especially in not only the service quality, but also the working process quality. The reason is that the advancement or development of the service is a key factor to indicate the number of consumers. Therefore, knowledgeable producers should study these factors and components of the service in order to reach the satisfaction rate of consumers, so that the result from the study can be used as the guideline of improvements and developments.

Related Work

Bannasorn Santhan. (2012) studied the students' satisfaction toward the management of Suan Sunandha Rajabhat University. The research result showed that the overall averages of satisfaction rate of media / teaching equipment was at good. That was, the University had sufficient teaching equipment. The teaching / learning materials were clear and easy to understand.

Sriampun Yukongkram, Jumroon Jirattiti and Duangporn langla (2016) studied the satisfaction to supportive learning materials of the faculty of Public Health, Bangkok Thonburi University. The research result showed that the overall averages of satisfaction rate was at good, from a side of satisfaction on education building, which includes buildings, environments, and atmosphere, and another side of satisfaction on outdoor environment.

Bungorn Rattanamanee & Kunya Jaroensuk (2010) studied the satisfaction of students to educational service at College of Industrial Technology, King Mongkut's University of Technology North Bangkok. The research result showed that the overall averages of satisfaction rate, consists of personnel, service, facilities, and location, was at average. However, when the result is based on the educational year, in the part of satisfaction rate to the location has 0.5 differences.

Sirinat Saiong (2007) studied the satisfaction of bachelor students to the educational service on Postgraduate Programmes, Phranakhon Rajabhat University. The research result showed that the overall averages of satisfaction rate was at high, from the highest to lowest satisfaction rate in the subject matter of service, personnel, and facilities respectively.

Punnee Sukthong (2007: Abstract) studied the satisfaction of parents on environmental conditioning in Chumchon Watsainoi School, Sainoi District, Nonthaburi. The research result showed that the overall averages of satisfaction rate was at high. However, when the result is based on the educational year, in the part of satisfaction rate to the location has 0.5 differences.

Scope

In this study, the questionnaire is used for the evaluation of satisfaction rate in supportive learning materials of the 1st and 2nd year worth 45 students in total and 9 lecturers from the branch of Medical and Public Health Secretary. There are 4 subject matters that consist in this study, which are the academic matter, service matter, location & environmental matter, and educational tools & equipment.

Research Model

This research is descriptive research.

Population and Samples

The population and samples that are applied in this research are the 1st and 2nd year bachelor worth 45 students and 9 lecturers from the branch of Medical and Public Health Secretary.

Research Methods and Tools

The research methods and tools are the questionnaire that inquire about the supportive learning materials to students and lecturers in College of Allied Health Sciences, Suan Sunandha Rajabhat University, branch of Medical and Public Health Secretary. The rating scale is separated into 5 levels of score, where the highest, high, moderate, low, and lowest are 5, 4, 3, 2, 1 respectively. The questionnaire is inspected by 3 lecturers, calculated Index of Item Objective Congruence (IOC) worth of 0.89, the level of confidence is at 0.95 calculated by Cronbach's Alpha Coefficient. The statistics measurement that are used in this research are frequency distribution, percentage, and

standard deviation, separated into two parts which are general personal information and the satisfaction rate in supportive learning materials.

Data Collection

The data of satisfaction rate in supportive learning materials is collected from the students and lecturers in College of Allied Health Sciences, Suan Sunandha Rajabhat University, branch of Medical and Public Health Secretary, 2016. The questionnaires are distributed to the students from the 1st of September to the 30th of November, 2017.

Data Analysis and Translation

The experimental result found out that 87.04% is female in Table 1, where 53.7%, 29.63%, and 16.67% are 1st year, 2nd year students, and lecturers respectively as shown in Table 2.

Table 1: Quantity and percentage of gender

Gender	Quantity	Percentage
Male	7	12.96
Female	47	87.04
Total	54	100

From the shown result of Table 1, the evaluator for satisfaction rate in supportive learning materials consists of 54 evaluators in total, where 7 and 47 evaluators are male (12.96%) and female (87.04%) respectively.

Table 2: Quantity and percentage of students and lecturers

Gender	Quantity	Percentage
1st year	29	53.7
2nd year	16	29.63
Lecturers	9	16.67
Total	54	100

From the shown result of Table 2, the evaluator for satisfaction rate in supportive learning materials consists of 54 evaluators in total, where 29, 16, and 9 evaluators are 1st year (53.7%), 2nd year students (29.63%), and lecturers (16.67%) respectively.

Table 3: Average and standard deviation of satisfaction rate in supportive learning materials of students and lecturers. (n=54)

Evaluation Items	Average (\bar{X})	Standard Deviation (SD)	Satisfaction Rate
Educational Tools & Equipment	4.03	0.77	High
Location & Environmental Matter	4.09	0.67	High
Academic Matter	4.22	0.59	High
Service Matter	4.13	0.61	High
Overall Averages	4.12	0.69	High

The overall satisfaction rate in supportive learning materials of students and lecturers showed that the two highest score of subject matters are 4.22 and 4.13 at academic and service matter respectively.

Table 4: Average and standard deviation of satisfaction rate in educational tools and equipment of students and lecturers. (n=54)

Educational Tools & Equipment	Average (\bar{X})	Standard Deviation (SD)	Satisfaction Rate
Sufficiency of tools and equipment	3.98	0.68	High
Performance of tools and equipment	4.09	0.7	High
Ease of use and understanding	4.02	0.78	High
Overall Averages	4.03	0.77	High

From the shown result of Table 4, the average satisfaction rate of students and lecturers in the branch of Medical and Public Health Secretary in educational tools and equipment is at 4.03, where the highest and lowest average score are from the performance of tools and equipment (4.09) and sufficiency of tools and equipment (3.98) respectively.

Table 5: Average and standard deviation of satisfaction rate in location matter of students and lecturers (n=54)

Location Matter	Average (\bar{X})	Standard Deviation (SD)	Satisfaction Rate
Overall environment in classroom and laboratory (neatness, lighting, etc.)	4.02	0.78	High
Overall environment outside classroom and laboratory (neatness, lighting, etc.)	4.06	0.76	High
Classroom size and sufficient equipment	4.15	0.62	High
Sufficient buildings and classrooms	4.04	0.69	High
Sufficient medical room	4.41	0.49	High

Location Matter	Average (\bar{X})	Standard Deviation (SD)	Satisfaction Rate
The location is proper to do other activities such as exercising.	4.07	0.69	High
The environment in restroom (neatness, lighting, airy)	4.09	0.65	High
The environment in canteen (neatness, lighting, food variety)	4.00	0.69	High
Sufficient and safeness parking entries	3.98	0.73	High
General environment for educational purpose	4.09	0.67	High
Overall Averages	4.09	0.67	High

From the shown result of Table 5, the average satisfaction rate of students and lecturers in the branch of Medical and Public Health Secretary in location matter is at 4.09, where the highest and lowest average score are from the sufficiency of medical room (4.41) and sufficiency for parking entries (3.98) respectively.

Table 6: Average and standard deviation of satisfaction rate in academic matter of students and lecturers (n=54)

Academic Matter	Average \bar{X}	Standard Deviation (SD)	Satisfaction Rate
Sufficiency of books and publications in the library	4.19	0.7	High
Modernization of books and publications in the library	4.19	0.64	High
The variety of researches and learning medias such as computers, internet connection, and database	4.20	0.4	High
The sufficiency of researches and learning medias such as computers, internet connection, and database	4.28	0.45	High
Academic Matter	Average \bar{X}	Standard Deviation (SD)	Satisfaction Rate
The modernization of library's tools (computers and self-learning room)	4.20	0.59	High
Educational services and activities	4.24	0.6	High
Overall Averages	4.22	0.59	High

From the shown result of Table 6, the average satisfaction rate of students and lecturers in the branch of Medical and Public Health Secretary in academic matter is at 4.22, where the highest and lowest average score are from the sufficiency of researches and learning medias such as computers, internet connection, and database (4.28) and both sufficiency and modernization of books and publications in the library (4.19) respectively.

Table 7: Average and standard deviation of satisfaction rate in service matter of students and lecturers (n=54)

Service Matter	Average (\bar{X})	Standard Deviation (SD)	Satisfaction Rate
General services from personnel in faculty	4.11	0.59	High
General services from personnel in library room / computer room / self-learning room	4.17	0.6	High
General services from personnel in registration office	4.15	0.59	High
General services from personnel in financial department	4.09	0.65	High
General services from personnel in student development department	4.11	0.66	High
General services from personnel in scholarship department	4.09	0.59	High
Service Matter	Average (\bar{X})	Standard Deviation (SD)	Satisfaction Rate
General services from personnel in medical room	4.19	0.7	High
Overall Averages	4.13	0.61	High

From the shown result of Table 7, the average satisfaction rate of students and lecturers in the branch of Medical and Public Health Secretary in service matter is at 4.13, where the highest and lowest average score are from the general services from personnel in library room / computer room / self-learning room (4.17) and both in financial department and scholarship department (4.09) respectively.

Conclusions

Concluding from the research result, it was shown that the overall satisfaction rate on supportive learning materials to students and lecturers in the branch of Medical and Public Health Secretary is at high (\bar{X} = 4.12, SD = 0.69). When it was sorted from the highest and lowest average satisfaction rate in each subject matter, these are the following list of results.

In academic matter, the result showed that it is from the sufficiency of researches and learning medias such as computers, internet connection, and database (\bar{X} = 4.28, SD = 0.45) and both sufficiency and modernization of books and publications in the library (4.19) respectively. The cause of the lowest satisfaction rate may come from the location of the department which move to education center in Samut Songkhram. Therefore, books and publications are still insufficient within the institution.

In service matter, the result showed that it is from the general services from personnel in library room / computer room / self-learning room (\bar{X} = 4.17, SD = 0.6) and in scholarship department (\bar{X} = 4.09, SD = 0.65) respectively. The reason that the scholarship department has the lowest satisfaction rate may be caused from the strictness of the rules and regulations which affect the aspect of the person who would like to use the service.

In location matter, the result showed that it is from the general services from the sufficiency of medical room (\bar{X} = 4.41, SD = 0.49) and sufficiency for parking entries (\bar{X} = 3.98, SD = 0.73) respectively. According to the new and early construction of the branch of Medical and Public Health Secretary, the reserve slot for car parking may not be sufficient.

In educational tools and equipment matter, the result showed that it is from the performance of tools and equipment (\bar{X} = 4.09, SD = 0.7) and sufficiency of tools and equipment (\bar{X} = 3.98, SD = 0.68) respectively. The number of the tool usages is not consistent, while the number of the new incoming students rose since the starting of the semester. Therefore, it would be better if the tools and equipment are gradually imported yearly.

Discussions

According to the research result, the overall satisfaction rate from students and lecturers in the branch of Medical and Public Health is at high, where average satisfaction rate of the academic, service, location, and educational tools and equipment matter are at 4.22, 4.13, 4.09, and 4.03 respectively. In addition, the lowest satisfaction rate is also from the educational tools and equipment matter where the average satisfaction rate of 3.98 is from the sufficiency of tools and equipment. To sum up, the college of Allied Health Sciences, Suan Sunandha Rajabhat University should improve the quality of tools and services that also includes the learning and teaching within the sufficient books and publications. Moreover, it would be better with the guidelines in order to recondition for the better and more appropriate learning environment.

Acknowledgement

The researcher would like to thank the students and lecturers of Medical and Public Health Secretary Program who participated in this data compilation.

This research was supported by Suan Sunandha Rajabhat University, the researcher would like to thank College of Allied Health Sciences, SamutSongkhram Education Center for supporting this achievement.

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